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Highlights

- Measuring resilience reifies assumptions by relying on proxy indicators
- Assessment needs methods that place epistemic diversity at the centre
- We rank resilience based on subjective assessment of distance to threshold
- Participatory methods allow high and low resilience groups to narrate experiences
- Resilience root causes and distribution revealed through recognition justice focus

Opening space for equity and justice in resilience: a subjective approach to household resilience assessment

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Abstract

While resilience has grown to become a well-established goal of policy and practice, assessing resilience remains an outstanding problem. To date, measurement has largely relied on the identification of proxy indicators, inevitably shaping what is measured in ways that reflect underlying assumptions, generalisations and approximations, and raising the question of whose values are being embedded into resilience. These concerns reflect recent interest in the role of recognition justice in resilience, and in particular how marginalisation from meaning-making processes creates the conditions for the inequitable distribution of outcomes in practice. Here, we propose a two stage, subjective approach to resilience assessment, starting with rapid household interviews that invite participants to assess the likely impact of multiple shock and stressor storylines. In a second step, participatory qualitative methods are employed to support inductive investigation of resilience focused on the factors that differentiate those reporting relatively high and low resilience. We illustrate this using fieldwork data from 572 households in Bangladesh. This subjective approach enables households to engage in the production of knowledge about their resilience, revealing two core features of situated heterogeneity: the forms of difference, and the underlying causes. Underlying causes arise from interactions and feedbacks between social, political, economic and institutional conditions that are highly context specific, while significant forms of difference include intra-community and scalar heterogeneity; vulnerability to specific or generalised shocks; and the role of undesirable practices in securing resilience. The results underline the need for resilience to be assessed in relation to local understandings of precarity, and through the expression of senses of justice that inform local conceptions of wellbeing. This means moving beyond positivist approaches and placing epistemic diversity at the centre of resilience assessment, enabling the production of a situated understanding of how and why resilience is differentiated, and offering an analytical starting point from which policy and practice can drive towards equitable resilience.

1.0 Introduction

Over the last two decades, increasing the resilience of human and environmental systems has risen to become a central goal of policy and practice across the fields of development, disaster risk reduction and climate change adaptation (Béné et al., 2017; Brown, 2014; Bruijn et al., 2017; Ensor et al., 2016; Thomalla et al., 2018). Yet, while this rise has encompassed multiple different conceptual frameworks and led to a proliferation of practice guides, the fundamental problem of identifying, measuring and monitoring resilience 'on the ground' remains outstanding (Cumming et al., 2005; Jones and Tanner, 2016; Prior and Hagmann, 2013).

The majority of the empirical literature to date has focused on the identification and measurement of common resilience characteristics (Bahadur et al., 2013; Quinlan et al., 2016). Yet, at the same time, a growing body of critical literature has focused attention on equity and justice in resilience, pointing to how experiences of resilience are distributed by a complex interplay of local-to-global social, cultural, economic and political factors, rendering resilience highly contextualised or 'situated' (Béné et al., 2015; Cote and Nightingale, 2012; Matin et al., 2018; Chu and Michael, 2019). Here, we suggest an alternative analytical starting point for the empirical study of resilience. Rather than attempting to abstract characteristics from across multiple contexts, we focus on how households can rapidly and subjectively assess their own resilience, revealing patterns of differentiation across and between populations and supporting their role in the assessment of the factors that distinguish household experiences.

A review of empirical literature concerned with resilience in linked human and environmental systems reveals a large body of work looking to uncover critical components (for example, Becker et al., 2019; Béné, 2013; Berkes and Ross, 2013; Kruse et al., 2019; Plummer, 2009) and, less frequently, looking to measure resilience in particular settings (for example, Becker et al., 2019; Béné, 2013; Birkmann, 2013; Cutter et al., 2010). Underlying frameworks play a central role, identifying components and associated structural relations that reflect assumptions about the focus and

53 dynamics of resilience (for a useful summary, see the tables summarising approaches to assessing
54 resilience in Quinlan et al., 2016; Sina et al., 2019). Cutter et al. (2010), for example, make use of the
55 'disaster resilience of place' (DROP) model as the conceptual basis for a disaster resilience index. This
56 underlying framework is deployed to link "proxies for resilience" that can be measured and are
57 collected together in categories derived from the literature (Cutter et al. 2010, p6). Alternative
58 conceptual framings have responded to widening research on the factors at play in determining
59 resilience, taking into account, for example, material, relational, and subjective dimensions (Becker et
60 al., 2019; Berkes and Ross, 2013; Kruse et al., 2019; Plummer, 2009), including culture, knowledge, and
61 power (Plummer 2009; Kruse et al 2019).
62
63 The choices embedded in these conceptual frameworks and proxy indicators inevitably shape what is
64 measured, reflecting underlying assumptions, generalisations and approximations, and making the
65 selection of a resilience framework a contentious issue (Jones and Tanner, 2016; Schipper and
66 Langston, 2015; Walsh-Dilley and Wolford, 2015). It also generates significant practical and ethical
67 drawbacks that are too easily overlooked. When on-the-ground efforts to 'build' or 'support'
68 resilience are predicated on frameworks and attend to indicators, changes in proxy variables are
69 taken to be changes in resilience (Béné, 2013). A resilience intervention is judged a success when there
70 is a change in chosen indicators, reflecting a predetermined commitment to, for example, livelihood
71 diversification or expanded social networks as positive outcomes. However wide the net is cast over
72 potential indicators, the difficulty lies in asking: 'did the indicators change?' rather than: 'did
73 experiences of resilience change?' Underlying this practical problem is a more challenging terrain of
74 knowledge politics. Whose interests and values are being embedded into resilience interventions
75 through the choice of frameworks and indicators? As Walsh-Dilley and Wolford (2015) note,
76 rendering resilience legible to development practitioners, policy makers and planners allows it to be
77 operationalised and measured through precise definition and a clear statement of indicators. While
78 this aligns with a trend towards toolkits and standardisation across the development industry (Jones

2019), it inevitably privileges dominant voices and "closes our eyes to the multiplicity, contingency and context of building resilient lives on the ground, necessarily elevating the interests and knowledges of some over others" (Walsh-Dilley and Wolford, 2015 p.176). Measurement is, therefore, imbued with questions of social justice even before it becomes a practical challenge for resilience policy and interventions.

Within environmental justice, the pillars of recognition, distributive and participatory justice have been applied to shed light on the uneven distribution of risks and benefits across diverse settings, with recognition justice directing attention to the identities, values and interests that are accounted for in decision making (Fraser, 2000; Schlosberg, 2004; Walker and Day, 2012). Misrecognition devalues individuals or groups in social or institutional processes, leading to cultural domination, invisibility, or public stereotyping (Fraser 1997). In what has traditionally been a separate field, political ecology has leveraged discourse, power and structural relations to produce numerous studies that demonstrate the degree of difference between dominant outsider, expert narratives and the lived experience of poor people in multiple contexts (Leach and Mearns, 1996; Adger et al. 2001; Johnson et al. 2015). More recently, the growing field of critical environmental justice has sought to exploit synergies between political ecology and environmental justice, with recognition at the centre (Massarella et al. 2020; Svarstad and Benjaminsen 2020; Pellow 2016). In this critical turn, the dominance of forms of knowledge is problematised, and how issues and concepts come to be defined, delimited and interpreted is questioned. This expands recognition into analysis of the marginalisation that occurs through meaning-making processes, in which the significance of voice depends on "the hearer's capacity and willingness to understand and respond to the validity of the claims raised" (Temper, 2018 p6). Questions of epistemic justice - whether or not a social group's experience, understanding and valuation of their context is appreciated as legitimate knowledge – have thus been drawn to the centre of recognition (Fricker 2007; McConkey 2004; Massarella et al. 2020; Svarstad and

