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McQuaid, K., Vanderbeck, R.M., Valentine, G. et al. (4 more authors) (2018) Urban climate change, livelihood vulnerability and narratives of generational responsibility in Jinja, Uganda. Africa, 88 (1). pp. 11-37. ISSN 0001-9720

https://doi.org/10.1017/S0001972017000547

URBAN CLIMATE CHANGE, LIVELIHOOD VULNERABILITY, AND NARRATIVES OF GENERATIONAL RESPONSIBILITY IN JINJA, UGANDA

ABSTRACT

There is an urgent need to understand lived experiences of climate change in the context of African cities, where even small climate shocks can have significant implications for the livelihoods of the urban poor. This article examines narratives of climate and livelihood changes within Jinja Municipality, Uganda, emphasising how Jinja's residents make sense of climate change through their own narrative frames rather than through the lens of global climate change discourses. We demonstrate how the onset of climate change in Jinja is widely attributed to perceived moral and environmental failings on the part of a present generation that is viewed as both more destructive than previous generations and unable to preserve land, trees, and other resources for future generations. A focus on local ontologies of climate change highlights how the multiple, intersecting vulnerabilities of contemporary urban life in Jinja serve to obfuscate not only the conditions of possibility of an immediate future, but the longer-term horizons for future generations, as changing weather patterns exacerbated existing challenges people face in adapting to wider socio-economic changes and rising livelihood vulnerability. This form of analysis situates changing climate and environments within the context of everyday urban struggles and emphasises the need for civic participation in developing climate change strategies that avoid the pitfalls of climate reductionism. The article draws on more than 150 qualitative interviews, generational dialogue groups, and creative methods based on research-led community theatre.

INTRODUCTION

There is growing recognition of the need to understand lived experiences of climate change within the context of urban poverty in the global South, where even small climate shocks can have significant implications for the livelihoods of urban poor (Roy et al. 2016; Mearns and Norton 2010). A considerable volume of research focuses on different scientific and engineering approaches to mitigating the effects of urban climate change,[1] while also exploring the characteristics of effective climate change governance[2]. A number of scholars, however, have recently stressed how climate change strategies must be more firmly grounded in an understanding of how climate change is conceptualised in local places. Climate change, it is argued, should be examined as a kind of 'knowledge-in-practice' (Lorimer 2006) to provide greater insight into 'a messy world of ramifications, surprising activities and unexpected "social" context' (Krauss 2009: 149-50) in relation to changing climate patterns. Researchers increasingly pose challenges to western assumptions of a universal ontology of climate change (Rudiak-Gould 2012), proposing instead that research must adopt relational definitions that seek to encompass the wide diversity in local ontologies. As Brace and Geoghegan (2010: 3-4) argue, conceptualising climate change in relational terms enables new understandings of how climate change interrelates with other kinds of local environmental knowledge, enabling 'different ways of knowing to play a legitimate part in framing a culture of climate change'.

In response to these calls to produce more relational understandings of climate change, this article explores narratives of urban climate change in one 'ordinary' (Robinson 2006) African city: Jinja Municipality in eastern Uganda. We demonstrate how adopting a relational understanding of climate change can help reveal interconnections between lived experiences of rising urban vulnerabilities and a changing climate, demonstrating how climate change can exacerbate the everyday challenges of African urban life. Although Africa has been characterised as 'the continent most vulnerable to climate change but least responsible for greenhouse gas emissions' (Chin Yee 2016: 360), African cities remain relatively under-represented in the rapidly growing literature on urban climate change. Climate change is likely to impact cities across Africa through increased droughts, floods, fires, heat waves and reduced ecosystem services (Lwasa et al. 2015; UNFCCC 2007; IPCC 2014), with impacts unevenly distributed as the most impoverished urban residents suffer the greatest effects (Adejuwon 2006; Adelekan 2010) To date, however, African climate change research has been heavily rural in focus. A common approach has been to explore local descriptions of weather events

and then question whether farmers' observations correspond with scientific measurements (see West et al. 2008; Kemausuor et al. 2011; Osbahr et al 2010 and 2011). Other, more culturally-based research has revealed modes of weather prediction in rural areas and how people seek causes for seemingly changing weather patterns in local events (Meze-Hausken 2004; Slegers 2008; Brou & Chaléard 2007; Tschakert 2007; Orlove et al. 2010; Guthiga & Newsham 2011). In contrast to these strands of rural-based research, local understandings of climate change remain under-researched in urban Africa, particularly in smaller cities as opposed to major urban capitals and emerging megacities.

The article proceeds as follows. We first provide an overview of Jinja's changing urban landscape, followed by a discussion of the research methods used in this project, which combined more than 150 qualitative interviews, generational dialogue groups, and creative methods based on research-led community theatre. Having outlined the context and approach, we then discuss local perceptions of climate change in Jinja. We emphasise how Jinja's residents made sense of a changing climate through their own narrative frames rather than through the lens of more globalised discourses of climate change. We next explore how the onset of climate change in Jinja is widely attributed to perceived moral and environmental failings on the part of a present generation that is viewed as both more destructive than previous generations and unable to preserve land, trees, and other resources for future generations due to the uncertainties of living in a cash economy. These growing uncertainties impede people's ability to imagine or plan for the future, as changing weather patterns exacerbate the already severe challenges people face in adapting to wider socio-economic changes and securing assets for themselves in the present, let alone for future generations. The conclusion reflects upon how this form of analysis situates changing weather and environments within the context of everyday urban struggles and highlights the need for civic participation in developing climate change strategies. Overall, the article contributes to forestalling what Hulme (2011) calls 'climate reductionism' by demonstrating the complex entanglement of climate change with other dimensions of society-environment relations amongst urban communities in Jinja.

