Role clarification for local institutions: a missing link in multi-level adaptation planning? Insights from a multiple case study in Botswana

Obakeng A. Sethamo, Sylvia Karlsson-Vinkhuyzen & Marie K. Harder

Published online: 06 Jun 2021.

Submit your article to this journal ⬚

Article views: 84

View related articles ⬚

View Crossmark data ⬚

Taylor & Francis
Taylor & Francis Group

RESEARCH ARTICLE

🔓 OPEN ACCESS ✓ Check for updates

Role clarification for local institutions: a missing link in multi-level adaptation planning? Insights from a multiple case study in Botswana

Obakeng A. Sethamo [a,b], Sylvia Karlsson-Vinkhuyzen [c] and Marie K. Harder [a,d]

aDepartment of Environmental Science and Engineering, Fudan University, Shanghai, People's Republic of China; bSouthern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL), SADC, Windhoek, Namibia; cPublic Administration and Policy Group, Wageningen University and Research, Wageningen, Netherlands; dSchool of Computing, Engineering and Mathematics, University of Brighton, Brighton, UK

ABSTRACT

The meaningful engagement of community-based actors in climate change adaptation planning is crucial for effective plans, but achieving it is an ongoing challenge, even with participatory methods. In this paper we explore very different approach, using shared-values crystallization as a pre-process to standard vulnerability risk assessments (VRAs), which recently reported significant impacts on plans produced. We posit this could be due to learning via changed local perceptions of roles, and we use multiple-case study work with five Village Development Committees (VDCs) in North East District, Botswana, and examine VRA outputs, and pre- and post-VRA interview transcripts, for evidence. Findings indicate that VDC members who took part in the shared-values pre-process significantly clarified and prioritized their general roles, and subsequently engaged more deeply in the planning process, taking more responsibility and ownership for the final adaptation plans. They related climate risks to their local lived-realities better, producing quality action plans, funding innovations and mainstreaming of adaptation into wider local plans, alongside an eagerness to present ideas to higher-governance levels. These findings suggest the shared-values pre-process could be immediately valuable for multilevel adaptation planning practices, and that the concept of role clarification deserves more specific consideration in academic studies on participation.

1. Introduction

Climate variability and extreme events are known to affect African countries in many ways, through effects of increasing variability and uncertainty on agricultural, pastoral, fishing and forestry resources that form the main livelihoods of the rural population (IPCC, 2014). This variability makes local-level solutions to adaptation key, and adaptation policy implementation is considered unlikely to be successful without the strategic involvement of decentralized institutions, local development planning and use of participatory approaches (Kok et al., 2007). There is still a considerable need for a supportive policy framework at particularly national (but also regional and international) level, to provide relevant information and resources. Therefore, a multilevel approach that capitalizes on the capacities of both national and local level actors is key for success. However, the salient decisions impacting on coping with adaptation are usually made at the local level on a daily basis (Elwell, 2009). It has been suggested (Khatri et al., 2013) that adaptation planning requires an increase in the capacity of local government, in particular, to coordinate the activities of community-level groups and to provide local leadership towards adaptation planning. Dhungana et al. (2017) caution the current insufficiency of local-level involvement is undermining the voice of vulnerable and marginalized

groups, resulting in less ownership for them and less embedding of their perspectives into local plans. To remedy these concerns Jones and Boyd (2011) suggested an increased focus on a better understanding of the diversity and complexity of social barriers to planning adaptation at the local level, and the deeper consideration of how higher levels of governance could incorporate local adaptation priorities.

Adaptation planning is not only of relevance to local government: communities comprise various groups, and many of those will have non-trivial roles to play. Local efforts towards general development will, in general, be considerably hampered by the risks from climate change, and therefore increased capacity, voice and influence of low-income and vulnerable group members are needed to pinpoint the issues. Their stronger partnership with local governments will benefit adaptation (IPCC, 2014). Sherman and Ford (2014) and Ojha et al. (2016) have demonstrated that community involvement in adaptation planning can result in greater effectiveness, efficiency, equity, flexibility, legitimacy, sustainability and replicability – which are all integral to the successful implementation of subsequent adaptation actions. Local buy-in has also been shown to be crucial: when public values and views fail to be taken into consideration in decisions on climate risk management, problems are created in communication and implementation (Lorenzoni & Pidgeon, 2006).