104 Benjaminsen 2020), including in recent studies of resilience (Grove et al. 2020; Matin 2018; Chu and
105 Michael 2019).
106
107 Identifying and measuring resilience is thus part of a wider, contentious history of how – and whose
108 – knowledge is reproduced through development practice (Icaza and Vázquez 2013; Mikulewicz,
109 2019). As such, addressing recognition can be part of a wider effort to decolonise knowledge
110 production (Svarstad and Benjaminsen, 2020). As Walsh-Dilley and Wolford (2015 p176) note, taking
111 the epistemic challenge of resilience seriously means exploring "what would happen if the 'objects of
112 development' were asked to define resilience and to explain what resilience might mean in their own
113 lives and locations". Here, we suggest that steps can be taken towards recognition justice by
114 prioritising respondents' own assessment of their ability to live with shocks and stressors
115 (Mikulewicz, 2019). Our interest is thus in subjective resilience, in the sense of allowing people's
116 "cognitive and affective valuation of their own capacity to anticipate, buffer and adapt their
117 livelihoods to disturbance and change" (Jones and Tanner 2016, p232). Taking this approach moves
118 away from imposed measures of resilience, accepting instead that people have a legitimate
119 understanding of their own circumstances, experiences, capacities and capabilities, and enabling
120 measurement to incorporate perceptions of social norms, risks, and opportunities and constraints on
121 action (Tebboth et al., 2019). While we share an interest in focusing on subjective resilience with
122 recent authors (Jones and Tanner 2016; see also Nguyen and James, 2013; Tebboth et al. 2019), we
123 depart from current literature in that, rather than relying on an underlying resilience framework to
124 select the focus of survey questions, we invite participants to consider multiple shock and stressor
125 storylines and assess their ability to cope and/ or recover in relation to each. This enables an
126 empirically-grounded understanding of resilience itself to become the object of inquiry in a
127 subsequent step that explores meanings and underlying drivers of resilience through qualitative
128 exploration. This allows participants to narrate and analyse their own experiences of living with

129 socio-ecological shocks and stressors, rather than potentially distorting them through the lens of a
130 particular framework (Walsh-Dilley and Wolford, 2015; Svarstad and Benjaminsen 2020).
131
132 While avoiding the use of frameworks to derive indicators out of context, we still need to locate our
133 study of resilience within a diversity of different literatures (Brown, 2014). Following a broader trend
134 in the social sciences, we ground our approach in social-ecological systems (SES) (Carpenter et al.,
135 2001; Walker et al., 2006), recognising the fit between SES and questions of development, climate
136 change adaptation and disaster risk management (Tanner et al., 2015). In this view, resilience is
137 understood as the magnitude of disturbance that can be applied before a system is unable to recover
138 its earlier pattern of behaviour. When a social-ecological system has low resilience, even a small event
139 can undermine its persistence (Folke, 2003; Walker et al., 2004). Change, when it does occur, is
140 typically nonlinear, and comes about when thresholds are crossed, leading to a transformation in the
141 system (Folke et al., 2010). Focusing on the 'social', many authors draw attention to the significance of
142 individual agency and collective action in resilience (e.g. Adger, 2003; Brown, 2014; Brown and
143 Westaway, 2011; Maclean et al., 2016). The capacity for human interventions to alter resilience
144 motivates the search for actions that shift thresholds, the crossing of which might undermine "the
145 goods and services that support our quality of life" (Walker et al., 2006), p37). Recognition of this
146 central role for thresholds in SES underpins our study, and provides us with an analytical starting
147 point for resilience assessment that is independent of hypothesised underlying factors.
148
149 In the following, we propose a novel method for measuring householders' perception of their
150 distance to thresholds found within their SES. Our motivation is two-fold. First, we anticipate that
151 taking this approach will allow those concerned with policy or practice interventions to undertake an
152 assessment of whether actions taken to address the components or indicators of resilience identified
153 in the literature had effected a change in (subjective) resilience. Second, and the focus of the example
154 in this paper, is to enable inductive, contextualised and situated exploration of determinants of

155 resilience through subsequent qualitative methods focused on the factors that differentiate those who
156 perceive themselves to have relatively high resilience, from those reporting relatively low resilience.
157 Importantly, our interest is not in quantifying resilience as such, but in enabling relative resilience to
158 be measured in a given cohort of respondents; that is, to produce an index that enables resilience
159 ranking. We view this to be particularly important given the increasing critical attention on the
160 potential for resilience to advance inequitable development, overlooking the multi-scale, deep-rooted
161 and historically informed social, cultural and political factors that inequitably distribute risks and
162 benefits between system actors (Carr, 2019; Cote and Nightingale, 2012; Fainstein, 2015; Hayward,
163 2013; MacKinnon and Derickson, 2013; Matin et al., 2018), and the associated "multiplicity,
164 contingency and context of building resilient lives on the ground" (Walsh-Dilley and Wolford, 2015
165 p,176). Social, cultural, and power relations shape how local risks are understood, prioritised, and
166 managed (Granderson, 2014; Jones and Boyd, 2011; Nagoda and Nightingale, 2017; Yates, 2012) while
167 networks of organisations, institutions and narratives, politics, and power shape access to and control
168 over resources and frame decision making (Artur and Hilhorst, 2012; Borie et al., 2019; Carr, 2019;
169 Ensor et al., 2015; Walsh-Dilley et al., 2016). A situated understanding of how and why resilience is
170 differentiated within a given population can direct policy attention and practical actions towards
171 these root causes, driving towards equitable resilience (Matin et al. 2018). As such, our work
172 contributes to middle range theorising of resilience (Matin et al. 2018): the integration of recognition
173 into assessment embeds epistemic diversity into resilience, enabling it to reflect forms and causes of
174 difference. This in turn makes our contribution methodological as well as analytical, but not at the
175 level of a large scale unifying "grand theory" (Betz, 2016). Rather, by moving beyond context specific
176 observation and towards an approach that is repeatable, transferable and testable, our attention to the
177 middle range is better able to serve the interests of development and disaster risk research, policy and
178 practice stakeholders, who engage with the world through the lens of particular problems in
179 particular contexts (Kang 2014).
180

In the next section, we introduce the method for resilience ranking, comprising a household survey and quantitative analysis. To demonstrate the veracity of our approach, we present results from fieldwork undertaken in Bangladesh from July to November 2017 during which the survey was administered to 572 households across six localities (*paras*) in three villages sites. The survey was followed up by participatory qualitative investigation that explores the context and histories of households in depth. Together, these quantitative and qualitative data demonstrate the efficacy of our approach, revealing how environmental and socio-economic causal factors interact to distribute resilience unevenly within and between communities and, thus, the significance of predicating resilience assessment on a situated study capable of addressing the epistemic challenge of recognition justice.

2.0 Methods

In this section we set out a novel method for resilience ranking of households based on a survey questionnaire. In our fieldwork, the survey was followed by qualitative inquiry to investigate the factors differentiating those with self-reported lower and higher resilience, as set out in section 2.2 below. A summary of the case study locations is provided in section 2.3.

2.1 Resilience Ranking

The resilience ranking method builds on Walker et al.'s social-ecological understanding of resilience, and looks to measure the distance to a threshold beyond which recovery is impossible. The method relies on developing different hypothetical storylines that describe disturbances that respondents would be familiar with, covering natural hazard impacts (in our case, flooding, erosion, drought), and development issues (reduction of development aid, and fluctuations in the markets). A respondent is understood to be resilient if they are able to recover from the disturbance; their resilience is overcome if they cannot recover. The storylines are presented as scenarios, each scenario representing a different level of perturbation. For our fieldwork, the storylines and scenarios were developed based

on the second and third authors' expert knowledge of the context, and the relevance, significance and scaling of the disturbances were verified in discussion with local research assistants with knowledge of each village context (Table 1).