THE URBAN LANDSCAPE OF JINJA MUNICIPALITY

Despite Uganda's urban population having increased from 1.7 million in 1991 to 7.4 million in 2014[3] (UBOS 2016), recent research and governmental reports on climate change in

Uganda tend to focus on rural communities, particularly small-holder farmers who raise concerns over planting and reliability of certain key crops, land conflicts and issues around land tenure, and the growing inequalities arising around such conflicts (Apuuli et al. 2000; Ericksen et al. 2008; GoU 2007; James 2010; Osbahr et al. 2011). Similar to the case of Mombasa as studied by Kithiia and Dowling (2010: 471), Ugandan stakeholders across most sectors have yet to recognise the 'synergies between successful climate change adaptation and successful local city development initiatives'. However, climate change affects many different aspects of both rural *and* urban livelihoods, exacerbating existing vulnerabilities in health, water availability and agricultural production (IPCC 2007), as well as, for example, contributing to an increased incidence of malaria in some regions (Patz and Olson 2006; Wandiga et al. 2010) and flooding in the capital, Kampala (Douglas et al. 2008).

Jinja Municipality is situated on the northern shore of Lake Victoria and eastern bank of the river Nile, covering an area of approximately 28 square kilometres. Jinja has a population of around 76,000 and a large reported daily in-flow (JMC 2009; UBOS 2016), exerting pressure on already stressed services and infrastructure. Historically, Jinja was a centre of industrial production, the 'pearl' in Winston Churchill's Africa, yet at present there is a widespread narrative of urban industrial decay (Byerley 2011: 486) with roots in post-colonialism and the post-industrialisation triggered by the expulsion of the Asian community in 1972 and a near-continent-wide deterioration of urban labour markets. Livelihood choices across African cities are increasingly informal and economically insecure. Weak links between urbanisation and economic growth have failed to generate required levels of job creation (Banks 2015: 11; Nel 2007; Simone 2001; Turok 2013; Potts 2013), and those jobs that are created are frequently of an exploitative or stigmatising nature (Banks 2015; Chant and Jones 2009; Hansen 2005; Locke and Lloyd-Sherlock 2011; Mains 2007).

In a context of an 'intensifying immiseration of African urban populations' (Simone 2004: 428), the livelihood vulnerabilities of Jinja's residents are no exception. A substantial proportion of Jinja's population live in poverty, particularly within Walukuba/Masese division, an area of former workers' estates that now constitutes an expanding slum belt characterised by precarious land tenure and dwindling urban services (Namisi and Kasiko 2009:4). The poorest residents live in the interstices of Jinja's urban landscape, in informal overcrowded housing with poor sanitation[4], along the riverbanks, in the poorly maintained estates, and within the wetlands of the lakeshore. Jinja is currently experiencing a modest industrial renaissance with the opening of new factories (such as those manufacturing soap,

plastic goods, textiles, alcohol and steel) and a slow growing stream of foreign investment (mostly from China and India). However, the jobs this provides are typical of much of urban Africa: unskilled, poorly paid (characterised by twelve-hour shifts for the equivalent of circa £1 per day) lacking job security, benefits, and health and safety protections.

Against a national backdrop of a rapidly growing population, local net out-migration[5], a significant youth 'bulge'[6] and unemployment, endemic corruption, and weak health and education systems, Jinja's residents (many of whom were either raised as, or by, subsistence farmers in rural villages rather than an urban cash economy) face the need to diversify into riskier livelihood strategies. Many practice forms of urban and peri-urban agriculture (UPA) on spare scraps of land in the municipality and/or on rural land in (patrilineal) natal villages, and an estimated 80% of inhabitants are involved in Jinja's informal sector (Namisi and Kasiko 2009:4). Jinja's streets, marketplaces, and small harbours bustle with people earning a livelihood from self-initiated, unregulated, often illegal and environmentally unsustainable strategies (see Lince 2011:74). These include tree-cutting for charcoal to either sell or consume (the most commonly cited environmental problem by Jinja's residents, as we discuss below), small-scale fishing – particularly of juvenile fish stocks, and hawking fruit and vegetables, clothes or other household necessities, with little hope of accumulating any savings. Many of these activities, in contrast to the economic transformations widely associated with urbanisation and engagement in higher value-added work and production – were partly or wholly dependent on the natural environment and were thus highly sensitive to changes in weather. Evidence from sub-Saharan Africa shows how UPA (and UPAF) form important sources of livelihood for the urban poor (Lwasa et al. 2015; Frayne et al. 2014; Potts 2013; Muzzini and Lindeboom 2008) where an estimated 40% of urban dwellers in Africa are involved in agricultural and related sectors (Zezza and Tasciotti 2010). A significant proportion of Jinja's residents thus remained at least partly tied to 'rural' economic activities through either agriculture or peri-urban agriculture, or procuring goods to either sell or consume such as charcoal, fruit and vegetables originating from rural areas. As the population increasingly experience the impact of an erratic climate, their adaptive capacity to this and other socioeconomic shocks is increasingly under threat, making research on climate change an issue of urgency in Jinja.

METHODOLOGICAL APPROACH

This article draws on materials collected in 2015-2016 as part of a broader, multi-sited project investigating how the linkages between intergenerational justice, consumption and sustainability are conceptualised by people in contrasting urban contexts in Uganda, China and the United Kingdom. Fieldwork in Uganda was based in Jinja and combined conventional ethnographic techniques with more innovative approaches influenced by intergenerational practice and participatory community theatre (see McQuaid and Plastow 2017). Specifically, the data used in this article are drawn from:

1. *Narrative interviews* (n=91), involving a diverse sample in terms of age, gender, socioeconomic status, ethnicity, and location of residence within Jinja.

2. *Key stakeholder interviews* (n=32) with local government officials, technical officers working for the Municipality, CBOs and NGOs, religious and community leaders.

3. *Family-based interviews* (n=16 families; 46 individuals) involving three generations from a single family (grandparent, parent, and child). Selected to represent a diversity of families, members were interviewed regarding environment, consumption and generational responsibilities.

4. *Community participatory theatre* involving a ten-month process with circa 60 participants from Walukuba/Masese division that sought to engage participants in a process of dialogic circular action and reflection, including drama, art, poetry, song amongst other forms of creative expression. We initially worked in three groups: separate groups for younger men and women (aged 14-35) and a mixed group of the 'older generation' (aged 30-60)[7]. The groups met separately for two hours a week, using theatre exercises to stimulate discussion on issues ranging from environmental sustainability to economics, sanitation and gender relations, before being brought together to produce three intergenerational knowledge exchange events.[8]

5. *Generational dialogue groups* (n=12) with pre-existing generational peer or community groups, including seven youth groups (20-34) and five 'older' generation groups (aged 31-88), from locations across Jinja.

