Building transformative capacity in southern Africa: Surfacing knowledge and challenging structures through participatory Vulnerability and Risk Assessments

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Abstract
Although participatory approaches are becoming more widespread, to date vulnerability assessments have largely been conducted by technocrats and have paid little attention to underlying causes of vulnerability, such as inequality and biased governance systems. Participatory assessments that recognise the social roots of vulnerability, however, are critical in helping individuals and institutions rethink their understanding of and responses to climate change impacts. This paper interrogates the contribution of Oxfam's Vulnerability and Risk Assessment methodology to enabling transformation at both personal and institutional levels. Three Vulnerability and Risk Assessment exercises were conducted in Malawi, Botswana and Namibia by one or more of the authors in 2015 and 2016. Reflecting on these workshops, we explore the contribution that a process like the Vulnerability and Risk Assessment may bring to transformation. We conclude that these types of inclusive and representative participatory approaches can shift narratives and power dynamics, allow marginal voices to be heard, build cross–scalar relationships and enable the co-creation of solutions. Such approaches can play a key role in moving towards transformational thinking and action, especially in relation to climate change adaptation.

Keywords
Vulnerability assessment, adaptation, Southern Africa, participatory process, transformative capacity, climate change

Introduction
Action research in the form of truly participatory, representative and inclusive vulnerability assessments may represent a much-needed shift in risk-reduction strategies. Indeed, action research involves bringing together a range of

stakeholders to participate in an inclusive process to integrate diverse knowledge and find solutions to problems that concern them and their communities (Bradbury, 2015; Brydon-Miller, Greenwood, & Maguire, 2003). This is different to traditional research projects, which are largely conducted by experts and often miss the nuances of local context, perspectives and preferences (Brydon-Miller et al., 2003; Ortiz Aragón & Glenzer, 2017). They have also tended to focus on the biophysical impacts of hazards on systems and communities, whilst often overlooking socio-economic factors like governance and gender inequality (Preston, Yuen, & Westaway, 2011). Indeed, many vulnerability assessments undertaken in the context of climate change work have followed this traditional, technocratic approach. As such, vulnerability assessment approaches have largely lacked creativity and innovation in their implementation, and likewise have failed to recognise vulnerability as a social-ecological construct (Tschakert, van Oort, St. Clair, & LaMadrid, 2013). NGOs and civil society organisations have often filled this gap, albeit almost exclusively at a local level. Information about these participatory vulnerability assessments have seldom been published in peer-reviewed journals, which limits their sectorial impact. However, even participatory vulnerability assessments have often failed to be sufficiently inclusive of women and marginalised groups, and few have created an environment that enables such groups to freely take part in the exercise and effectively share their knowledge – leading to ineffective risk-reduction strategies (Morchain, Prati, Kelsey, & Ravon, 2015). This lack of focus on social considerations and inequalities in VAs means that issues of power and local knowledge are ignored (Ravon, 2014).

Action research is essential for dealing with complex problems such as climate change in a holistic way, as it allows the root causes of marginalisation and vulnerability to be explored and questioned (Brydon-Miller et al., 2003; Ortiz Aragón & Glenzer, 2017). This includes questioning the assumptions that drive the current ways in which we respond to global environmental challenges, and in doing so may open new paradigms of social change that position people, not technology alone, at the core of climate change solutions (O'Brien, 2016). In practice, this means recognising that incremental adaptation efforts are often not enough to overcome the challenges presented by climate change and other development processes. Instead, incremental adaptation should operate alongside more strategic approaches that enhance adaptive and transformative capacity and build resilience by addressing the systemic causes of vulnerability (Butler et al., 2016; Kates, Travis, & Wilbanks, 2012; Pelling, O'Brien, & Matyas, 2015; Ziervogel, Cowen, & Ziniades, 2016). To date, there has been limited work on how vulnerability assessments might feed into and support a transformative adaptation agenda.

This paper addresses this gap by presenting an approach to vulnerability assessments that goes beyond a biophysical and technical focus to understand relational and structural vulnerabilities. It aims to reflect on how a cross–scalar vulnerability assessment process, carried out in Malawi, Botswana and Namibia in 2015 and 2016, might enable transformation that is rooted in social justice and that is built with the knowledge and experience from a wide range of actors across

governance scales. As such, acting on climate change related vulnerabilities becomes an entry point to address multifaceted risks and obstacles to development. The approach draws on a social learning approach that Chung Tiam Fook (2017) suggests can help to unearth structural challenges to identify optimal entry points for transformational adaptation. Such learning is a key component of action research (Burns, Harvey, & Ortiz Aragón, 2012).

Transformation

The action research literature acknowledges that transformation is necessary for dealing with wicked problems such as climate change and inequality, where addressing root causes of marginalisation requires engaging with power relations (Ortiz Aragón & Glenzer, 2017). What is transformation and how is it enabled? Here we understand transformation to be a process that, whether implicitly or explicitly, gradually or suddenly, re-examines the structures that contribute to or hinder the ability of people to have fair access to opportunities to achieve their wellbeing. Literature on transformation is deeply embedded in trying to understand structural change and the importance of broader social transformation (Few, Morchain, Spear, Mensah, & Bendapudi, 2017; Pelling et al., 2015; Ziervogel et al., 2016). From a justice perspective, transformation requires questioning who holds power and accountability in society, and how power might be redistributed to increase representation and inclusivity.

A current example of transformation is the #MeToo movement, which has challenged historically paternalistic and misogynistic structures (institutions, regulations, policies and practices e.g. in relation to wage disparities, insufficient representation of women in decision making bodies, but also in relation to the fundamental right to speak up and be heard without fear of reprisal). The movement is redrawing what is considered acceptable and unacceptable in the way men and institutions act in relation to women. In other words, #MeToo is contributing to transforming the ways in which power dynamics can – and can no longer – define gender relations.