For each scenario, a household representative is asked to assess *how likely it is that the scenario would produce a setback that their household would find it very difficult to recover from*. As Table 1 sets out for the case study locations in Bangladesh, this self-assessment is undertaken for each storyline in relation to a: a) relatively small disturbance; b) moderate disturbance; and c) more significant disturbance. Each storyline is thus explored in three scenarios, in which the magnitude of the disturbance increases in parts *a*, *b*, and *c*, making a total of 15 questions to each household. The questions invite the participant to express the conditions under which they 'cross a threshold' from being able to cope and recover, to being unable to cope. This provides an empirical subjective approach to Walker et al.'s (2006) understanding of social-ecological resilience, as an expression of moving from coping to not coping suggests moving into a regime that is highly undesirable from a human perspective. As a subjective judgement, this may comprise, for example, the participant's assessment of the effects of changes in ecosystem services, economics and/or social conditions. Note that, while the analytical focus on thresholds incorporates the ability to resist variability or change (that is, to not experience some changes as a shock or stressor; Béné and Doyen, 2018), the use of scenarios invites respondents to consider being hit by a shock and recovering as a phenomenological event. As such, it is a limitation of a subjective approach that it cannot fully account for all aspects of resistance. Each scenario has been selected to have relevance and familiarity to those living in the case study locations. The method thus relies on the respondent's understanding of combined social, environmental and/or economic effects of each scenario, their capacity and willingness to adjust or adapt, and the impact of this on their household.

Disturbance storyline	**Scenario a: Small disturbance**	**Scenario b: Moderate disturbance**	**Scenario c: Significant disturbance**
1) Flooding	The village has temporarily lost 10% of its lowest-lying agricultural land to a flood.	The village has lost 25% of its lowest-lying agricultural land and some buildings are flooded.	The village has lost 50% of its lowest-lying agricultural land and some buildings and houses are flooded.
2) Erosion/landslide	The village has permanently lost 5% of its arable land either to erosion or to a landslide (as appropriate).	The village has permanently lost 10% of its arable land either to erosion or to a landslide and some buildings have also been lost.	The village has permanently lost 25% of its agricultural land, buildings have been lost, and houses have been affected by the landslide/erosion.
3) Drought	The village is suffering a month-long drought which reduces its total water supply by 10%.	The village is suffering a month-long drought which reduces its water supply by 25%.	The village is suffering a month-long drought which reduces its water supply by 50%.
4) Reduction of development aid (via NGOs/CBOs)	The availability of credit has reduced by 25%.	The availability of credit has reduced by 50%.	The availability of credit has reduced by 75%.

5) Fluctuation in the market (with respect to cash crops)	The price has dropped by 10%.	The price has dropped by 20%.	The price has dropped by 30%.

Table 1: the five disturbance scenarios used in the case study locations

Responses are recorded on a Likert-type scale from 1 to 6, such that a response of 1-3 implies a judgement by the respondent that they will not cross a threshold (1 – certain to recover, 2 - very likely, 3 – likely to recover) and 4-6 that they will not recover (4 - likely to not recover, 5 - very likely, 6 - certain to not recover). Note that the scale is assumed to be symmetrical with an implied equal 'gap' between each point on the scale. Resilience is interpreted in terms of the 'distance to a threshold'; in this case, the minimum magnitude of the disturbance x that the respondent judges themselves unable to recover from. Thus, those judging themselves certain to recover are further from a threshold than those judging themselves to be very likely (or likely) to recover.

To capture differences in perceived resilience that account for potential disturbance across the five storylines, each household is assigned a resilience score. This score reflects their subjective assessment of each storyline scenario and allows households to be ranked, capturing differences in perceived resilience. To produce a resilience ranking score (or index) for each household requires accounting for two degrees of freedom: the selected point on the scale for a given storyline, and the number of times each point on the scale is selected for a given household. A resilience ranking score can thus be defined by a simple sum-of-products. Thus, if there are n_{max} storylines, and each storyline is framed as a question (Q_n) with three parts (a, b, c) where the severity or scale of the disturbance or shock increased, such that it is greater in b than a, and greater in c than in b, then $Q_n(i,h)$ represents question storyline n with disturbance i directed to household h. If x is the household response to question n disturbance i, the ranking score is provided by:

254

255 $$\text{Resilience score for household } h = \sum x.(\text{count}(Q_n(i,h)=x),\ 6 \geq x \geq 1,\ i=a,b,c;\ n=1 \ldots nmax$$

256

257 Those households that are *most* resilient will only register high scores for disturbance *c* (the largest
258 disturbance), and thus their overall score will remain relatively low (scoring '1' for *a* and *b*, with
259 differences determined by the disturbance *c* scores). Those at the other extreme, who are *least* resilient
260 will score 6's for disturbance *b* and *c* (i.e. certain to not recover from the moderate and most
261 significant disturbances). Thus these households will have the highest overall scores, differentiated by
262 the disturbance *a* (small disturbance) scores. In reality, households will most likely fall in the
263 continuum between these two extremes. Ranking of households, from least to most resilient, is
264 provided by their position in this continuum (highest scoring households judging themselves to be
265 least resilient).

266

267 This ranking is *not* intended to be a quantification of resilience. It is important to recognise that the
268 assessment is (a) subjectively produced, (b) responds to a limited number of scenarios and (c) is based
269 on thresholds identified through the interpretation by each respondent of 'not able to recover' in
270 relation to each scenario. The potential for bias is recognised due to self-interest (e.g. in attracting
271 development investment) or, conversely, due to a desire to be seen to be able to cope. Translation into
272 local languages is essential. Careful design of questions in consultation with local expertise that
273 explicitly avoids reference to imported terms such as resilience, and responds to locally relevant
274 conditions, is used to minimise risks, but these cannot be entirely removed. However, while difficult
275 to eliminate completely, the 'hypothetical bias' that can plague self-reported scoring are minimised as
276 cultural factors are largely shared between groups of respondents (Jones and Tanner 2016; Ehmke et
277 al. 2008). Given the cultural similarly of respondents, there is no reason to believe that hypothetical
278 bias will lead to any systematic bias impacting our ability to distinguish the factors that differentiate
279 those with relatively high and low resilience. The overall aim is an index of resilience, negating the

need to calibrate between storylines and allowing the rapid identification of relatively low and high resilience households, in relation to the scenarios presented. At this stage, analysis of these structured subjective outputs provides insights into the data, but does not yet describe the real world. Ranking sets the stage for more detailed qualitative work to understand differentiation between experiences, and to expose and resolve, in discussion with respondents, any potential bias effects.

2.2 Qualitative methods

Participatory qualitative methods were deployed in the second stage of fieldwork to ensure respondents were supported to narrate their own experiences of resilience. These methods were deployed by local research assistants with experience of facilitation, knowledge of each village context and with local language skills. We note that this stage could be supported through a growing toolbox of creative and participatory methods that are designed to "reach across difference" (Brooks et al., 2019 p2) and contribute towards participants' ownership of the knowledge creation process (Brooks et al., 2019; Fals-Borda, 1987; Amaya and Yeates, 2015). In the case presented below, method selection was informed by research assistant skills and experiences and intended to open discussion on social-ecological relations from multiple perspectives. To that end, interpretation of the results was supported by 26 focus group discussions in which facilitators worked with participants to explore and map different aspects of their social-ecological system: ecosystem services, physical infrastructure, organisations, and formal and informal institutions. Within each village, two male and two female groups were selected: one comprised of those identified as having high resilience in the ranking survey, and the other as having identified as low resilience. A comparative analysis of the focus group transcripts and maps revealed similarities and differences in perceptions, explored the choices available, and located the significant factors at play in determining livelihood and disaster risk outcomes. These insights were used to inform themes and prompts for in-depth interviews. 17 respondents were selected for two of the locations, and 16 for the third (that is, a total of 33 interviews). These respondents were selected to ensure representation from across the groups: male and female,

and high and low resilience. The in-depth interviews opened space to further understand the different influential actors, drivers and relational links between different components identified in the system map.

2.3 Case study

This paper draws on fieldwork from three village sites carried out by a research team from July 2017 to November 2017. Each site comprises two or more *paras* (localities), and lies in a distinct agro-ecological region with very different religious, caste and ethnic profiles. As the descriptions below illustrate, each is marginalised compared to mainstream Bangladeshi society. The following overview descriptions of the village sites draws on insights gathered through the qualitative methods outlined above. The village and locality names have been replaced with codes to protect the anonymity of the respondents.