All interviews were conducted by the first author, in some cases with assistance from an experienced translator[9], reflecting the multitude of languages spoken in Jinja. Interviews were

analysed using conventional social science techniques. All names used in this article are pseudonyms.

The mixed methods approach employed here was designed to facilitate a form of deep ethnographic engagement that has been lacking in much urban climate change research. Given that recognition of the special significance of climate impacts on urban areas is comparatively recent (Matthias and Coelho 2007:7), work to map urban vulnerabilities remains less developed than ongoing national climate change assessments, strategies and plans focused on environmental and agricultural concerns (Moser et al. 2010). Silver et al. (2013:666) suggest that where this work has been undertaken, it has often ignored or underplayed the links between climate change, development and the economic dimensions of vulnerability (see also Hunt and Wakiss 2011). In their efforts to meaningfully measure adaptation, Pelling and Wisner (2009), however, point to the need to contextualise climate change with other risks – social, economic, political, environmental – that shape and limit human well being and the functioning of socio-economic systems. Barnes et al. (2013:543) argue that some climate mitigation strategies potentially distract attention from other activities with more immediately significance to people's lives, inadvertently reinforcing existing inequalities (see also Gasper et al. 2011 and Lopez-Marrero and Yarnal 2010). Pelling (2011) highlights the importance of human-centred analyses which address climate change adaptation 'within the context of multiple risks, and of people's general well being'. Ethnographic research can help better situate climate change within the complex web of social and material relations that mediate people's interactions with their environments (Cassidy 2012).

A substantial majority of our interviewees were unfamiliar with scientific discourses of anthropogenic global climate change. The few who had encountered the term 'climate change' (often in the media), felt ill-equipped to engage with what was seen to be an inaccessible expert knowledge reserved for 'scientists' and 'geographers'. To openly discuss climate change with interviewees entailed using a broader vocabulary: respondents were asked more generally about changes they had observed in the environment and in weather. In both Luganda and Lusoga (the two dominant languages in Jinja, along with English) the word for environment – *butonde* – refers to the natural and man-made environment surrounding an individual, including not only atmospheric, terrestrial, aquatic and built environments but also the social or political context and way of living. Questions of environmental change thus invited reflections on changes in the weather and seasons, changes in the local urban

environment, and how the social fabric of life itself was changing. The binding of social, urban and natural worlds is enshrined within the cultural construct of 'environment'. Throughout the text when individuals refer to 'climate change', it thus refers to local perceptions about the changing environment rather than any abstracted scientific understanding of global climate change processes. In the sections below, we examine respondents' understandings of what Brace and Geoghegan call 'climate and the ways in might change' (2010: 3), tracing how people in Jinja both sought to explain the causes of observed changes in weather and attribute blame for them. As we demonstrate, climate change is simultaneously produced and 'grounded' in a context of rapid sociocultural transformation amongst an urban community, shaped by a dynamic set of intersecting material and discursive linkages that can be difficult to disentangle (Murphy et al, 2016: 35; Jasanoff 2010).

CLIMATE CHANGE IN JINJA: CAUSES, CONSEQUENCES, AND THE ATTRIBUTION OF BLAME

Amongst both ordinary residents and many key stakeholders in Jinja, climate change was primarily interpreted as a local phenomenon of increasingly erratic rainfall distribution generated by changes in the ways local people live. In Uganda, annual rainfall is less critical to farmers' production than distribution through a season, the way rain falls during rainfall events, and the impacts of increased temperature on soil moisture (Osbahr et al. 2011:294; Mukiibi, 2001). This was the main concern of Jinja's residents. Respondents of all ages worried about changes in weather patterns, namely the unpredictability of when the rainy seasons would begin and the perceived reduction in their total number. These changes had significant implications for the practice and success of UPA. In both 2015 and 2016 during the fieldwork period, the rains usually anticipated for arrival in February did not appear until at least late-April, with residents enduring a particularly hot and dusty March, making it difficult to plant crops, delaying the harvest, reducing yield, causing crop failure, and driving up food prices. They also recognised more intense rainfall, especially in the second rains at the end of the year, causing flooding and erosion (Oxfam, 2008) and generating food insecurity at certain times of the year. As one woman who engaged in peri-urban agriculture, selling maize and bananas, explained:

> It has been very dry so it has changed a lot […] It has affected so much that long ago there used to be a lot of food and the rains would come and we would plant everything but now we do not have food, we just buy […] The rains when they come these days

> there is a lot of storm that instead of coming the good rains where you would plant things and harvest them, it comes with a lot of wind; all the banana trees they fall down, the houses are unroofed, so it will affect [my grandchildren] negatively. (Christine, age 49)

The second rains of 2015 were similarly late; posing challenges for families that relied on growing maize and other crops:

> Like in this season people expect the rain to rain like in August but it is just sunny so they expected to plant crops and some planted in the sunny season and the plants did not come out well. It rains just once in a while which was not the case before […] The families also lack what to eat and if you find a big family, it cannot afford to buy enough food for the family member. (Doreen, unemployed single mother, age 35)

A number of residents described how, when the rains did arrive, they did so in the form of destructive storms, wreaking havoc on crops, houses and roads. With poorly maintained drainage systems and roads, inadequate sanitation, and overcrowded ill-maintained houses, extreme weather events could have devastating impacts, particularly on poorer communities.