The success of lower-tier government institutions in leading local adaptation will hinge on their ability to facilitate local actors effectively (Ensor, 2014), and this can only be done if they are involved in assessing the local vulnerability of livelihoods, setting priorities and mobilizing resource. Some authors report that key aspects of adaptation can only be developed through approaches which make use of a local lens to consider local experiences, perceptions and values – but that these are difficult to incorporate in top-down approaches (Boyd & Charles, 2006) led nationally. Ouma et al. (2017) observed that community-led local-level institutions make it easier to identify environmental risks faced by rural populations, and the local cultural responses and social configurations that could facilitate individual and collective adaptation. Some local government institutions already have this role for general development actions, but they might not associate it with planning for climate change adaptation. Yet, active local engagement would improve consideration and input of key contextual factors such as the geographic local needs, and knowledge (Pradhan et al., 2014) compared to solely top-down approaches. Thus far, this critical role for local institutions in adaptation planning has not been emphasized: there is instead a general perception of climate change being an 'unknown' topic that only experts from upper government can deal with and lead.

In some countries such as Nepal and Botswana, Village Development Committees (VDCs) provide potential pathways for the incorporation of adaptation planning into local goals for sustainable development. These committees are mandated to facilitate the implementation of government policies at the local level, and they already lead village-level planning for more general sustainable development. In principle, they have the potential to input local ideas into higher-level plans concerning their local regions, and possibly going on to influence at the national level (Adhikari & Taylor, 2012). Therefore, an understanding of how these institutions currently identify, recognize and respond to climate stressors is very instructive, to better-design future adaptive responses to climate change (Matthews, 2013). Regmi and Star (2014) showed that the meaningful participation of stakeholders such as VDCs in adaptation policymaking is needed before they can execute their role. Their experiences with local communities in Nepal revealed that where the role of community-led institutions is not clarified, adaptation actions that are developed even with their engagement fail to be implemented - because even though local priorities have been identified, there was no clear understanding of whose role it was to move them forward. Conversely, it is posited that if the process of developing adaptation plans could be improved to contain more meaningful engagement of the VDCs, then this might help to unlock and harness the adaptive potential of the community (Adhikari & Taylor, 2012). Poor engagement at the bottom-most level results in impoverished input upwards for district and then national plans, which then rely instead on templates for use as core content. This problem has already been noted in widespread reviews of the National Adaptation Plan of Action (NAPA) documents being received by the United Nations Framework Convention on Climate Change (UNFCCC) from many countries: they indicate that the design and implementation of currently reported adaptation plans have the severe limitation of minimal participation of local institutions (IFAD, 2014).

The literature reviewed above includes a varied vocabulary of 'engagement', 'involvement', 'participation', along with adjectives like 'minimal' and 'meaningful'. There is no standardization of this vocabulary: there are many typologies of participation such as by degree, by outcome, by process, by function (e.g. as reviewed by Reed, 2008), by depth and breadth (Harder et al., 2013). The focus in this paper is the widespread issue of insufficient meshing between the local levels of government and community-level actors in adaptation planning: planning which fundamentally requires a two-way flow of information so that local planners are made aware of the concept of adaptation, and that higher-level institutions are made aware about local priorities which are affected. This is an established bottleneck in many countries worldwide for progress towards the national adaptation plans so urgently desired. There is thus a need to somehow strengthen multilevel governance, complete with such two-way, meaningful engagement: such bottom-up and top-down planning mechanisms will bring great benefits (Dube & Sekhwela, 2008) and address reported challenges like lack of community ownership, engagement and local relevance (Ojha et al., 2016). In this paper, we will use the term 'meaningful' engagement to denote such two-way exchanges.