2.3.1 KN1

The first village site, KN1, lies in the north-western region of Bangladesh in the district of Dinajpur. Two localities, or *paras*, were chosen from this site: Har Para and Bari. The region is characterised by long periods of droughts usually lasting up to seven months. However, the region also suffers from floods, especially during the monsoons, river erosion and severe cold spells during the winters. With very little industrial development in the region, the majority of people are engaged in agriculture as cultivators or agricultural labourers. The population is predominantly Hindu (c75%) with the remainder Muslim (who identify as Bengalis) or Christian. The vulnerable and marginalised communities in this region include the Musahars. The Musahars identify themselves as tribal/ indigenous, but they are yet to officially be granted that status. The Musahars are a Dalit community and one of the most deprived and marginalised in Bangladesh, and have limited access to schools, jobs and do not own any land. The Hindus live in Bari and are Khastriya, Vaishya (upper castes) and Rishi (lower caste) communities. The Khatriyas and a small number of the Vaishyas own both homestead and farm land. However, the majority of the Vaishyas and the Rishis live on government *khaas* land.

They pay a yearly land tax in order to hold onto this land. Despite having proof of paying land taxes, the Hindu community in particular in this location face constant threats of displacement from local Muslims, and industrialists from outside the local area.

2.3.2 RM1

The second village site is also in north-western Bangladesh, bordering the Indian state of Assam. Two communities live in this village site: Muslims (in Tan Para) and Hindu Namasudras (in Das *para*). The village site is located along a national highway road that links Bangladesh and India. Villages in this region experience cyclical poverty and hunger during the *monga* seasons - between September to November, when *amman* paddy is sown, and March to April, immediately after *boro* rice is sown. During this period the people are extremely vulnerable to external shocks, and many people migrate for work. The government during this time provides *matti kata* (mud digging) work, usually carried out by women. Those who cannot find work during the *monga* season rely on NGO loans to get by. The region suffers from an average of three devastating floods annually - during *kaal baisakhi* (north-westerly winds), monsoons and the retreating monsoons. In the Muslim *para* (Tan), all families are engaged in agriculture either as own land owners, tenant farmers or agricultural labourers. There are almost no female agricultural labourers, as both the Muslim and the Namasudra community feel that it is not appropriate for women and would affect the family's honour. In the Namasudra *para*, no-one owns agricultural land as all members are *majhis* (fishermen). They get most of their fish from the *beels* or *pukurs* (ponds), but not from the river as there are hardly any fish left. The Namasudras, while able to maintain good relations with the Muslims in the local area, live in fear that they can be displaced from their land, as they are a minority in this area.

2.3.3 KK1

KK1 is located in the district of Barisal in South Central Bangladesh, surrounded by the Sundarbans. The village site has people from three different communities: Muslims, Rakhines (Buddhists) and

Namasudras. Four *paras* were selected from this village: Chand Para, Khola Para, Mapur and Manpur. Chand and Khola Para are occupied by Rakhines, Mapur by Muslims, and Manpur have both Namasudras and Muslims. The region experiences floods three to four times a year, followed by strong cyclones, which are gradually eroding the coast. The Muslims all belong to the fishing community and live on government *khaas* land. The men usually work on boats owned local businessmen. The Namasudras live in the most remote part of the village site. Due to the proximity to the river, the *para* suffers from small floods with the seasonal high tides. Some from the Rakhine community live on their own land, while the majority are landless. A majority of the landowners do not cultivate their own land; rather, they lease it to the Bengali Muslims in the region. The community, which is reducing in size, is under threat of displacement, in the aftermath of the Rohingya crisis and due to powerful (Muslim) property owners usurping their agricultural lands. The Rakhines have faced numerous threats and are now fearful of their lives, which has placed restrictions on their movement.

3.0 Results: revealing patterns of resilience

In this section we present the quantitative results of the resilience ranking survey accompanied by a qualitative explanation the results. We adopt different lenses – comparing the localities, comparing those reporting high and low resilience in Har Para and Manpur, and comparing RM1 and KN1 village sites – to illustrate the variation in resilience within and between communities that can be revealed by the ranking method. In so doing, we are able (a) to confirm that the ranking method is offering insights consistent with the lived experience of communities; and (b) undertake analyses that build from community understandings to of resilience within and between communities.

3.1 Variation between localities and village sites

Table 2 and Figure 1 report the average (mean) sum of products resilience ranking score for each locality in the study. The resilience ranking score is intended to enable differentiation between households with low and high resilience in relation to the five storylines of environmental and

384 economic change. Calculating the average resilience ranking scores for each locality allows the
385 variation in responses between localities to be assessed, identifying those places where respondents,
386 on average, judge themselves to be more or less resilient. Note that a higher score indicates lower
387 resilience.
388
389 Table 2: mean resilience ranking scores by locality

Locality (number of respondents, n=569)	Village site	Mean resilience ranking score	Standard deviation	*Deviation from overall mean*
Das Para (100)	RM1	51.6	6.7	*-4.0*
Tan Para (109)		58.7	10.5	*3.1*
Bari (77)	KN1	54.6	12.1	*-1.0*
Har Para (73)		69.3	10.4	*13.7*
Khola Para (44)	KK1	47.5	5.5	*-8.1*
Chan Para (31)		43.8	8.6	*-11.8*
Mapur (63)		61.3	6.6	*5.7*
Manpur (72)		57.8	6.1	*2.2*
Overall mean ranking score		*55.6*		

390

Figure 1: locality mean resilience ranking scores (higher score indicates lower resilience; shown as deviation from full sample mean)

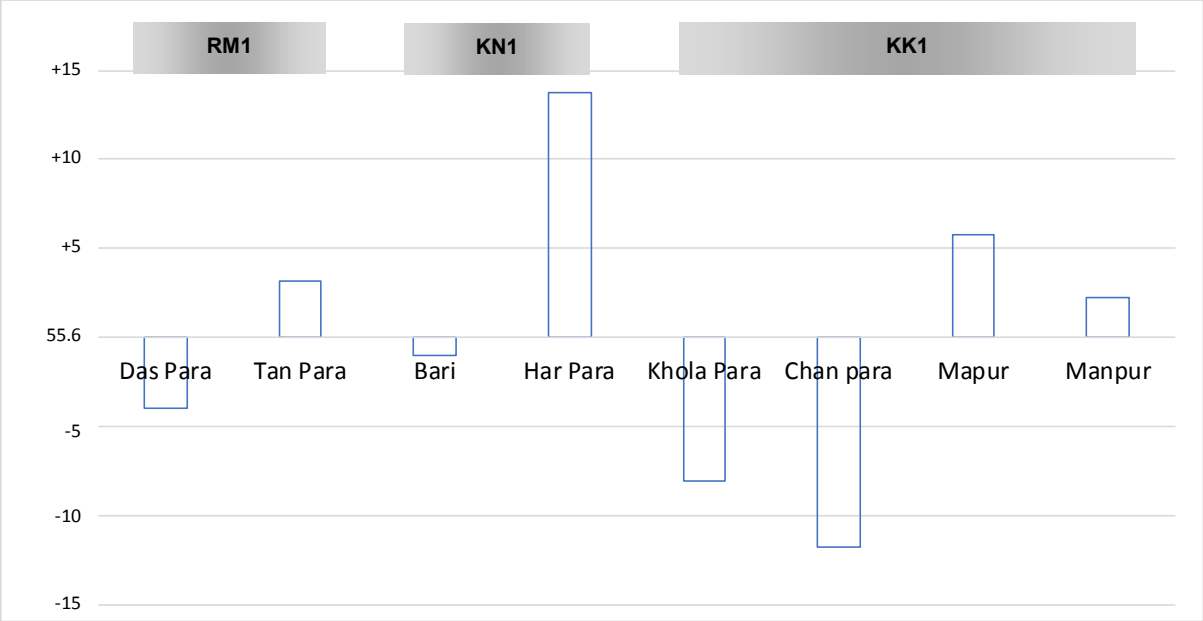


Figure 1 identifies that respondents in Har Para judged themselves, on average, to be the least resilient compared to the other locations. The Musahars in Har Para, KN1 originate from the district of Chappra in Bihar, India, brought along with others to this region during the period of the British Raj to clear forests and lay railway lines. As in India, the Musahars (which translates as 'those who eat rats') are marginalised and continue to face social stigmatisation based on their identity and their eating habits. In an attempt to improve their social status, many have converted to Christianity, but this in turn has meant forgoing many of their food habits which would otherwise have been sufficient to feed them during periods of shortage. KN1 lies in a region characterised by long periods of drought, usually lasting up to seven months, regular floods (especially during the monsoons), river erosion, and severe cold spells during the winters. The village site falls is in the dry and arid zone, with summer temperatures reaching 45C and winter temperatures dropping to 5C. The Musahar community have no recognised rights to land and face the constant threat of displacement, usually due to government road expansion works. Education levels are low, with both men and women working at a very young age. The lack of and poor quality of education restricts access to higher