Accounts of changing climate in Jinja were almost invariably linked with concerns about recent transformations to government, economy, infrastructure, environment, and demography. Jinja, it was said, had once been a modern and well-maintained town, yet for some time it had been in decline, with implications for health, food security, governance, and the environment. Climate change was seen to amplify these broader changes and to exacerbate the growing vulnerability of residents. This is evident, for example, in the narrative of one middle-aged man (a local chairman) who described how his capacity to be resilient to changing weather was reduced by an unfortunate personal circumstance (an accident), worsening the already precarious situation in which he and his family now found themselves:

> When I came in 1987 the sunshine wasn't hot like this, the season was so good but these days, things have changed […] We used to have rain in February, there was a lot of rain but now it is not there. The dry season has extended more than we expected and it has affected us. When the rain is not there we don't have anything to sell, we don't grow things, each and everything has a high price. Our lifestyle has become very difficult and it's a challenge. On top of the climate change coupled with [the

motorcycle taxi] accident and yet I have a family which I have to feed, so it is very difficult for me and that's why you found me at home. The children can't have tuition because of the accident. (Peter, 51)

When asked what caused changes to the climate, a very small number of respondents blamed foreign influences (usually western astronauts going to Mars or the moon), whilst considerable numbers invoked the will of God in some form (although religious explanations were not necessarily fatalistic; see Dieter and Bergmann 2011). Whether or not respondents' responses had religious overtones, climate change was overwhelmingly believed to result from local behaviour, with deforestation across urban and rural areas typically identified as the primary culprit. From a local standpoint, therefore, climate change referred to weather changes occurring directly to Ugandans as a natural and/or spiritual consequence of human choices made there. Justine (age 56), who ran a small shop and engaged in peri-urban agriculture, for example, saw changes in the weather as simultaneously reflecting both the will of God and human choices, stressing that '[w]e are the ones becoming bad':

These days, you find that seasons keep on changing. Those days we used to plant our crops sometimes around this time, there would be not much sun like this one which is shining now. But now it's really shiny and very hot, especially at night, you can't even cover yourself. Even during the day, even if you're sitting in a place like this one, still you will feel when it's really hot. So I think there must be something wrong.

Interviewer: And do you know why it is happening? Do you know what is causing it?

Justine: I don't know. Some say that because of those factories, others say that because people have cut trees, others say because of those *buvera* [polythene bags] they throw anywhere. So I really don't know what it really is.

Interviewer: What do you think personally?

Justine: Me, ok on my side, me I think it's God, because God is the one who created this world. So he must be knowing what is taking place. Maybe that was his plan. And for me I think that the world is just growing old. It might not only be here in Jinja but even maybe in other countries. Some two days ago, I heard maybe where, in Uganda somewhere, it rained and then all houses fell down, then this lightening killed someone. So the rain was very bad […] I don't know. It is really God who knows. […] Me, I just think, things are now getting worse. Everything is becoming worse.

Interviewer: Worse in what way?

Justine: Okay the way, we people are the people who are changing the world, I think. We are the ones who are becoming bad.

When asked why people engaged in tree-cutting and other activities that were perceived to have negative climatic effects, residents rarely invoked what Rudiak-Gould (2014:366) has termed 'industrial blame'. A moral stance of industrial blame frames climate change as a crime perpetrated by one human group upon another – usually characterized as 'Western', 'capitalist', or 'industrial' – as in Crate's (2008:570) ground-breaking essay on anthropology and climate change, which indicts 'Western consumer culture' for inflicting climate change on other people innocent of creating it (see also Crate and Nuttall 2009, 2016). Rudiak-Gould (2014:366) contrasts this with a radically different moral stance that he terms 'universal blame', which frames 'climate change as humanity's self-destruction rather than the West's oppression of the rest, foolishness rather than wickedness'. A growing body of literature documents how indigenous communities have adopted rhetorics of universal blame in diverse contexts[10] (ibid.). Narratives in Jinja, while showing some evidence of rhetorics of universal blame, are more suggestive of a third position that emphasises local causality. In Jinja there was a growing perception that Ugandan people were damaging their world and causing climate change *in Uganda*: this blame and notion of climate change rarely extended to the region of East Africa, let alone sub-Saharan Africa or further afield. This reflected both limited understanding of 'foreign' contexts beyond broad understandings of 'the West' or 'Africa', and climate change as a global process. Climate change was thus certainly understood as humanity's self-destruction, but a local humanity rather than a global one.

Such blame stances were embedded in widespread narratives of how 'everything is becoming worse' (as articulated by Justine, above). In a series of community theatre workshops on 'Possible Futures', for example, participants engaged in role-play in small groups to explore what people imagined their futures might hold if present conditions continued. The scenarios they developed highlighted a litany of social problems already prevalent in Jinja, which were evoked with great frequency during discussions about climate change. Many sketches by younger women and elders presented suffering children, whereas young men tended to represent themselves as victims of economic conditions, reluctant to engage in casual, dangerous and poorly-paid labouring jobs associated with a lower class of uneducated youth, and threatened by social ills such as gambling, drugs and alcohol. Younger women expressed

concern about issues including teenage mothers unable to provide for basic needs such as food, clothes, school materials and sanitary-wear; early marriages cutting off education; and abandonment by husbands. Older men worried about alcoholism and polygamy destroying families, and anxieties about infidelity leading to men raising non-biological sons. Older women worried about abandonment by husbands, and a lack of respect and love between married couples. Across all age groups people discussed the perils of an urban cash economy. 53-year-old Irene described: 'The town had changed in a way that one can get everything they need, except that the prices of these things are very high'. When asked what impact the changing seasons would have in her grandchildren's lifetime, Phiona (age 70) replied: 'They will be affected in that everything has to be bought. It's not like long ago where you plant something and have them […] but now, we buy everything'.

The following week the groups created a time-travelling scenario, in which small teams worked together using image-theatre to imagine how family life would be fifty years (nearly a whole lifetime[11]) in the future. The teams discussed the state of the natural environment today and then projected these imaginations forward if current practices were left unchecked. With only one exception the teams imagined exclusively negative changes brought about by 'bad environmental habits', particularly deforestation and the haphazard disposal of the ubiquitous *buvera*[12]. As one woman participant exclaimed, 'In 50 years, it is so bad, it hasn't changed, we are still busy killing the environment, fighting it!' All groups painted scenarios in which the dry seasons extended into each other, people suffered under ceaseless sunshine, high temperatures and dangerous levels of dust led to exhaustion and ill health, and the elderly and very young were at high risk. All highlighted a future of shorter planting seasons, drought and desertification, crop failures and famine, shortages of charcoal and firewood, unsustainable rises in food prices, and rural areas 'sleeping hungry'. Once more, younger and older women drew attention to how children would suffer, begging for food and money. All groups imagined a critical lack of jobs in 2065. Younger women pointed to how there would be 'no happiness in the family', and older people warned of how children would forget their parents and neglect their familial obligations.