These concepts of, and known needs for, meaningful engagement, are not new. A family of participatory methods has been developed over years to try to achieve them (Chambers, 1994), and the VRAs are themselves considered to be good examples of participatory approaches. Yet, the UNFCCC reviews of NAPAs do not indicate success (IFAD, 2014). Other authors stress an alternative approach to this focus on participation: to focus instead on enablement of *learning and transformation*, and governance structures and dynamics that support those (e.g. Lynch & Brunner, 2010; Van der Wal et al., 2014). We posit that this approach requires a conceptual change of emphasis from policy implementation and governance mechanisms, to *learning and transformation at the local governance level*, which is where front-line action against climate change must occur in the end. If there could be such a transformational shift in the perceptions of local governance groups e.g. of their potential role in adaptation planning, then this could be synonymous with sensitization to the local relevance of climate change, and thus the natural embedding of local priorities in the plans. It is the potential impact of such a shift in perceptions and local relevance for adaptation governance that we wish to investigate in this paper.

In this work, we investigate the impact of using a specific approach which is known to produce transformational shifts in perspective (Harder et al., 2021) albeit without certainty as to the *type* of the shift. It is a values-based approach, which works by enabling members of any kind of groups who have a history of working to crystallize their own local shared values and priorities, *in-situ*. It is known as *WeValue InSitu* (Sethamo et al., 2020), and seems to trigger groups to re-prioritize their goals, and to interface better with other stakeholders and groups. In this study, we will use it with four VDCs to specifically investigate what *type* of perspective shift

has occurred, and to identify direct connections with local adaptation plans made the following day. In this way, it is hoped that better understanding can be obtained of specific mechanisms which facilitate meaningful engagement with local institutions. This work took place in the North-East District of Botswana.

Below we first outline Botswana's policy landscape, the current role of the VDCs and our objectives, and then outline our methods to study the impact of the shared-values pre-process and resulting data. The analysed data are then discussed with respect to the issue of meaningful engagement, and conclusions drawn within limitations.

2. Policy background

2.1. Botswana's climate change policy landscape

Botswana is a country highly vulnerable to the negative impacts of climate change across many of its ecological and economic sectors, and yet until lately it had quite an underdeveloped policy framework when it comes to addressing them. It is paramount to strengthen the resilience of economic sectors, communities and institutions to enable them to adapt to changing climate scenarios. To facilitate a coherent and coordinated approach for effective implementation of adaptation and mitigation actions, in 2019 the Government of Botswana finalized the formulation of the National Climate Change Response Policy (NCCRP) (MENRCT, 2016). The NCCRP provides a framework for mainstreaming climate change considerations into national macroeconomic policies and sectoral policies as well as planning and budgeting of development initiatives. The NCCRP recognizes the role of local institutions and structures in climate action by stating that the traditional leadership and district management authorities (local councils, district administration offices, VDCs) shall take the lead in raising awareness of sustainable climate change response measures and environmental protection measures that could enhance rural livelihoods. It emphasizes the need for capacity-building initiatives that could develop the necessary expertize to implement the required climate change actions (MENRCT, 2016).

Botswana's policy developments for climate change issues build directly on previous work in the broader landscape of sustainable development within the Botswana Vision 2036 (Vision, 2036 Presidential Task Team, 2016). This called for government planning and decision making to take cognizance of relevant vulnerabilities, and to provide for the implementation of appropriate mitigation and adaptation measures. Closely linked to it, is the National Development Plan (NDP) which uses the SDGs and the Paris Agreement as its major planning reference documents. According to the NDP 11 of 2017 (GoB, 2017), Botswana is acknowledged as highly vulnerable to the negative impacts posed by climate change across many of its ecological zones and economic sectors. The Plan suggests that an improved understanding of existing climate–society–environment interactions will provide insights into the country's specific vulnerabilities, and potential adaptive capacities, to deal with these threats.