Processes like Oxfam's Vulnerability and Risk Assessment methodology aim to inspire change that could be considered either transformational (i.e., the transformation *of* adaptation practice); or transformative (i.e., the transformation of broader aspects of development *through* adaptation activity) (Few et al., 2017). Such a framing of transformation within vulnerability assessments enables an exploration of the forces shaping climate governance on a case-by-case basis. Furthermore, processes like the Vulnerability and Risk Assessment can contest and eventually contribute to transforming the very ideology of adaptation per se, which often solely aims to reduce biophysical impacts. Through the lens of transformation, adaptation responses can be developed in a more inclusive manner that draws from fringe sources of knowledge (e.g. marginalised groups) and which frames adaptation in the broader context of development (De Wit, 2018; Morchain, 2018).

We argue that transformation can be enabled by developing an integrated, holistic understanding of the broader system in which adaptation takes place, as well as through the building of relationships and the co-development of solutions (Few et al., 2017; Pelling et al., 2015; Ziervogel et al., 2016). Fundamental to enabling this is cross–scalar collaboration and participation between the multiple stakeholders that play a role in shaping current and desired future adaptation pathways – a feature of the Vulnerability and Risk Assessment. Not only can such a participatory approach help stakeholders to develop new skills and build relationships and networks across scales; it can give a voice to otherwise marginalised individuals or groups, thereby building trust, empowering communities and creating opportunities to shift hierarchical structures of power and authority (see Butler et al., 2016). Through this exercise, stakeholders begin to gain a better understanding of how perceived risks and hazards might affect people differently. New voices, and possibly new leaders, emerge. With an integrated understanding of the problem, stakeholders can work together to find innovative solutions and develop a landscape-wide vision for alternative development pathways (Morchain & Kelsey, 2016).

For engagement to lead to transformation, the process needs to be socially inclusive and relational. It also needs to challenge existing societal norms, values and beliefs, and compel stakeholders to question predominant knowledge and governance structures (Jernsand, 2017). These potential outcomes are all indicators of transformation, as they initiate new ways of both knowing and doing (also see Pelling et al., 2015 and Butler et al., 2016). However, sustaining this change beyond the confines of multi-stakeholder engagement processes requires that transformation is supported by an enabling – in many cases transformed – institutional environment. Without this, deep-rooted and long-lasting change is unlikely to occur. This means that new policies, plans or agreements may need to be forged and that organisational structures and values may need to be revisited with transformation in mind. According to Few et al. (2017, p. 4), radically changing this conventional formulation requires structural reorganisation ('a major change in the governance structures that frame adaptation') and reorientation ('a reconfiguration of social values and social relations in adaptation').

Investment in capacity building is also critical for enabling transformation. This is a common challenge in the developing country context, where resources are usually limited. Burch (2010, p. 287) emphasises that 'addressing a lack of technical, financial, or human resources is less a matter of creating more capacity than of facilitating the effective use of existing resources'. Part of increasing effectiveness in climate adaptation and development efforts depends, precisely, on ensuring responses are aligned with the needs of people directly affected, as can be identified through participatory vulnerability assessments. Capacity building should not be exclusively understood as, or aimed solely at, building technical skills. Indeed, leadership and process facilitation skills are key elements in capacity building. Yet facilitation and leadership skills alone are not able to shift structures. Rather, their objective should be to steer conversations and promote a constructive

dialogue that challenges existing power dynamics. Having transformation 'champions' emerge from vulnerability assessments is an ideal outcome. Key to these processes being long lived is community self-organisation, and the capacity and willingness of communities to initiate, and live with, change (Butler et al., 2016; Pelling et al., 2015). Facilitation, understood in the broadest sense, thus plays a key role in shaping pathways to transformation.

Ziervogel et al. (2016) invite the exploration of an alternative paradigm that focuses on 'transformative capacities' as opposed to adaptive capacities. This conscious shift demands a reconsideration of where change needs to happen and, as such, leads us to explore the extent to which socio-economic structures promote or hinder equity and sustainability – and subsequently challenge the social injustices existing within the system. For Ziervogel et al. (2016), acquiring and using transformative capacities means that people can have a say in shaping the world that they wish to inhabit. This can be pursued by promoting empowerment through participation and co-creation. However, because this is likely to require shifts in agency and power, its success will partly depend on a wide spectrum of stakeholders welcoming, accepting, or exploring collaboratively what new paradigms might entail. The three mutually reinforcing transformative capacities that Ziervogel et al. (2016) suggest are needed include: individual agency, social cohesion, and the promotion of a renewed spiritual and pragmatic awareness of the importance and fragility of our relationship with ecosystems. The three Vulnerability and Risk Assessments that we ran in Southern Africa aimed to shift the discussion and the framing of adaptation towards building transformative capacity.

The Vulnerability and Risk Assessment process

The Vulnerability and Risk Assessment process, developed by Oxfam in 2013, was initially aimed at pushing staff, partners and community members to think beyond the frequently-used programmatic responses to challenges such as disaster risk, climate change impacts and addressing food insecurity, and to explicitly address structural challenges across levels of governance. This process has since been increasingly adopted by academia and multilateral organisations looking to develop a holistic understanding of challenges and opportunities from multiple perspectives. As such, the Vulnerability and Risk Assessment methodology and the action research approach share the common objective of learning and co-development of knowledge in line with the principles social learning. They both call for a consideration of power dynamics and a greater understanding of context, which can result from bringing together different stakeholders with diverse knowledge and allowing these voices to be heard through inclusive and representative participation. The Vulnerability and Risk Assessment process aims to give stakeholders the opportunity to experience the benefits (and difficulties) of thinking about adaptation and development in a multi-hazard, multi-stakeholder, exploratory and participatory manner. In seeking social progress, then, the process of understanding

and assessing vulnerability becomes as important, if not more, than its very findings (Preston et al., 2011).