Both socioeconomic and climate changes in these discussions were, participants explained, the direct result of local activity and decisions. This was particularly evident when people discussed deforestation. Trees were central to most climate change narratives in Jinja: deforestation was perceived to equate with reduction in rain, and planting trees would not only generate rainfall but also protect houses and people from the impacts of destructive

weather. At the small scales at which everyday life in Jinja is negotiated, changes in the climate were perceived to be both caused by, and driving, the pursuit of new adaptive – and environmentally destructive – livelihood strategies. As described by one retired 59-year-old man who had observed an increase in deforestation:

> You expect that around March we shall start cultivating, it doesn't rain, or you plant and then it starts shining, you find that even in the villages people are buying food, yet those days people in the village were not buying food, they were getting food from their gardens. But you may dig a big portion, it starts shining, and the whole food [is destroyed]. So they are moving around cutting those big trees, now there will be an impact in future whereby those places become dangerous.

Discussions of deforestation were accompanied by a sense of powerlessness in the face of urban conditions, forcing Jinja's residents into livelihood practices they knew to be destructive. As one younger man explained:

> You find that since the population has increased, most people have been forced to go into these things of trying to become hazardous. They have started chopping trees in order to sell them to get an income to sustain their families […] Things have really changed in Uganda that even most of us have been forced to do things that we are not supposed to do. Things that are inhumane! (youth dialogue group)

Tree-cutting was identified by both communities and stakeholders as the central environmentally destructive practice occurring within Jinja and in surrounding rural areas, a practice that was increasing as people strove to adapt to the subsistence challenges posed by climate change. There were not many trees remaining in Jinja, and throughout fieldwork, for example, respondents would point out and remark upon the felling of individual trees across the Municipality. Residents would also refer to the practices of people outside the town, especially those living near forested areas such as the nearby Mabira forest. Deforestation was feeding both construction (fuel for brick kilns, or wood for house-building) and energy (firewood and charcoal) demands across rural and urban areas, evidencing strong interconnections between urban energy needs and rural supply chains. This in turn rendered Ugandans more vulnerable to changing weather, further fuelling destructive practices:

> It was very hard during [the past] for someone to hear that there are floods. But now, because of different situations […] every rainy season you find that there are a lot of

> floods, people die, the transport situation is high, [medical] treatment is not there, because of deforestation. People go into deforestation to cut trees to burn, to make charcoal and then sell. That sensitization [about the impact of deforestation] is there but it's on a lower level because people do not know that if I cut this tree today, I need to replace it […] In future it will cause deforestation and floods. These trees are wind-breakers so if I wake up today and cut down this tree and a heavy rain comes with a lot of wind, you can find that either these iron sheets will be knocked down just like that! (Young male, youth dialogue group)

Local awareness of the problems of deforestation was in part a result of teaching about these issues in schools, public information drives delivered through radio and as part of efforts of local Municipal environmental officers, and the efforts of environmental activists who condemned both tree-cutting and the contamination of soils by poor disposal of plastic bags, blaming such activities for their destruction of an environment central to Ugandan livelihoods. However, as Kuhar et al. (2010:407) and others report, short-term increases in pro-environmental knowledge and intention to engage in conservation activities can wane in the absence of reinforcing experiences (Adelman et al. 2000; Dierking et al. 2004; Dotzour et al. 2002). In Jinja, whilst some respondents expressed guilt about their daily use of charcoal, citing a lack of choice in fuel due to poor and/or prohibitively expensive electricity supply, they only infrequently made a clear connection between their *urban* energy needs and fuel consumption and a wider problem of *rural* deforestation and the nationwide supply of charcoal from rural to urban areas. Sustained creative and 'pro-poor' activities are crucial in the development of urban environmental management and governance in resource-poor settings like Jinja. Reporting on urban green infrastructure projects in Mombasa, Mohamed (2008) and Kithiia and Lyth (2011) highlight the critical need for both political will and local support in recognizing the full potential of urban green spaces (for example, tree planting and mangrove regeneration) in promoting adaptive capacity to climate change risks and wider socio-ecological and economic benefits.

Taken together, the evidence from interviews, generational dialogue groups and theatre workshops highlight how changes in the climate are but one strand of a tapestry of urban stresses, vulnerabilities and uncertainties. The adaptive capacity of an urban population to these stressors is shaped by underlying structures such as poverty levels, asset entitlements and willingness to innovate (Jones and Boyd 2011: 1263), as well as so-called adaptation deficits, such as the absence of basic infrastructure systems and service provision, functioning

governance structures or political stability (Satterthwaite 2011). As Bulkeley and Tuts (2013: 652) argue, 'vulnerability to climate change cannot be divorced from existing social, economic and environmental challenges facing cities', as vulnerability and the capacity to adapt are produced when climate risks coalesce 'with other stresses, such as scarcity of water or governance structures that are inadequate even in the absence of climate change' (Wilbanks et al. 2007: 373).

CLIMATE CHANGE AND (UN)IMAGINED FUTURES

Respondents in Jinja frequently identified a clear relationship between pervasive uncertainty, feelings of powerlessness, and people 'not thinking about the future'. As articulated by one younger respondent, 'this generation[13], it is not looking further than just themselves' (Vincent, age 23). Johnson-Hanks (2005) argues that across much of sub-Saharan Africa, political and economic crises have often served to sever firm links between intention and its fulfilment, making it risky to place one's hopes on a predictable mid-range future. Mbembe (2002: 271) writes of a future horizon 'colonized by the immediate present and by prosaic short-term calculations' in which life becomes 'a game of chance, a lottery', and Ferguson (2006: 186) reflects on the decomposition of the promise of modernity in a sub-Saharan Africa where 'developmentalist patience has little to recommend it' (see also Ferguson 1999; Jackson 2005).