paying jobs in the neighbouring Economic Processing Zone. As a consequence, the Musahars usually find themselves confined to low paying unskilled jobs, with families often dependent on female agricultural labour for their survival - yet pay is poor, the growing seasons are short, and severe drought or flood events restrict the opportunities for paid work. Unless absolutely necessary, the Musahars refrain from working in the brick kilns that are common in the region, reporting ill-treatment and a failure to pay on time that leads to growing indebtedness and, for some, bonded labour. Musahars rely almost completely on the market for their basic food staples and are very sensitive to price fluctuations which common following droughts. They receive food grains from the Government of Bangladesh, under their targeted Public Food Distribution System. (PFDS), but report irregularity in food dispersal and access. This further adds to problems of food security and nutrition. Overall, the Musahars suffer from economic and food insecurity as a result of environmental shocks and stresses, a shortage of well-paying jobs, and the overarching effects of social discrimination.

Mapur residents reported, on average, the second least resilient scores. The Muslims here occupy *khaas* land and face the threat of displacement, either due to road construction, or from flooding. The men, working on boats owned by businessmen, report that with declining numbers of fish, they are forced to go out to the deep seas where the risk is greater. If they stray into the coast of India they are liable to arrest by the Indian Coast Guards, resulting in several months in jail. Their lives are also at risk from *dacoits* (armed robbers) that live near the Sundarbans. Many families spoke of how they have lost one or two family members because of this occupation. Among these Muslims there are some who, with the help of NGOs, have tried to branch out and diversify their occupations. However, even this diversification largely remains tied to the fishing industry in the region. Women receive work only two months in a year, to break shrimp heads in the processing factories. Within the same village site, the households in Manpur, who report slightly greater resilience than in Mapur, are differentiated from their neighbours in Mapur in a number of important ways. The residents here are a mix of Namasudras and Muslims. One half (often considered the wealthier group) live within the road embankment and

435 the other half live outside of it. Families outside lack the protection of the embankment and, moreover,
436 do not own land of their own but live on *khaas* land. These are communities that have suffered past
437 experiences of displacement. People here are engaged in a wider range of livelihood activities than in
438 Mapur, including fishing, agricultural work, driving auto rickshaws, and working in the brick kilns
439 surrounding the region. Families (both Muslim and Hindu) who live within the embankment are more
440 secure, owning both their homestead and agricultural land. These factors underpin the slightly higher
441 resilience reported by households in Manpur compared to their near neighbours Mapur.
442
443 Those who reside in Khola and Chan para reported the highest average resilience in comparison to
444 the other localities. Here, the Buddhist Rakhine community live on ancestral land, and do not suffer
445 from regular floods, unlike the neighbouring paras (Mapur and Manpur). However, water shortages,
446 due to increased salinity of the water tables, is an ongoing challenge. Politically, the Rakhine are
447 facing a backlash from the Muslims of the region following the Rohingya refugee crisis. In addition to
448 this, they report a constant threat from state forces. For example, at the time of survey, one of our
449 respondents informed us that her sister's house was raided by the crime and terrorist squad of
450 Bangladesh - the Rapid Action Battalion (RAB). In common with many similar stories reported
451 during the fieldwork in these localities, the raid was focused on the illegal sale of alcohol. While the
452 government of Bangladesh allows the Rakhines and other indigenous communities to brew their own
453 local alcohol, this cannot be sold in the markets. The respondent informed us that her sister was
454 levied a huge fine for storing up to 100 litres of alcohol – an unlikely claim as it cannot be made in
455 such quantities. Similar stories of raids and fines are very common. The difficulties being faced by the
456 Rakhine are forcing many to return to Myanmar, yet as a community they have significant
457 advantages compared to the other study sites, arising from their secure access to land and relative
458 isolation from environmental shocks.
459
460 **3.2 Higher and lower resilience groups in Har Para**

Figure 2 takes a closer look at Har Para, focusing on two groups: those reporting the lowest and highest resilience (defined as those in the upper and lower quintiles of a ranked list of household resilience scores, referred to as the low resilience group, or LRG, and high resilience group, or HRG, respectively). Figure 2 shows the mean scale-point scores for those households in the LRG and HRG, in relation to the smallest and largest disturbance for each storyline (see Table 1 for the storylines).

Figure 2: Mean response scores, high resilience group (HRG, solid line) and low resilience group (LRG, broken line), Har Para

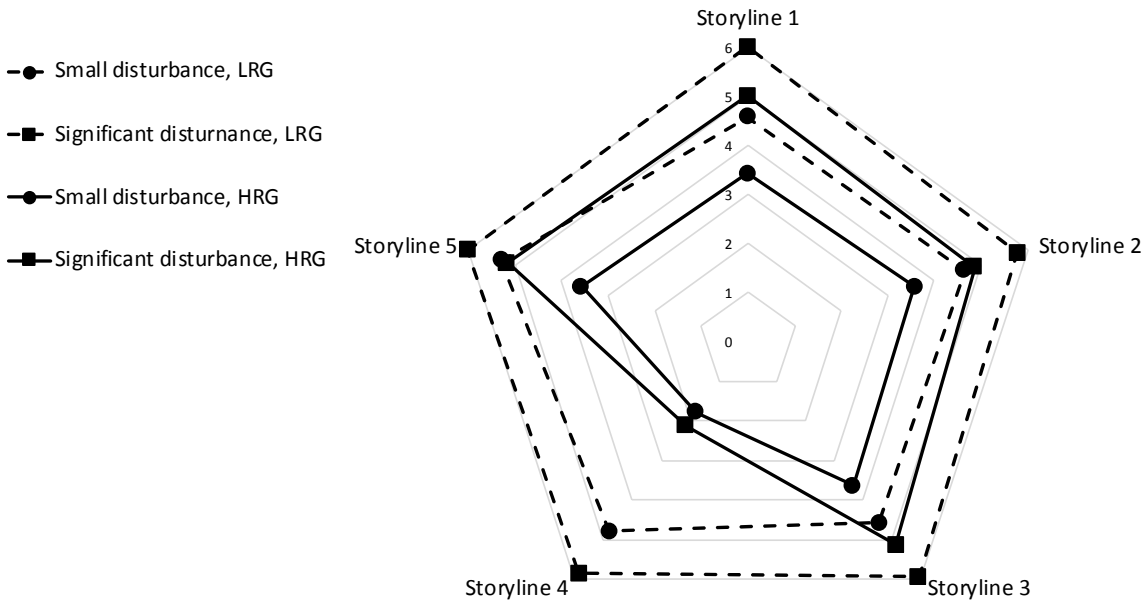


Figure 2 suggests that LRG are broadly equally sensitive to all scenarios, for both small and significant disturbances. In Har Para, members of LRG in do not own land, have temporary housing structures and rely predominantly on agricultural labour for their survival. Members of the HRG reported that they have access to alternative occupations (including auto rickshaw drivers, casual day labourers in loading stations, livestock rearing) and want to move away from dependence on microfinance loans. With households engaged in different kinds of occupations, they don't suffer the same seasonal economic losses as the LRG, who are more closely tied to the agricultural cycles for

their survival. Most significantly, this enables members of the HRG to dissociate themselves from NGO loans, underpinning a greater coping capacity across the range of storylines that were discussed. For example, Ritam a 34 year old Musahar, drives a *borac* (an electric auto rickshaw) to ferry passengers and goods, and occasionally works as a daily wage labourer in a rice mill. This was made possible by taking loans from the church (where he is a member), an NGO, relatives and using the savings of his wife (an agricultural labourer). The *borac* has helped diversify the sources of household income and has allowed the family to accumulate savings. Using this capital he has set up the only tea and snacks stall in the locality, which is now looked after by his wife, who now only undertakes agricultural work when there is an immediate need for money. As a consequence Ritam and his wife use the NGO scheme merely as a place where they can save their money, rather than a place they need for accessing credit. This approach to household income diversification provides a way out of micro-credit dependence for some, but is impossible for the majority in Har Para who remain confined to low skilled and hence low paying jobs.