The Vulnerability and Risk Assessment is carried out in a two-day workshop that is facilitated by a combination of NGO/government officials or NGO/academic partners. It seeks to include representatives from communities, civil society organisations, NGOs, academia, local and national government and the private sector (Morchain & Kelsey, 2016). The first step in the four-step process is the Initial Vulnerability Assessment, in which a list of hazards and issues are identified and prioritised in relation to the key social groups and livelihood activities in question. All participants vote in these prioritisations. In the second step, Impact Chain Exercise, participants map the direct and indirect impacts of these priority hazards and issues. This step aims to build a better understanding of how impacts can multiply and accumulate through systems over time and highlights possible leverage points for action. Step 3, Adaptive Capacity Analysis, fleshes out participant ideas for addressing challenges or system inequalities identified in step 2. In the final step, Aligning Findings with Opportunities, the ideas developed are turned into implementable solutions by participants exploring possible funding opportunities and identifying key stakeholders that need to be engaged. Where possible, it also links the findings of the Vulnerability and Risk Assessment to existing plans and processes. This is important for establishing how the responsibilities for action might be shared amongst stakeholders and for reducing any possible duplication of efforts and/or allotted finances.

The ultimate objective of this type of vulnerability assessment is to make planning and decision-making processes more equitable and participatory, and to increase the agency of people experiencing reduced power to influence such processes. Indeed, it is recognised that processes that genuinely enables stakeholder representation and participation can lead to more beneficial social and environmental outcomes (De Vente, Reed, Stringer, Valente, & Newig, 2016). They also increase the potential for transformation by questioning prevailing values, norms and governance; developing new ways of working that are based on collaboratively-derived visions for an alternative development pathway and providing a platform for the establishment of new partnerships and cooperatives, including through community self-organisation. The Vulnerability and Risk Assessment, nevertheless, is merely a two-day exercise with stakeholders, and as such it only provides a structure under which these dialogues can start. The real test of the long-term sustainability of these objectives – and indeed of their expected outcome of promoting or achieving transformation – is in the follow-up and in subsequent efforts to consolidate relationships between stakeholders.

Methods

Linked to the 'Adaptation at Scale in Semi-Arid Regions' research project, the Universities of Botswana, Cape Town and Namibia worked with Oxfam GB to promote research uptake. As part of this partnership an Oxfam GB representative

trained researchers at these universities in how to conduct a Vulnerability and Risk Assessment process. Workshops were conducted in Botswana (Masundire et al., 2016), Malawi (Morchain et al., 2016) and Namibia (Hegga et al., 2016) with different contexts (see Table 1), co-facilitated by the University staff and Oxfam GB representative (all co-authors on the paper). Ahead of the Vulnerability and Risk Assessment, stakeholder-mapping exercises were conducted with local stakeholders, which led to the identification of the so-called Knowledge Group (the key stakeholders in the landscape in question). This ensured that a large diversity of views, including those of marginalised and least powerful groups, would be present in the room. Ahead of the Vulnerability and Risk Assessment workshop, individuals or institutions within the Knowledge Group were also asked to produce their own version of the lists of key 'hazards and issues' and of 'social groups and livelihoods', as a way to ensure that a wide range of perspectives informed the framing of the exercise. The Vulnerability and Risk Assessment workshops brought together the Knowledge Group (ca. 20–35 persons) for a two or two and a half day event, where the four steps of the methodology were undertaken as a collaborative effort.

In facilitating the three Vulnerability and Risk Assessments, our intention as researchers and practitioners was to avoid influencing the process with the agendas of our project or organisations. This was due to ethical concerns, but also because a biased process would risk losing legitimacy in the eyes of stakeholders. However, the fact that we are all knowledgeable about climate change and development means that we inevitably added substance to the debate through our facilitation. Reflexivity is important, and we recognise that our affiliations (as academics working on climate change and an NGO working on poverty reduction) and the nature of our funding streams (i.e. the 'Adaptation at Scale in Semi-Arid Regions' and the 'Tea Revitalisation' projects) themselves strongly framed the discussion. The outcome would surely have been different if we were health sector professionals, or even if we worked in the climate field but represented, for example, a multilateral bank. Therefore, every vulnerability assessment undertaken is itself framed for a purpose, which affects its outcome. Despite this, we sought to minimise this bias by framing the problem widely (as one of development and not exclusively of climate change) and by using our knowledge and experience to gently guide, rather than regulate, conversations.

Throughout the three workshops, we also consciously tried to promote discussions wherein stakeholders with the least power would have a safe and welcoming environment to speak, as well as enough time to do so. For example, we avoided using scientific jargon and encouraged speaking in mother tongue and using vernacular language among stakeholders. Translators were available to assist when language was an obstacle, and in cases where less powerful groups seemed more comfortable discussing their ideas in small groups and voicing their consensus through a neutral translator, rather than a group representative, this was done. This bottom-up, participatory approach is fundamental to the Vulnerability and Risk Assessment process. Through ongoing engagement beyond the workshop,

Table 1. Key aspects of Vulnerability and Risk Assessment workshops conducted in Botswana, Malawi and Namibia based on Hegga et al. (2016), Masundire et al. (2016) and Morchain et al. (2016).