Local residents argued that younger generations were enslaved by Jinja's cash-based economy. The rising significance of money in an increasingly liberalised and 'capitalist' local economy forced respondents into livelihood changes often involving unsustainable practices, curtailing their ability to both plan for and imagine a future. Many people, it was argued, could not and would not imagine their futures, given their preoccupation with the challenges of the present, engendering a downward spiral of both individual wellbeing and social moralities. Many studies have demonstrated how poverty can, as Banks (2015:10) argues, 'lead individuals to believe that efforts and investments cannot "make a difference", thereby incentivising them to limit investment and effort' (Bannerjee and Duflo 2011; Bernard et al 2008; Copestake and Camfield 2010; Ibrahim 2011; Ray 2006). A focus on the everyday, rather than the future, in this way can have dire consequences for both resilience and individuals' perception of their capacity to fight against poverty (Appadurai 2004; Dalton et al 2015; Duflo 2013; Klein 2014; Henley 2010; Narayan et al 2009; Pieterse 2006). New forms of 'short-sightedness' (Guyer 2007: 409-10) in livelihood choices create the conditions of possibility for knowingly perpetrating environmentally damaging practices and (it was

perceived) catalysing further climatic changes, which have both immediate and long-term consequences for social-ecological relations. One middle-aged respondent described how people of his generation were 'gamblers, they are just gambling with life'. When asked if they were thinking of their responsibilities to future generations:

> Whether you think of it, but you don't have the guts to meet it. So what do you do? You just gamble and say that when I get 1,000 [Shillings] today, I'll eat that. The future will look after itself, that's where things are. (Arnold, age 48)

'This gambling life' was a frequent refrain of young men, articulating their sense of a lack of agency in the face of daily disempowering circumstances.

Samson (age 26), who ran a voluntary youth organisation, training 10-16 year-olds in breakdance in one of the poorer neighbourhoods of Jinja, explained of the vulnerable youths with whom he worked:

> Like when you look at these kids we bring in the organisation, we teach them, but they have not gone to school and they have grown up and they are living in a small house with poor conditions. So he feels all he needs is to survive today, like think of what to eat and drink today. They feel they are failures already and they don't think about the future, they think they are already in their future […] Yes they are already grownups, they feel like when I plant a tree it will grow in five years and I will be dead, they will not be there to see the future.

With high morbidity and mortality levels, weak healthcare, and increasing HIV prevalence, 'living with lost hope' was generated when, as a Community Development Officer explained, 'they think they will never become old. They think they are going to die when they are still young'. One older woman reflected on the environmental impact of this trend in her neighbourhood:

> We want the day-to-day life, cutting down the mango trees, the avocado trees, the jackfruit trees. This is done because of poverty. That's why people are cutting down trees. But they don't know what will happen after. (Jackie, age 60)

A 42-year-old man voiced a similar stance: 'they are not minding on any secondary issues like now environment, what, security. No, they don't mind'. Urban life forced people to focus

on personal and family sustainability rather than wider social and environmental sustainability. As another respondent described:

> People don't care about what is happening and what is happening in their country. They just construct, they just work for the day-to-day money. People are not planning for the future or their family […] people are not given lessons about how to plan, we have not been taught, we just say we love our family, people are just looking for money and caring about their stomachs […] We need to teach the young people to think about the whole country, then we can't just think about ourselves. (Jackson, age 45)

Exerting pressure not just on municipalities such as Jinja, but also on resources such as land and forests, was a rapidly growing national population. Provisional census results from 2014 had been announced shortly after fieldwork commenced in Jinja. The population was counted at 34.6 million people, representing an increase of 10.4 million from the 2002 census (UBOS 2016: 8). A number of respondents voiced their concern at such a rapid rise. The increasing demand this was exerting on resources was a key concern, as an Environment Officer in Jinja Municipal Council argued: 'Now in our parent's generations […] the population was low, the resources were abundant and all that. So now population has shot up and it is increasing at a scary rate'. As one older man explained regarding perceived changes between generations of Ugandans:

> The first generation they were few and there was no much need because they were just using these small, small branches, not cutting the whole tree down so they were preserving the environment for the future, but now they have to use whatever is there. [We] are sensitized, they know that if I do this and this I will be protecting the environment properly, but you have nothing to do, you have to cut that tree because you will get money for us, you cut that tree because you want to cultivate within that area, so this generation [we] know, *but they have nothing to do*. (Benjamin, age 59, emphasis added)

Within African studies, there is a growing recognition of uncertainty as potentially 'positive, fruitful, and productive', to the extent that it becomes a 'social resource' to be used 'to negotiate insecurity, conduct and create relationships, and act as a source for imagining the future with the hopes and fears this entails' (Cooper and Pratten 2015: 2). Yet in Jinja, the entanglement of uncertainties generated by climate, socio-economic, and moral changes

contributed to an *un*imagining of the future. As the final sections discuss, people were perceived to be abandoning traditional reciprocities and obligations, subverting traditional moral relationships, and thereby further entrenching poverty.

NARRATIVES OF GENERATIONAL RESPONSIBILITY

Rising inequality in Museveni's generation was perceived to be entrenching 'short-sightedness', with distinct implications for future generations who would inherit little from their parents and elders, contravening the widely-held belief in parents' responsibility to provide a 'foundation' for their future generations. Across the continent urbanisation and accompanying economic crises are slowly eroding gerontocratic intergenerational bargains in which established rules on the transfer of resources and responsibilities are breaking down (Banks 2015; Burgess and Burton 2010; Collard 2000; Durham 2000; Frederiksen and Munive 2010). A university student studying in Jinja lamented how 'people preserve only for themselves. Meaning that they are looking at their family. So we are heading to where we shall have a few people having the resources at their disposal and then others will not have, totally'. He described a situation in which:

> People are looking at how best they can be satisfied in the current situation than how best they can preserve for the future […] So, Ugandans don't have a saving culture, and they don't look at who we are going to leave […] And really that is a very big problem in Uganda because people are looking at only the present situation [rather] than the future generation. (Stephen, age 24)