Discussions and interviews with LRG members revealed two main socio-economic dynamics drive the sensitivity of this group to NGO loans. First, many of the landless and poor are involved in a contract livestock system called '*adi goru*'. Under this system, the larger land owners or wealthy households buy cattle, and the landless and poorest households rear the cattle at their own cost. When sold, the income is divided equally between the two. If this cow has a calf, the first calf is given to the landowner. The second calf is kept by the household, and any profits from this calf are kept by the household. Many families rely on the money that they would obtain from the sale of cattle to repair houses, buy food and pay for marriages. However, drought frequently results in loss of cattle, which drives people into further debt.

The second dynamic common among those in the LRG is participation in *bandoki*. The system of *bandoki* refers to a land mortgage system. Landowners (small and large) use this system to procure instant loans

from those in the village who have access to different sources of credit. The land is given to the villager, who retains access until the principal amount is repaid in full. Usually NGOs provide access to these large sums of money, with loans provided to villagers who claim that the money will be used for entrepreneurial activities. While some LRG Musahars are involved in *bandoki*, those who are extremely poor do not have access to loans and are excluded from the system. The Musahars who are involved see gaining *bandoki* land as a way to earn money, but also a process by which they are closer to the land, providing a mechanism to ensure their food security. Villages who are *bandoki* cultivators have freedom in terms of what and how to produce. However, they are not free from the pressures that are placed upon them by the market. This results in them cultivating high yielding variety seeds with high input costs. They are dependent on large agricultural corporations for their seeds, fertilisers and pesticides. None of these *bandoki* cultivators are registered as farmers and, as a consequence, do not access to cheap agricultural loans and basic compensation for loss of crops, or subsidised access to mills. During periods of excessive floods or drought, these *bandoki* farmers are excluded from any relief or aid provided by the government, as they do not own the lands they cultivate. Left completely to the vagaries of the market and environment shocks, LRG *bandoki* cultivators take multiple loans from NGOs and other informal sources of credit trapping them in a system of production characterized by increasing indebtedness. For minority communities like the Musahars, these pressures are exacerbated by their social position, where discrimination often excludes them from well-paying jobs, sources of credit and, at times, government payments.

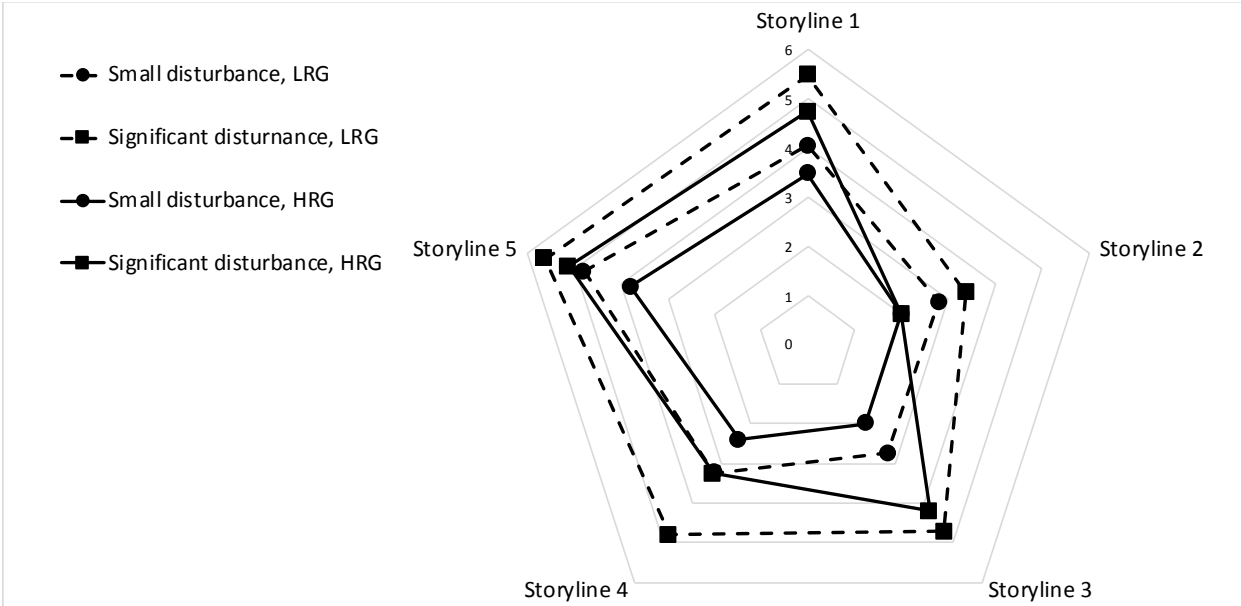
The relative insensitivity of the HRG to micro-credit changes (storyline 4) demonstrates the significance of this stressor in differentiating resilience in the *para*. A typical HRG respondent stated: "*NGOs come and go and we cannot be dependent on such institutions that do not ensure continuity, where our money is not safe in the long term. We have to look for other avenues of making and saving money*." Respondents were acutely aware that micro-credit came with the promise of financial independence, and for many NGO loans are an important source of credit to secure basic food security needs; a

common response was to note that "*we could at least repay loans with our labour*". Yet in Har Para, as in other localities, people have witnessed a growing dependence on older or traditional forms of usurious credit such as private money lenders. These loans have much higher interest rates, further increasing the indebtedness of those who have to rely on these lenders. In the LRG, respondents report few micro-credit options and felt at the greatest risk of falling prey to traditional lenders should NGO micro-credit become scarce.

3.3 High and low resilience groups in Manpur

Figure 3 reflects a similar situation in Manpur to Har Para, in which the high and low resilience group are differentiated by their dependence on NGO operated loans (storyline 4). However, the two village localities are also different. In Manpur, storyline 2 (erosion/ landslide) also differentiates the low and high resilience group: in this case, the most resilient perceive no change in their ability to cope when the disturbance increases from small to significant. The least resilient, while relatively insensitive to erosion and landslide, nonetheless report a deterioration in their ability to cope when the disturbance increases. As noted above, this reflects an environment in which the better off in the community live within the road embankment, proving security against the erosion suffered by the families living outside the embankment (largely members of the LRG) who survive on more vulnerable *khaas* land. Those living on the *khaas* land are forced to find unoccupied land to relocate to when their existing land becomes untenable.

Figure 3: Mean response scores, high resilience group (HRG, solid line) and low resilience group (LRG, broken line), Manpur



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555 Storyline 3 (drought) is also significant, as a worsening drought leads to a substantial fall in the ability
556 to cope and recover for both the low and high resilience groups. The short agricultural season is
557 vulnerable to drought, which when of sufficient severity can induce massive crop losses, as well as
558 the death of livestock. Livestock is an important source income for both low and high resilience
559 households, with sales peaking during Eid, when drought is most likely. While this is driest period of
560 the year, respondents also reported that severe droughts are due to water not being released from
561 dams that lie across the border in India. As seen in figure 3, the HRG are particularly significantly
562 affected. This reflects the experiences of predominantly medium- and large-scale farmers in the HRG
563 who, along with paddy, cultivate jute which requires high quantities of water.