	Botswana	Malawi	Namibia
Climate Focus	Semi-arid Bobirwa Sub-District Rural and pseudo-urban	Tropical Mulanje and Thyolo Municipalities Tea industry	Semi-arid Onesi Constituency in the Omusati Region Rural
Livelihoods	Commercial and small-scale/subsistence livestock and crop farming; Mopane caterpillars; vegetable trading; handicrafts; social grants	Tea industry: Smallholder (small scale) tea growing and commercial (estate) tea growing; community entrepreneurs; skilled and unskilled labour	Commercial and small-scale/subsistence livestock and crop farming; non-timber forest products (e.g.: mopane caterpillars and marula fruits); fish harvesting; handicrafts; social grants
Stakeholders	Policy makers; local and district government officials; NGOs; community leaders; farmers and mopane caterpillar harvesters; church group; community-based organisations; unemployed youth	Tea estate managers; international and domestic tea traders and retailers; national and district government; local police force; civil society organisations; union representatives; community members; NGOs	Onesi community, the traditional authority, Red Cross, the SCORE project, the Onesi Constituency Development Committee, the Onesi Constituency Office, Olushandja Horticulture Association, the Ministry of Youth, Sports and Culture, Ministry of Agriculture, Water and Forestry and Omusati Regional Council.
Selected vulnerabilities and some of the impact chain (partial list)	1. Drought → reduction in water, crop yields, fodder, mopane caterpillars & wildlife species. 2. Inadequate alternatives to agriculture-based livelihoods → fewer options for income generation.	1. Climate change → reduced: quantity and quality of tea produced, income, food security, access to water. 2. Low wages, harsh treatment and sexual harassment of tea	1. Drought → reduced: crop yields, fodder, water and grass, non-timber forest products. Increased: livestock mortality and loss of wildlife.

Table 1. Continued

	Botswana	Malawi	Namibia
	3. Foot and mouth disease → Extra time & cost of transportation to find new markets.	pluckers → poverty, food insecurity, victimisation 3. Ageing tea bushes → Low yields, low quality, reduced employment & income opportunities.	2. Flood → Increased: damage to infrastructure, water borne diseases, soil erosion, loss of life. Decreased: grazing, crop yields 3. Lack of access to climate information → compromised planning
Proposed responses (partial list)	1. Increasing awareness and uptake of drought management strategies 2. Developing marketing skills and education 3. Exploring and exploiting opportunities identified such as the abundance of groundwater for crop irrigation and bottling water for human consumption	1. Implementation of national climate change law and policy; provision of targeted weather & climate information 2. Creation of a Working Group to address sexual harassment; policy development on reducing harassment; training of workers in industrial & labour relations 3. Investment in research and development in the tea sector	1. Influence uptake of drought management strategies and access to water sources 2. Use of earth dams for flood control 3. Strengthening advice and options for seasonal climate information from extension officers

this type of approach can help to build trust, enhance the integration of knowledge and lead to creative and innovative solutions. The Vulnerability and Risk Assessment process enhances the degree to which stakeholders take ownership of the problem, because knowledge and trust is built from within the Knowledge Group itself. This increases commitment to jointly finding and implementing solutions, rather than the identification and implementation of solutions being driven by external facilitators/researchers.

Identifying and acting on potential contributions to transformation

The ambition behind conducting the Vulnerability and Risk Assessments in Botswana, Malawi and Namibia has not just been to understand vulnerability in a social-ecological landscape that faces both high impacts from climate and environmental change and considerable challenges around marginalisation and governance. These assessments aimed to take an initial step towards collaboratively identifying transformation pathways in development practices through adaptation responses. Because of the social learning principles in the design of the Vulnerability and Risk Assessment process there is a focus on learning from each other, seeing different perspectives and collectively finding solutions. We believe the process started to sow the seeds of transformation. Transformations that aim to shift behaviours, norms and practice need to be embedded and absorbed within social structures, and as such they exist as continually evolving processes; not as products. Notwithstanding, there are other transformations that can result from technological breakthroughs, which can indeed be categorised as products – e.g. a radically adapted seed. These types of transformations are, nevertheless, less relevant to this discussion. Much of the contribution to transformation that the Vulnerability and Risk Assessment workshops generated depended on their appropriate framing. These framings consisted of being deeply cognisant of power dynamics; seeing current problems in a holistic light; building new relationships and networks based on trust; and contributing to future change (also see Butler et al., 2016). Each one of these is described in more detail below.

Participation, power and agency

Participatory processes such as Vulnerability and Risk Assessment can shift dominant power dynamics (see Jernsand, 2017). One place where power imbalances often reveal themselves is in group settings, where there tend to be unspoken rules as to who gets to talk and who is listened to. In the Vulnerability and Risk Assessments, there was mostly a combination of external and internal facilitators, and each workshop was designed as a structured process that had both plenary and small group discussions. This meant that all participants were actively encouraged to participate. The facilitators managed to establish an atmosphere of mutual trust and respect, which encouraged stakeholders to express their views. This was

especially important given that the participants were from various backgrounds and not all were formally educated. One participant in Botswana reflected that '*this was an opportunity for different views to come together. Everyone was free to express themselves on any issue they wanted*'. Although some of the participants who were used to being listened to from their regular position of power tried to 'push' their opinions, others from the local villages, who might not normally say much in a context where there are government officials, managed to share valuable perspectives and were listened to. One stakeholder reflected that '*at the beginning of day 1 I didn't understand why mopane caterpillar harvesters* [who are predominantly female] *were sitting around this table. Now it is clear*'.

Through the carefully facilitated Vulnerability and Risk Assessment process, opportunities emerged across all three cases for power differentials to shift in small ways. This reflects a conscious effort to build agency of the least powerful (one key transformative capacity) by setting up processes for speaking 'truth to power' that can contribute to narrowing power differentials. In Namibia, an expert from the agriculture sector acknowledged that he was impressed with the '*wealth of knowledge and level of understanding of local farmers*'. This illustrated the potential to transform how government officials and experts perceive farmers' knowledge, and the possibility to open up new avenues for communication between groups that might otherwise have limited interaction with one another. Recognition of the value of local knowledge encourages knowledge co-production, power sharing and egalitarianism, which is necessary for transforming conventional decision-making processes.

Vulnerability and Risk Assessments are certainly not a solution for shifting power, but rather speak to one of the potential ways in which this might be achieved. Pushing the boundaries of existing structures of authority can be empowering, as evidenced by an elderly basket weaver who commented that '*I used to think my ideas weren't worthwhile. Now I think I can make changes in my life and I know it is possible*'. Once stakeholders became comfortable working together they found value in the participatory approach. One participant said: '*I've been thinking…the next time we should invite ourselves to each other's meetings rather than wait for people to come from far to do it*'. Indeed, participatory approaches that are initiated and facilitated internally are an important indicator of transformation.