Climate change narratives are grounded in, and reveal the vulnerabilities of, a 'cognitive and cultural landscape' (Roncoli 2006) comprising built, natural and sociocultural environments. As Crate (2011: 180) argues, how communities adapt to climate variation and change is not a simple function of technical solutions. On the contrary, human adaptation is more often reliant upon complex webs of reciprocity and obligation, with social capital often proving to be the most important resource in times of stress (Crane et al. 2010; Roncoli et al. 2009). The demands of urban modernity (including the increasing significance of money) and decline in livelihood opportunities were believed to have disrupted solidarities that once acted as social protection mechanisms. In this sense, the challenges of climate change were inseparable from perceived changes in social moralities. For example, Mukama, a 61-year-old fisherman, spoke of how climate change affected his ability to grow crops, yet his ability to earn a livelihood was directly compromised by social changes:

> As you can see the change of weather, it has affected our fishing […] The change of climate and weather is not the one which has affected my work, it's the people with bad hearts that are fishing badly. They're using bad practices where they fish those young fish which would have been left for some time […] We've organized ourselves, we chose leaders who would look after those bad practices, but as time goes on they are bribed and they go to the wrong side. Even the forces like the police […] when you've been using wrong nets they [take them] from you, they give them to another person who goes and does the same thing.

He directed blame at a social order unravelling amidst climate change, evident in his wider story about the increase of theft, a breakdown in environmental responsibility, and endemic corruption in the present generation. Ruptures in the social fabric posed critical threats to an individual's survival, as their social safety net slowly deteriorated in the disordering of multiple worlds. As 48-year-old Edward, a cobbler, noted with concern: 'the generations comes will be worse, worser than this one'. This was exacerbated by people becoming 'harsh': 'these neighbours are no longer helping!' His friend Joseph (age 51), a peri-urban farmer, agreed, emphasising how people increasingly focused only on the well-being of their own families: 'you have your family, I have my family, everybody looks on the family. One door, one door, one door, to one door… About 80% we are suffering, 20% they are good'.

Societal narratives of time, Wallis (1970: 103) argues, 'motivate and interpret action, [and thus] mesh not only with present society but also with society as it existed in the past… and as it will be in the presumed future'. As the future is unimagined by current circumstances, a key moral frame in people's narratives of climate and environmental change was a discursive construct of past generations. Climate change narratives linked past, present and future generations; holding up past generations in a protest against current economic and climatic conditions in Uganda fuelled by the present generation, denying opportunities to future generations. Past generations were spoken of as having lived in harmonious and sustainable ways[14], as respondents invoked a nostalgic respect for previous generations' care of, and respect for, the environment. Respondents emphasised very real changes including lower levels of competition for land and resources, which enabled past generations to achieve subsistence affluence, planning for, acquiring, improving, and transferring environmental assets (particularly land) to the next generations of their family and clan. A 36-year-old man explained how: 'African youth used to live in harmony with the environment', whilst a

middle-aged man described how: 'the environment was part of us, our culture, but now our culture of environmental conservation is being eroded'. Amaya (age 28) explained:

> In my family the generation that has really considered the environment is that of my *Jjaja's* [Grandmother] because for them they always struggle to see that something they found there is still there. Take an example of the Mabira forest; it was going to be destroyed so that Madhvani might plant sugar cane but it is the old people who woke up and said, "no you are not destroying this forest, we found it there and we want other generations to come and find it there and also study about it" […] In this generation people are not patient so they always want short-term things and there is too much corruption in this generation.

In this form of narration, a community perceived to have once been able to live in harmony with the environment — and thus enjoying predictable and sustainable rain patterns — has now been replaced by a new generation. The current older generation's ecological knowledge and steadfast traditionalism demonstrated by communal, subsistence-based, and sustainable ways of life, were now being marginalised by the current generation, which had been corrupted by what was alternately (or sometimes simultaneously) represented as selfish individualism or desperation to survive in a new context of enduring poverty and reduced opportunities. New economic practices for generating money, it was argued, were both causing climate change (such as through tree-cutting) and violating past generations' standards of behaviour and environmental responsibilities. Here, climate change narratives intersect with familiar narratives of moral decay in the African city (Porter et al. 2010; Sommers 2010). The changed climate was seen to provide concrete evidence of this more general moral decline. As 32-year-old Rose explained: 'my mother's generation is the one which has been thinking about the environment and conserving it, but our generation, we are the people who are spoiling everything [...] I think it is poverty'. One mother of two children, who made and sold various crafts, explained the changes she had observed amongst a present generation no longer involved in future-oriented thinking:

> People today, they love a lot of money. This generation doesn't have the patience to leave the tree standing, but our parents, for them they were respecting their [grandparents'] things, like they knew that if you plant a tree, you have like a fruit tree you are supposed to have a fruit but not cutting it down […] In my village, the problem came about when people found out that you can get money for charcoal […]

> the generation now don't prepare for future generations, they look at how so and so built a storied house, they want it, but they don't prepare for their own children. (Betty, age 28)

Similarly, Sofia, a 40-year-old woman working as a roadside vendor selling fried cassava explained how: 'long ago the climate was good but these days the climate is very very bad'. When asked how the climate was bad she invoked the past:

> [B]y that time long ago everyone was having a good heart, there were no thieves, everything was very cheap but now everything is very, very expensive and people didn't have bad hearts but now everyone is really having a bad heart.

An older woman interviewed amongst one of the more affluent families in Jinja articulated this same concern with eroding social cohesion, highlighting the implications this has for survival in the face of climate change:

> You can see people are killing one another and you can see there is no friendship between you now. I think our parents' generation was very good because me I used to see the neighbours, they were all together, loving one another which is not today because you can see a neighbour can, like these, I don't know my neighbours here […] They are new just five years back but I don't know them, I don't know the owner. But before that, because in the village when it is a season of harvesting you can see someone saying 'take the maize to neighbour, take potatoes to neighbour' like that, we haven't seen that, did you see that? When you get something good, you send to your neighbour, which is not there today. (Diana, age 80)

The notion of patriotism was evoked as a lost quality, and one that was essential to environmental protection and forestalling climate change. One younger man described the rampant deforestation generated by demand for fuel from many of the factories opening around Jinja: 'this kind of life has come because we have no love for others and for the nation' (youth dialogue group). He appealed for his population to feel 'the love of our nation', which would not only bring people together to stop 'destructing the nature', but also tackle 'the major issue [of] having corrupted officials'. The issue of climate change provoked emotive responses from individuals who perceived it as both a cause and consequence of a disintegrating social fabric:

> There is now increased lightning, it is killing people. So much has changed that even people have changed themselves and have no mercy on each other. People have a very hard heart. Maybe it is the end of the world. God says when you see the changes, this sign, that sign, it is the end of the world. (Asfah, age 40)

CONCLUSION

For Mary Douglas (1992), risk and associated discourses of culpability are socially constructed and fundamentally political in nature (see also Douglas and Wildavsky 1982). Rudiak-Gould (2014: 372) builds on this basic theory, arguing that 'blame is part of the way that societies, factions, and individuals utilise threats to shore up cosmological and political commitments and appropriate new events in terms of old categories'. Here blame can 'impose discipline on unruly events by creating understandable causal relationships, identifying agents of harmful behaviour, and finding solutions that convey a sense of security and moral order' (Jasanoff 2005: 24). In Jinja, however, narratives of climate change attributed blame while also showing evidence of profound insecurities about a fraying moral order. Material conditions and declining livelihood opportunities were perceived to drive people into unsustainable practices, yet these practices were equally understood to be driven by people disregarding the 'old categories' of a prior 'traditional' social order. As such, local narratives of changing climate and environments in Jinja evince both victimisation and agency (cf. Penz 2010: 152-3).

Understanding the limits and opportunities for climate mitigation and adaptation involves examining both conflicts between visions of development and the possibilities these generate for transforming development paths, governance structures and coping strategies (Manuel-Navarette et al. 2011: 250; Bulkeley and Tuts 2013: 655). Bravo (2009: 262-3) discusses the similarity between the oversimplified crisis narratives that pervade both development and climate change rhetoric, drawing attention to how they respectively 'fail to speak to the world's most pressing political questions of inequality'. To alter and disrupt present development paths in Jinja entails engaging with how urban communities make sense of climate change and perceive their own agency in relation to it and wider urban livelihood vulnerabilities. In a context where many urban residents see themselves as responsible for current, local climate-related challenges (unlike many contexts in the global North), possibilities for action are opened up in their narratives, providing opportunities to work alongside people to improve local environments by directly tackling the conflicts they decry and addressing the 'complex power relations that define their possibilities and limits' (Bravo

2009: 263). The potential of such an approach was evident in the participatory community theatre work that formed part of this research, as a number of participants proved eager to put into action their debates around social and environmental injustices, and have since enthusiastically developed local interventions related to tree-planting, alternatives to charcoal, gender inequality, land dispossession, and political corruption, amongst other issues (see McQuaid and Plastow 2017). Successful strategies will need to reach beyond technically-driven climate change mitigation and adaptation. Rather, an understanding of local narratives challenges researchers, practitioners and policy-makers to tackle underlying structures that increase livelihood vulnerability to changing climate. Achieving this will require promoting civic participation in developing interventions that avoid the pitfalls of climate reductionism.

ENDNOTES

[1] See: Bulkeley and Tuts 2013; Gasper et al 2011; Lwasa et al. 2014; Mabasi 2009; Matthias and Coelho 2007; Winchester and Szalachman 2009.

[2] See Adger et al 2009; De Sherbinin et al. 2007; Douglas et al. 2008; McBean and Ajibade 2009; Silver et al. 2013; Tanner et al. 2009; Wilbanks et al. 2007.

[3] This is partially explained by an increase in the number of urban centres from the previous census and expansion in geographical boundaries.

[4] In some parts of the town, it is common for over 70 people to share one crumbling pit latrine.

[5] The population increased from 65,000 in 1991, to 71,000 in 2002, and 76,000 by 2014 (UBOS, 2016), a net rate of in-migration and urban growth insufficiently in excess of the national population growth to represent a rapid rate of 'urbanisation'. Jinja Municipal Council reports such a significant daily in-flow of people into Jinja to enlarge this population to 100,000-400,000, which while more than certainly is an inflated figure, reveals the notorious difficulty in securing reliable statistics in this region, with much local data reported by authorities with a high stake in inflating their own context, and discrepancies between figures in national census reports over time.

[6] 53% of the population are under 15 years-of-age (UBOS 2016).

[7] Each person self-defined which generational group they thought they belonged to. The concept of 'generation' as deployed within Jinja could have multiple meanings. In Uganda generations are named after the political regime in power at the time. *Mulembe* is the Luganda term for generation, also referring to a political regime. For example, the current generation are named *omulembe gwa Museveni* – the 'generation of Museveni', which concurrently means 'the regime of Museveni'.

[8] See Authors (forthcoming, 2017) for a full discussion of the participatory community theatre process.

[9] Whilst a number of respondents in the Central Division of Jinja, and many younger people generally, spoke English, many older people, rural-urban migrants, and those living in the

informal settlements of Walukuba/Masese Division, did not. In these cases we engaged the services of an experienced translator from Makerere University. Luganda and Lusoga are the two most commonly spoken languages. In exceptional circumstances when a member of the older generation spoke a language unknown to the translator, a member of their family would provide assistance. Borchgrevink (2003) provides an instructive account of the challenges of using interpretation in ethnographic work.

[10] Including indigenous Totonacs of Mexico (Smith 2007), rural Africans (Eguavoen 2013; Patt and Schröter 2007; Shaffer and Naiene 2011), some Tibetans (Byg and Salick 2009), and the Marshallese of eastern Micronesia (Rudiak-Gould 2014:366)

[11] Life expectancy in Uganda is currently circa 59 years.

[12] Small polythene bags in which food items and small portions of water and juice are sold.

[13] When individuals refer to the problems of a particular 'generation', this was often intended to denote those alive at the present moment (see note above) as opposed to people of any particular age, although at other times people spoke specifically of 'younger' and 'older' generations in society or of parental and grandparental generations (see Vanderbeck and Worth 2015 on usages of the term 'generation' colloquially and in the social sciences).

[14] Although this 'past' was often loosely defined, with younger people often attributing it to their grandparents' generation, whereas these older people often pointed further back.

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