564

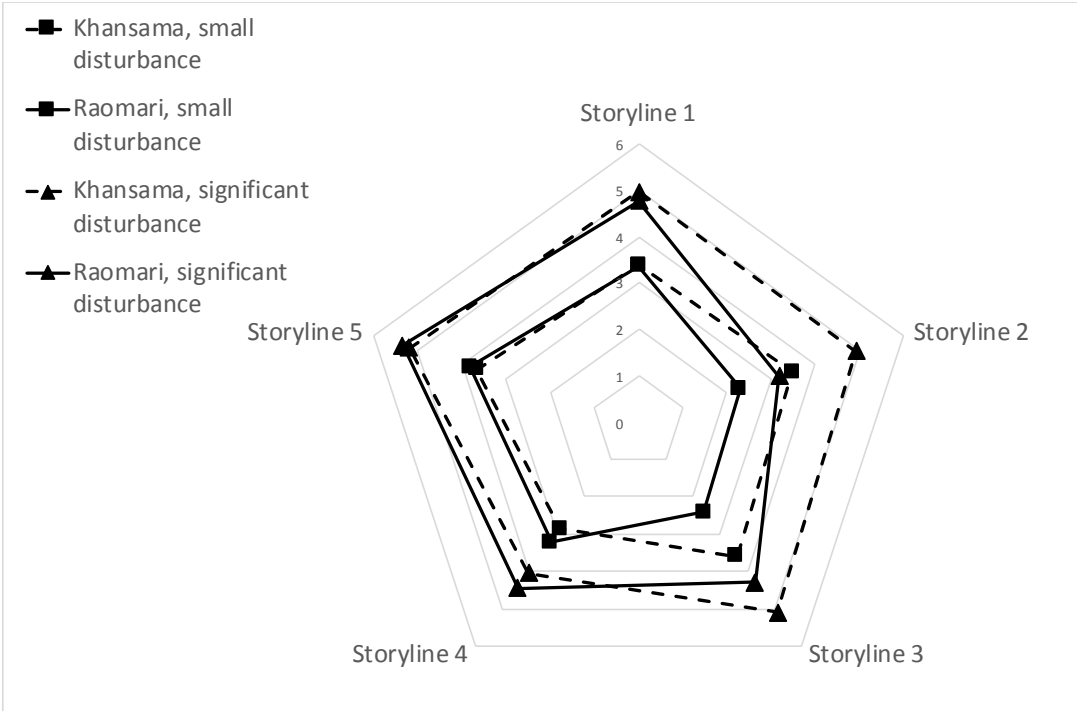
565 **3.4 Variation between village sites**

566 Figure 4 compares the RM1 and KN1 village sites, focusing on the perceived effects of the smallest
567 and largest disturbances. This comparison reveals that the reported overall lower resilience of the
568 KN1 village site (Figure 1) is principally a result of differences in relation to storylines 2 (erosion/

landslide) and 3 (drought), the investigation of which reveals important social and environmental differences between the sites. Both sites experience flooding, but KN1 is prone to flash floods, while RM1 experiences floods more frequently throughout the year. In KN1, the impact of flash floods is felt in terms of landslides and river erosion (storyline 2) that take land and displace the people from the villages. For the Musahars in KN1, these events occur against a backdrop of a lack of land rights and very poor employment prospects. Importantly, the effect of increased flooding in RM1 is the destruction of homes; however, they do not report significantly greater vulnerability to flooding as they have well-established coping strategies (moving onto the national highway embankment while waiting for the flood water to recede; or in the case of more permanent displacement, becoming *ghar jamais* - live-in son-in law). Within the Das community, a sizeable number of the young husbands live as *ghar-jamais* due to the floods. While resolving the immediate issue of homes lost to flooding, this strategy remains problematic, as the family unit is broken up, suggesting that the resilience to flooding that RM1 communities report masks a reliance on fundamentally undesirable coping strategies.

Drought differentiates the communities in a similar manner to erosion, with both small and large flood inducing a more profound impact in KN1 than in RM1. KN1 regularly suffers from long periods of drought, leading to acute food shortages, lack of jobs and poor health. Access to water and fisheries is undermined as prolonged drought dries up ponds and canals, while the situation in the river is further aggravated by the construction of a bridge near the village, which has resulted in siltation and reduced flow. As discussed above, the lower resilience in relation to drought reported in KN1 is also influenced by the particularly precarious position of the Musahar community, who lack access to food safety nets when prices rise following periods of drought and rely heavily on female agricultural labour for cash income, opportunities for which reduce significantly following periods of drought.

595 Figure 4: Mean scores for RM1 (solid line) and KN1 (broken line)



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600 **4.0 Discussion**

601 While much literature continues to press the case for a focus on equity and social justice across the
602 study of adaptation (See and Wilmsen 2020; Wilmsen and Rogers 2019; Adger et al. 2016), resilience
603 (Mikulewicz 2019; Matin et al. 2018; Biermann et al. 2015) and transformation (Few et al., 2017; Jon,
604 2018; Matyas & Pelling, 2015), these are well-worn calls and little has changed in practice (See and
605 Wilmsen 2020; Svarstad and Benjaminsen 2020). Driving towards equity requires resilience planning
606 that is grounded in the "richness of local experience", focusing on how multiple underlying factors
607 create patterns of disadvantage (Pelling and Garschagen, 2019 p328; Matin et al. 2018). It also requires
608 methods capable of identifying these factors, in context. Resilience ranking enables this through
609 subjective assessment that takes as a starting point local perceptions of interacting social and cultural
610 norms, risks and opportunities, and offers rapid identification of high and low resilience groups,
611 categorised in terms of their interpretation of the degree of disturbance they are able to recover from

612 (Walker et al. 2006). More detailed participatory qualitative work elicits expressions of how these
613 groups subjectively perceive, evaluate and narrate their situation, elevating local "senses of justice" in
614 a rich picture of how resilience is distributed (Svarstad and Benjaminsen 2020 p4). The least resilient
615 in Har Para, for example, describe a series of traps that arise from political and social marginalisation,
616 felt in terms of poor access to education, limited access to non-agricultural work, ill-treatment in
617 industry, and exclusion from government support. Each of these factors are felt as injustices that
618 differentiate them from their non-Musahar neighbours, and lock them into contract livestock and
619 land mortgage systems that promise a route to food security through access to land and animals, but
620 in fact intersect with market or weather events to drive them further into debt.
621
622 This inductive and situated exploration of resilience is particularly significant given the tendency for
623 policies and programmes framed by resilience to overlook the deep-rooted, historically-informed
624 social, cultural and political subjectivities and mechanisms that structure inequitable outcomes
625 between system actors (Chu and Michael, 2019; Matin et al. 2018; Fainstein, 2015; Cote and
626 Nightingale, 2012). While ontological challenges have hindered conceptual integration of the
627 biophysical and social within resilience (Carr, 2019; Olsson et al. 2015; Brand and Jax 2007), we
628 highlight here the centrality of recognition injustices in creating the conditions for the distribution of
629 outcomes in practice (Massarella et al. 2020; Svarstad and Benjaminsen 2020; See and Wilmsen 2020).
630 That is, it is the failure to give voice to different cultural and social groups and to prioritise *their*
631 meaning-making in accounting for the experiences, identities and values that they share that stands in
632 the way of practical progress towards equitable resilience.
633
634 Following Svarstad and Benjaminsen (2020), addressing recognition requires decolonising knowledge
635 in resilience research and practice by opening space for subjective assessment that allows affected
636 people to "analyse their own situation, independently of narratives produced by more powerful
637 actors" (p8). By moving away from the positivism of indicators and frameworks, the approach