Vulnerability and Risk Assessments can also serve to promote the agency of marginalised groups, as they raise awareness of people's challenges in a semi-public space, thereby increasing the understanding – and accountability – of authorities. This could lead to the rise of so-called 'champions' at different levels. One striking aspect of the Vulnerability and Risk Assessment process in Malawi was the issue of harsh treatment and sexual harassment of tea pluckers. This was at first rejected as not being relevant or pertinent enough for discussions related to risk and vulnerability – which reveals a narrow understanding of vulnerability – but was eventually recognised by everyone as a key aspect. This shift was enabled by genuine representation in the group, and by creating an environment whereby one of the least powerful groups, the tea pluckers, managed to freely convey the issue of

sexual harassment as fundamental to the industry's sound operation and sustainability. In doing so, they gained support from the representative of the Ministry of Labour who, from a position of power, managed to impel tea estate managers to agree to the formation of a multi-stakeholder working group to look into this issue in more depth. This outcome shows that the Vulnerability and Risk Assessment can also be a process whereby alliances are formed to push for a specific agenda to address vulnerability. It has also been found elsewhere that through collaboration, participants of such processes can have more power working together than individually (Brydon-Miller et al., 2003).

Shift in understanding the problem

Underpinning the conceptual frame of the Vulnerability and Risk Assessment is the opportunity for participants to develop a richer understanding of the ways in which current issues and hazards affect different social groups and (eco)systems in the landscape, and how these interactions may overlap and possibly exacerbate the impact. This exploration includes an analysis of how impacts might be best addressed, drawing on knowledge from all stakeholders in the group. It is not surprising, therefore, that the Vulnerability and Risk Assessments led to a shift in understanding the nature of the challenge at hand. As one of the participants in the Namibian Vulnerability and Risk Assessment said

> '*Through discussions I realized that it's the information that is needed. If all the people were here to hear what we have discussed it would be easier for us to deal with the changes in climate. I am impressed and surprised by the information [we got] – some of it I didn't know about.*'

In Namibia, the participants found the Impact Chain Analysis exercise to be particularly valuable. As explained by a government official from the Omusati Region, '*the part where we did the Impact Chain Analysis in groups was useful and interesting because I came to understand the problems arising from the hazards*'. This speaks to building the transformative capacity of changing how we view our relation to the natural environment (as described by Ziervogel et al., 2016) as a key factor that can suffer, but also contribute to supporting people's efforts to build their resilience. Because different social groups experience the impacts of hazards differently, according to their vulnerability, the process allowed stakeholders to understand the same issues from different perspectives.

In the Malawi case, the Vulnerability and Risk Assessment improved everyone's understanding of the impacts faced by the tea industry and how different groups and sectors are affected. In environments that lack strong foundations of representative governance, existing power holders tend to understand the meaning of sustainability of an industry – tea, in this case – almost exclusively from economic/financial perspectives, thereby overlooking important social aspects. The Vulnerability and Risk Assessment in Malawi showed that the industry's

sustainability has most often been measured according to domestic and macroeconomic indicators, while social risks have largely been ignored. Discussions around promoting a living wage for unskilled labourers tended to be dismissed with arguments that suggested the industry's profitability was more important. In this sense, the transformative element introduced by the Vulnerability and Risk Assessment was to find a way to foster a multi-stakeholder dialogue whereby the full spectrum of hazards and issues could be jointly identified, assessed and prioritised. The fact that 'sexual harassment and harsh treatment of unskilled workers' emerged as one of the four key hazards represented a breakthrough that pushed social issues up in the discussion about the tea industry's sustainability. As Few et al. (2017) indicate, lasting transformative change requires the reorganisation of governance structures that promote social justice. As seen in the Malawi case, such reorganisations can benefit from cross-sector partnerships among civil society, private sector (tea estates) and government (Ministry of Labour).

Through the Vulnerability and Risk Assessment process in Malawi, stakeholders became more aware of the importance of understanding the 'big picture' of the industry's sustainability, which they began to realise depends not only on its financial/economic productivity, but also on the wellbeing of its stakeholders. The emphasis on understanding the system holistically is definitely one of the important contributions that the Vulnerability and Risk Assessments made. However, a Vulnerability and Risk Assessment needs to be followed by a longer-term process, otherwise it is likely that participants will return to their former way of understanding climate impacts and adaptation.

Starting to see alternatives

Throughout the Vulnerability and Risk Assessment process, the Knowledge Group became increasingly comfortable with one another, with the process and with each other's points of view. Through this process, the diversity of Knowledge Group members' interests and knowledge led to new ideas on adaptation possibilities. These emerging alternatives to traditional ways of approaching development challenges is a key contribution of the Vulnerability and Risk Assessment towards transforming the mindsets of stakeholders through collaborative and cross–scalar ways of thinking.

In Namibia, the Vulnerability and Risk Assessment process helped the group to realise that there is a lack of self-organisation at the community level, and they learnt that being more organised could increase their resilience to drought. One adaptation idea that emerged in this case was that they could work together to set up a food bank mechanism at the traditional authority office. Each household could contribute 20 litres of *mahangu* (pearl millet) after each harvest, which would serve as a contingency plan for low rainfall seasons and contribute to communal food security.

In Malawi, the Vulnerability and Risk Assessment was valued because it promoted ways to revise the members' initial assumptions and to think beyond the

obvious threats and opportunities to the industry; i.e. from understanding progress based on the industry's financial competitiveness, to progress resulting from a combination of financial, social and environmental conditions. The Vulnerability and Risk Assessment provided the methodological approach to do this, as well as a solutions-oriented approach that enabled participants to come out of the exercise not just with newly identified problems and risks, but also with jointly generated ideas to move forward.