638 presented here enables the engagement of households in the production of knowledge about their
639 resilience (Mikulewicz, 2019). Rather than inviting the "stereotyping and paternalism that are risks in
640 attempting to recognize marginalised groups" (Svarstad and Benjaminsen 2020 p8), resilience
641 planning and actions need to be predicated on assessments that allow the emergence of groups' own,
642 locally grounded, assessment of difference and underlying conditions. As See and Wilmsen (2020)
643 reiterate through their analysis, households need to be understood "as heterogeneous entities that are
644 highly differentiated with different socio-economic starting points and relationships of power" (2020,
645 p10).
646
647 Avoiding misrecognition thus means adopting a form of resilience assessment capable of working
648 with participants to reveal these two core features of situated heterogeneity – the manner of
649 differentiation (the forms and features of difference) and causes of differentiation (underlying
650 conditions driving or sustaining difference). These insights are generalisable insofar as they push
651 back against attempts to synthesise resilience through comparison across contexts, and place a central
652 focus on a situated subjective approach. The two features are revealed through subjective ranking and
653 assessment, as the Bangladesh case illustrates. The first – the causes of differentiation – are varied,
654 encompassing social, political, economic and environmental factors. As Harrison and Chiroro (2016
655 p1) suggest, a focus on resilience should not be "at the expense of understanding the conditions that
656 shape vulnerability", in particular through too much focus on biophysical shocks and too little on
657 underlying social conditions and drivers of risk (Cote and Nightingale 2012; see also Hayward, 2013;
658 MacKinnon and Derickson, 2013; Thomalla et al. 2018). In our case studies, exposure to drought and
659 flood events interact with, for example, access to livelihood opportunities; ownership, contract and
660 tenure systems; perceptions of identity and histories of discrimination and stigmatisation; and
661 planning and public policy arrangements. The effects are multi-causal, arising from interactions and
662 feedbacks such that they are highly context specific, shaping capabilities and sustaining patterns of
663 security and precarity. Policy or practice engagement in such contexts must necessarily be predicated

664 on a rich description capable of capturing experiences and understandings of causation, and
665 recognising that interventions occur in contexts already characterised by a complexity of social and
666 ecological relationships. These underlying conditions shape perceptions of risk and are experienced
667 as injustices; as patterns of winners and losers in existing practices of resilience; and as opportunities,
668 constraints and impacts that mediate external interventions (Dodman and Mitlin, 2011; Renn, 2011;
669 Walsh-Dilley et al., 2016).
670
671 The manner of differentiation – the second feature of heterogeneity that we highlight – focuses on the
672 forms of difference rather than the causes. In our cases, particularly evident were intra-community
673 heterogeneity; the significance of scale; vulnerability to specific versus generalised shocks; and
674 resilience that arises from desirable versus undesirable conditions and practices. In relation to intra-
675 community heterogeneity, the fact that shared social characteristics or living in a close proximity with
676 others does not produce a community of people with common vulnerabilities or capacities for
677 adaptation is well established (Dodman and Mitlin, 2011; Forsyth, 2013; Mohan and Stokke, 2000).
678 Here, we confirm this empirically in relation to resilience, a finding that is significant in the face of
679 tendencies towards homogenisation of communities that persists is some quarters (Svarstad and
680 Benjaminsen 2020). For example, while Musahar subjectivity binds the community to discriminatory
681 policies and practices, the experience of households across Har Para is not homogenous in social-
682 ecological resilience. Religion and caste can be too easily be deployed to identify bounded community
683 groups, concealing the factors that underpin (or undermine) the resilience of these groups, and the
684 significance of village scale differences that distribute resilience within them. Subjectivities, therefore,
685 while significant for equitable resilience, are not the end of the story. While we agree that attributes
686 such as caste, gender, religion or ethnicity can be "socially constructed to discriminate against
687 individuals and groups" and thereby "subject them to further disenfranchisement, undermine their
688 resilience, and create conditions for more risks to perpetuate" (Matin et al. 2018 p200), variation
689 within such groups remains. Moreover, it is the reasons for variation – in the Musahar case, capture

690 by or escape from loans and debts – that may be most significant in developing an understanding of
691 resilience that can ground effective, equitable support. Similarly, the cases present a clear picture of
692 variation within and between different scales of focus – household, locality and village – reinforcing
693 the significance of scale in differentiating resilience (Vogel et al. 2007; Matin et al. 2018) and, thus, of
694 an assessment methodology able to identify difference across scales.
695
696 More broadly, focus on the manner of differentiation draws attention to how experiences of resilience
697 vary significantly, and should guard against assumptions and simplifications in targeting policy or
698 practice. The precarious situation of the least resilient is particularly evident, who report close
699 proximity to thresholds following even the smallest environmental and/ or socio-economic
700 disturbances. As Pelling and Garschagen (2019) note, among the poorest, those least able to withstand
701 shocks and stressors have little to rely on, with homes and equipment that are fragile, and little by
702 way of livestock or savings to fall back on and that are rapidly depleted. Resilience actions, be they
703 conceived among policy or practice communities, need to identify and respond to the breadth of
704 threats experienced by these most vulnerable groups, and to do so by addressing the underlying
705 factors that give rise to these unsafe conditions. However, as those reporting the highest resilience in
706 Manpur illustrate, relatively resilient livelihoods can also be rapidly undermined, as in the case of
707 those running large-scale livestock enterprises who were found to be particularly vulnerable to
708 drought which, if of sufficient severity, might rapidly undermine this otherwise resilient occupation.
709 Moreover, the apparent resilience in RM1 is secured through an ability to temporarily migrate and
710 recover following repeated flood events or for families to be split through long term relocation. These
711 are challenging and undesirable practices, the persistence of which is not sought locally. Taken
712 together, the cases underline the need for space to be created within which resilience is defined in
713 relation to local understandings of precarity, and through the expression of senses of justice that
714 inform local conceptions of wellbeing. Without this, resilience risks becoming tied to the ability to
715 survive by living through cycles of recovery, limited to withstanding "knock after knock"

716 (MacKinnon and Derickson 2012 p255) and unable to secure outcomes that are valued in context
717 (Svarstad and Benjaminsen 2020; See and Wilmsen 2020).
718
719 **5.0 Conclusion**
720 Matin et al. (2018 p.197) summarise that "equity is concerned with how the moral equality of people
721 can be realised. It places focus on the needs of those disadvantaged by relations of power and
722 inequalities of opportunity, and how these barriers to human flourishing can be identified,
723 understood and addressed". Seen through the lens of recognition justice, making progress towards
724 equitable resilience relies on securing a role for local communities in resilience assessment as a right,
725 not a privilege. This means moving beyond positivist approaches to resilience assessment and
726 histories of marginalising local voices. Rather, resilience assessment needs to be predicated on
727 methods that make resilience itself the object enquiry and place epistemic diversity at the centre.
728 Through this, two core features of situated heterogeneity – the manner of differentiation and causes
729 of differentiation – can be revealed and explained. As the results discussed here indicate, the
730 resilience ranking approach enables this, meeting the practical goal of integrating social, economic
731 and political root causes into resilience through attention to the epistemic challenge of recognition
732 justice. It is the failure to give voice to different cultural and social groups and to prioritise their
733 meaning-making that stands in the way of practical progress towards equitable resilience.
734
735 Resilience in practice – as deployed in the field by governmental and non-governmental agencies –
736 requires methods that are replicable and problem-focused. The ranking method is built around a
737 rapid and easy to implement household survey, the results of which can be readily analysed. This
738 allows identification of those who judge themselves to be of relatively high and low resilience, and in
739 so doing, provides an entry point for consideration of equity. Exploration of experiences and of the
740 similarities and differences between high and low resilience groups can be undertaken with
741 participants, using participatory qualitative methods. This second stage inevitably necessitates an

742 investment of time, requiring approaches that build trust and support open discussion, ideally
743 facilitated by those with experience of local languages, subtext and social norms.
744
745 The aim is to enable participants to control the narrative that emerges, elaborating their subjective
746 understanding and making sense of their own circumstances. As an endeavour in knowledge
747 production, there is a need for reflexive practice, with facilitators focusing on supporting participants
748 to elaborate their own positions, listening to them rather than speaking for them. Particular care may
749 be required to avoid reflecting or reinforcing dominant discourses of poverty and power that may be
750 prevalent in some settings. There is, however, an increasing menu of participatory and creative
751 approaches to select from, the choice of which should reflect the experience and skills of those
752 undertaking the resilience assessment. The results presented here suggest one such approach: focus
753 group discussions and group mapping exercises explore perceptions of risks, opportunities and the
754 underlying social, institutional and ecological conditions at play in determining livelihood and
755 disaster risk outcomes. Subsequent individual in-depth interviews then focus on themes informed by
756 these exercises, build on the trust developed during the group work, and provide an opportunity for
757 participants to reflect on initial insights. The result is a situated understanding of how and why
758 resilience is differentiated, offering an analytical starting point from which policy and practice can
759 drive towards equitable resilience.
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