Building social networks across scales

In addition to being fundamental to action, relationship building is one of the most important outcomes of participatory processes (Ortiz Aragón & Glenzir, 2017). It is also essential for building the transformative capacity of social cohesion (see Ziervogel et al., 2016). In all three of the cases, the Vulnerability and Risk Assessment helped to forge new relationships between stakeholders, especially across different levels of governance. In Namibia, a member of the Constituency Development Committee said, '*I networked with different stakeholders including UNAM* (the University of Namibia, a tertiary institution) *and SCORE*' (a United Nations Developed Programme climate resilience project). This speaks to how the workshop linked people working at the local constituency level to those working on regional and national programmes and with national universities. A forestry officer at the Namibia Vulnerability and Risk Assessment specified how important it was to him to have '*networking and harmonization of multi-stakeholders to have one objective of addressing the issue* [of climate change]'.

In Botswana, the good results of the Vulnerability and Risk Assessment exercise in Bobirwa, together with strategic efforts by the University of Botswana, caught the attention of national level government officials, who proposed running a national level training in Mahalapye in August 2018 (which included a training on the methodology for district economic and district development officers from across the country). This provided a rare opportunity for Ministers and Directors to engage with planning officers and with marginalised groups to stress the importance of bottom up development and adaptation planning in a practical way. The sustained engagement of high level government personnel beyond the Mahalapye event, and the commitment of the trained district level officials from different parts of the country to support new Vulnerability and Risk Assessment processes (e.g. coming to co-facilitate one VRA workshop in Chobe District in January 2019) suggests an honest, meaningful buy-in by key decision-makers. In addition to developing new relationships, stakeholders who do not usually speak to one another were exposed to each other's views in a safe and informal space for dialogue. This helped not only in conveying information from the bottom up, but also from powerful stakeholders to those with less power. In Malawi, for example, tea pluckers appreciated learning about the bigger picture operation of the tea industry and all its complexities, which seemed to spark a sense of belonging and unity with the other people present.

Beyond the Vulnerability and Risk Assessment workshop

Adaptation responses often focus on discrete events and interventions aimed at reducing climate change risks, impacts and vulnerability. What is clear is that processes are just as important, particularly when more transformative changes are needed. As such, there are many conversations, activities, attitudes and structural arrangements that can either support or hinder transformation. Given that the two-day workshops were brief, the Vulnerability and Risk Assessment in itself did not constitute transformation of the system, although it did start to shift ways of working. Importantly, the Vulnerability and Risk Assessment process set in motion novel and alternative conversations and processes that can continue to build transformative capacities and support transformation goals.

In Botswana, a series of engagements emerged from the Vulnerability and Risk Assessment. The sub-district's economic planner attended the initial workshop and asked the team from the Adaptation at Scale in Semi-Arid Regions project to consider convening another Vulnerability and Risk Assessment workshop within the sub-district. He wanted staff to gain competence in running a Vulnerability and Risk Assessment process so that the sub-district council could use the methodology for future planning, with the intention of undertaking genuinely bottom-up development planning processes. This 'adoption' of Vulnerability and Risk Assessment as a planning tool by the sub-district management can be a significant contribution towards transformation, which crystallised in a national-level event where economic and planning officers from all districts of the country were trained on Vulnerability and Risk Assessment in August 2018 (with co-funding provided by the Government of Botswana). Subsequently, a national newspaper featured a speech by the Acting Minister for Presidential Affairs, Governance and Public Administration who endorsed the Vulnerability and Risk Assessment, saying that it made development planning participatory, representative and inclusive. This indicates high-level buy-in to the process, which is essential for transformation. Separately, the Adaptation at Scale in Semi-Arid Regions team was also invited to contribute to the District Development Plan by adding a chapter on climate change.

Another significant influence beyond the Vulnerability and Risk Assessment workshops was how the findings were shared through other platforms and arenas at both regional and sub-national levels. Coming out of the Namibian Vulnerability and Risk Assessment, a short video was made on the process. This was used for teaching in South Africa, the United Kingdom and the Netherlands in courses on vulnerability assessments and climate change and food security/development, more generally. In addition, the video was screened at the international Adaptation Futures conference in 2016, and a Vulnerability and Risk Assessment role play session was held to promote discussion on emerging vulnerability assessment approaches.

The findings from the Vulnerability and Risk Assessment workshops in Namibia and Botswana were also presented at the Africa Drought Conference

held in Windhoek, Namibia in 2016. This prompted further informal engagements amongst the Omusati Regional Council officials during the conference, co-organised by researchers from the Adaptation at Scale in Semi-Arid Regions project. This vertical interaction across scales is central to transformation, yet is often missing (Pelling et al., 2015). It also provided an opportunity to share a multi-faceted understanding of vulnerability that drew on social, environmental and economic concerns, experienced differently, depending on scale and goals.

In Malawi, a direct impact after the Vulnerability and Risk Assessment workshop was the intention expressed by the representative of the Ministry of Labour to revisit existing statutes that protect unskilled labourers in the tea industry from sexual harassment and harsh treatment and review their enforcement to date. Although it is difficult to assess direct causality, the Vulnerability and Risk Assessment process – understood as an element in the larger context of the Malawi Tea 2020 programme – is likely to have contributed to the promotion of gender equality in the tea sector, in the form of subsequent investments and alliances with Oxfam by large producers and retailers in the United Kingdom. On the other hand, this example also shows that the Vulnerability and Risk Assessment only initiated a moment of transformation. Dealing with the deeper causes that have led to these attitudes and abuses would require a continued process aimed at addressing the underlying factors (such as through discussions facilitated by the working group intended to be created after the Vulnerability and Risk Assessment).

Lessons learned and conclusions

The Vulnerability and Risk Assessment approach taken in Namibia, Botswana and Malawi served to build transformative capacities among stakeholders, including the three identified by Ziervogel et al. (2016), i.e. agency, social cohesion, and a new understanding of the relationship between people with ecosystems. The process enabled a crucial 'inward journey' at both individual and institutional levels. It also allowed possible adaptation actions to be identified and began paving the way for imagining more transformative opportunities that could jointly address both climate risks and broader developmental concerns.

Through the different workshop processes, new light was shed on how different hazards and risks play out in the three landscapes studied, how the impacts of these hazards manifest to affect social groups differently, and some of the underlying factors making people vulnerable. Because of the nature of the Vulnerability and Risk Assessment process, adaptation responses were explored in the context of the larger developmental challenge in the southern Africa region, and from a diverse range of perspectives. In so doing, the process allowed a shift in understanding climate change as a biophysical challenge alone, to understanding it as a social issue, largely determined by existing power and governance arrangements. It also emphasised the need to include a spectrum of knowledge sources to reach an optimal understanding of the problems at hand. Crucially, the Vulnerability and

Risk Assessments described here helped to identify and raise the profile of issues that had been previously unaddressed or not addressed sufficiently, but that nonetheless contribute to the vulnerability of least powerful groups. For example, the challenges of mopane caterpillar harvesters in Bobirwa; the sexual harassment and harsh treatment of unskilled labourers in the tea industry in Thyolo and Mulanje; and the lack of social and self-organisation preventing collective action at the community level in the Omusati region of Namibia, were all unearthed through the process. This indicates an early step toward transformation, in that it represents the advancement of social justice outcomes that could, in the longer term, increase the effectiveness of adaptation efforts.

Shifting power dynamics by promoting and creating alliances between relatively powerless and powerful actors across several levels of governance is a step towards enabling transformation. Alliances can be built so that issues affecting powerless groups can be acknowledged and addressed together with individuals and institutions with power, where previously these groups had no influence (e.g. the case of the Ministry of Labour in Malawi supporting the plight of tea pluckers). The three cases discussed in this paper also show that facilitating women's participation and enabling their voices to be heard by decision makers at higher governance levels is essential for securing social justice as a central objective of transformation in adaptation. It follows that connecting the outcomes of processes like the Vulnerability and Risk Assessment with higher levels of government and other influential stakeholders, including multilateral organisations, is often vital for the seeds of transformation to have a chance to germinate.

Although Vulnerability and Risk Assessment workshops can improve understanding of the problem, forge relationships between different scales and sectors and identify possible solutions in themselves, for transformation to be enabled there needs to be a continued process rather than a one-off workshop. In addition, such a process should be increasingly driven by stakeholders (e.g. local governments, civil society organisations), rather than by external organisations. This requires building the capacity and leadership of internal actors and organisations to convene, organise and facilitate such a process, which itself requires these actors to appreciate the value of investing their time in it. Ideally, for actions to be taken forward, leaders that can create and maintain a constructive atmosphere among participants, including beyond the workshop process, should be identified. The national level training of government officials in Botswana in August 2018 is illustrative of this: following the training, the trainees applied their new skills by running a Vulnerability and Risk Assessment in Mahalapye District. However, it became clear that ongoing support from the Vulnerability and Risk Assessment promoters (in this case the University of Botswana and Oxfam GB) would still be needed if the Vulnerability and Risk Assessment processes are to be repeated subnationally. In other words, stakeholders' reactions to the activity suggested their mindset had welcomed the principles of Vulnerability and Risk Assessment – and of transformation. However, even with a political mandate and will, such processes still need operational support.

The implications of Vulnerability and Risk Assessment-type processes are important to consider for development and climate researchers and practitioners. The first big change that is required is the way that people and organisations contribute to framing adaptation. Rather than esteeming 'expert' sources of knowledge and prioritising the biophysical elements of climate change, a more holistic and people-centred framing is needed. Second, it is important to recognise power and governance (including climate financing structures) as important shapers of both vulnerability and adaptation outcomes – and, subsequently, to include these as key determinants of climate and development research. Third, by acknowledging social justice and the principles of inclusivity, and making representation and fair participation standard to adaptation practice, researchers and practitioners could contribute to a genuine shift in what the sector values. In this way, adaptation efforts would centre on people, not on infrastructure and other technical fixes.

Truly participatory vulnerability assessments tend to be convened and facilitated by non-governmental or civil society organisations and are therefore rarely reported in peer-reviewed journals. Action research offers the opportunity to mainstream vulnerability assessments in academic circles, with a renewed appreciation that vulnerability assessments need to address social injustice and the climate change adaptation problem beyond a technocratic/biophysical narrative. By creating dialogue spaces, building social capital, confronting embedded practices and promoting learning, vulnerability assessments can help promote transformations in the face of complex challenges (Ortiz Aragón & Glenzer, 2017). Indeed, engaging in participatory processes that can shift narratives and power dynamics; allow marginal voices to be heard; build cross–scalar relationships; and enable people to see the need for systemic change and co-created alternative solutions, is an important step in better understanding and influencing the context in which such transformations can occur.

It is time for leading institutions in the climate change sector to recognise that achieving more socially just outcomes from adaptation efforts requires transforming the approaches they have so far pursued, even though this may risk their current influential positions. Indeed, it would be disingenuous to call for transformation in the sector, while expecting at the same time to preserve intact the roles and privileged positions of power of researchers, practitioners, and members of multilateral and donor institutions. Transformation, after all, also requires looking inwards and being willing to dissent and disrupt an existing order that largely disregards justice in climate change adaptation.

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translating. We welcome and invite your comments and reactions at our action research community's interactive ARJ blog housed at AR+ http://actionresearchplus.com

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References

Bradbury, H. (Ed.). (2015). *The SAGE handbook of action research* (3rd ed.). Los Angeles, CA: SAGE.

Brydon-Miller, M., Greenwood, D., & Maguire, P. (2003). Why action research? *Action Research*, *1*(1), 9–28. Retrieved from https://doi.org/10.1177/14767503030011002

Burch, S. (2010). Transforming barriers into enablers of action on climate change: Insights from three municipal case studies in British Columbia, Canada. *Global Environmental Change*, *20*(2), 287–297. Retrieved from https://doi.org/10.1016/j.gloenvcha.2009.11.009

Burns, D., Harvey, B., & Ortiz Aragón, A. (2012). Introduction: Action research for development and social change. *IDS Bulletin*, *43*(3), 1–7.
Retrieved from https://doi.org/10.1111/j.1759-5436.2012.00318.x

Butler, J. R. A., Suadnya, W., Yanuartati, Y., Meharg, S., Wise, R. M., Sutaryono, Y., & Duggan, K. (2016). Priming adaptation pathways through adaptive co-management: Design and evaluation for developing countries. *Climate Risk Management*, *12*, 1–16. Retrieved from https://doi.org/10.1016/j.crm.2016.01.001

Chung Tiam Fook, T. (2017). Transformational processes for community-focused adaptation and social change: A synthesis. *Climate and Development*, *9*(1), 5–21. Retrieved from https://doi.org/10.1080/17565529.2015.1086294

De Vente, J., Reed, M. S., Stringer, L., Valente, S., & Newig, J. (2016). How does the context and design of participatory decision-making processes affect their outcomes?

Evidence from sustainable land management in global drylands. *Ecology and Society*, *21*(2), 24. Retrieved from https://doi.org/10.5751/ES-08053-210224

De Wit, S. (2018). A clash of adaptations: How adaptation to climate change is translated in northern Tanzania. In S. Klepp & L. Chávez-Rodríguez (Eds.), *A Critical Approach to Climate Change Adaptation: Discourses, Policies and Practices* (pp. 107–124). London: Routledge.

Few, R., Morchain, D., Spear, D., Mensah, A., & Bendapudi, R. (2017). Transformation, adaptation and development: Relating concepts to practice. *Palgrave Communications*, *3*, 17092. Retrieved from https://doi.org/10.1057/palcomms.2017.92

Hegga, S., Ziervogel, G., Angula, M., Spear, D., Nyamwanza, A., Ndeunyema, E., Morchain, D. (2016). *Vulnerability and Risk Assessment in Omusati Region in Namibia: Fostering people-centred adaptation to climate change*. Cape Town, South Africa: Adaptation at Scale in Semi-Arid Regions (ASSAR), University of Cape Town.

Jernsand, E. M. (2017). Engagement as transformation: Learnings from a tourism development project in Dunga by Lake Victoria, Kenya. *Action Research*, *15* (1), 81–99.

Kates, R. W., Travis, W. R., & Wilbanks, T. J. (2012). Transformational adaptation when incremental adaptations to climate change are insufficient. *Proceedings of the National Academy of Sciences of the United States of America*, *109*(43), 7156–7161. Retrieved from https://doi.org/10.1073/pnas.111552

Masundire, H., Morchain, D., Raditloaneng, N., Hegga, S., Ziervogel, G., Molefe, C., Omari, K. (2016). *Vulnerability and Risk Assessment in Botswana's Bobirwa sub-district: Fostering people-centred adaptation to climate change* (pp. 61). Cape Town, South Africa: Adaptation at Scale in Semi-Arid Regions (ASSAR), University of Cape Town.

Morchain, D. (2018). Rethinking the framing of climate change adaptation: Knowledges and politics. In S. Klepp and L. Chávez-Rodríguez (Eds.), *A critical approach to climate change adaptation: Discourses, policies and practices* (pp. 125–144). London: Routledge.

Morchain, D., & Kelsey, F. (2016). *Finding ways together to build resilience: The Vulnerability and Risk Assessment methodology*. Oxford, England: Oxfam. Retrieved from https://policy-practice.oxfam.org.uk/publications/finding-ways-together-to-build-resilience-the-vulnerability-and-risk-assessment-593491

Morchain, D., Prati, G., Kelsey, F., & Ravon, L. (2015). What if gender became an essential, standard element of Vulnerability Assessments? *Gender and Development*, *23*(3), 481–496. Retrieved from https://doi.org/10.1080/13552074.2015.1096620

Morchain, D., Weinmann, W., Kachepa, C., Jeans, H., Lefu, H., Mtegha-Kawamba, L., & Thole, E. (2016). *MALAWI 2020 Vulnerability and Risk Assessment in the tea industry*. Oxford, England: Oxfam.

O'Brien, K. L. (2016). Climate change and social transformations: Is it time for a quantum leap? *Wiley Interdisciplinary Reviews: Climate Change*, *7*(5), 618–626. Retrieved from https://doi.org/10.1002/wcc.413

Ortiz Aragón, A., & Glenzer, K. (2017). Untaming aid through action research: Seeking transformative reflective action. *Action Research*, *15*(1), 3–14. Retrieved from https://doi.org/10.1177/1476750317700253

Pelling, M., O'Brien, K., & Matyas, D. (2015). Adaptation and transformation. *Climatic Change*, *133*(1), 113–127. https://doi.org/10.1007/s10584-014-1303-0

Preston, B. L., Yuen, E. J., & Westaway, R. M. (2011). Putting vulnerability to climate change on the map: A review of approaches, benefits, and risks. *Sustainability Science*, *6*(2), 177–202. Retrieved from https://doi.org/10.1007/s11625-011-0129-1

Ravon, L. (2014). *Resilience in times of food insecurity: Reflecting on the experiences of women's organizations*. Ottawa: Oxfam Canada. Retrieved from http://go.oxfam.ca/docs/resilience-women-organizations-2014-09-en.pdf

Tschakert, P., van Oort, B., St. Clair, A. L., & LaMadrid, A. (2013). Inequality and transformation analyses: A complementary lens for addressing vulnerability to climate change. *Climate and Development*, *5*(4), 340–350. Retrieved from https://doi.org/10.1080/17565529.2013.828583

Ziervogel, G., Cowen, A., & Ziniades, J. (2016). Moving from adaptive to transformative capacity: Building foundations for inclusive, thriving, and regenerative urban settlements. *Sustainability (Switzerland)*, *8*(9), 955. Retrieved from https://doi.org/10.3390/su8090955

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