An important set of documents for understanding Botswana's position on adaptation are the national communications to the United Nations Framework Convention on Climate Change (UNFCCC). These are used for the exchange of information on how each country is implementing the Convention and for highlighting the issues, problems, gaps and constraints faced in the process (UNFCCC, 2002). Altogether, these communications document the stages of Botswana's journey towards climate action. In these documents, it is clear that the government recognizes the importance of climate policies as a tool for improved action. The first communication (MWTC, 2001) argued that Botswana needs assistance in developing and assessing the effectiveness of various policy options and instruments for combining climate change and sustainable development goals. The second communication (MEWT, 2012) placed the blame for non-action on the low level of awareness by policy makers, inappropriate institutional structure, inadequate manpower and inadequate policy framework, while the third communication (MENRCT, 2019) raised concerns about inadequate mainstreaming of climate change.

In anticipation of the National Adaptation Plan (NAP) process the government commissioned the National Adaptation Plan Framework (NAPF) (MENRCT, 2020). One of the NAP objectives by the UNFCCC (2011) is to facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities within all relevant sectors and at different levels. And in particular, into wider development planning processes. This NAP approach enables developing countries to undertake tailored country-driven comprehensive approaches and to build and continuously strengthen adaptation planning. Botswana's NAPF employs the concept of vertical integration, defined by Daze et al. (2016) as a 'process of creating intentional and strategic linkages between national and sub-national adaptation planning, implementation, and monitoring and evaluation'. It was recognized, that to be effective in Botswana in reducing community vulnerability to climate change, all stakeholders from the national (cabinet, Parliament, ministries, departments) to sub-national (district), and then village levels – including civil societies and private sector-need to play an active role in design and implementation of NAP-based programmes (MENRCT, 2019).

This approach is evident in the Botswana Climate Change Strategy and Action Plan (BCCSAP), developed in parallel to the NCCRP as an implementation vehicle of the policy, which reiterates the importance of local communities and institutions (MENRCT, 2018). In its climate change planning framework, the BCCSAP introduces Climate Change Sub-Committees within the Village Development Committee structure: 'In order to ensure integration and mainstreaming of climate change into development activities at the ground and community level, Village Development Committees should also have a sub-committee (or at least one designated member) to focus on climate change implementation'.

Notwithstanding this systematized commitment from the government to advance climate action, the engagement of local structures has been a challenge. Engagement efforts have typically been pursued through traditional participatory methods (Chambers, 2008; Uddin & Anjuman, 2014), but

these are generally increasingly seen as tokenistic and ineffective gestures borrowed from development practitioners, which do not gain local ownership (Uddin & Anjuman, 2014). These challenges are synonymous with the general situation in Botswana where there is a reliance on top-down approaches that do not effectively engage local institutions in decision-making or mobilization of local resources (Dube & Sekhwela, 2008).

It is clear that local institutions such as the VDCs in Botswana are not yet enabled to play their full role in climate change adaptation, because of both internal and external challenges (Ampaire et al., 2017). Without more careful attention to how VDC knowledge and leadership can be better mobilized for decision-making, adaptation initiatives risk having low local relevance, giving rise to unintended maladaptive consequences (Haque et al., 2017). Before introducing our approach, we outline the current VDC situation in more detail below.

2.2. The current role of VDCs in Botswana

VDCs were set up in several countries in response to increased calls to allocate greater roles in governance for local organizations, operating on 'participatory' or even 'democratic' principles (World Bank, 1989). Generally, in countries where VDCs are operational, they are a form of decentralization whose potential benefits include reduction in the bureaucracy associated with planning and coordinating at central levels; improved responsiveness to local demands; a mechanism for officials familiar with local-level problems to tailor development plans; the greater representation of political, religious, ethnic and tribal groups in formulating development plans; and enhanced systems for public accountability (Cheema & Rondinelli, 1983; Smith, 1985). They are a natural-level governance unit to complement the District Offices, which oversee tens of villages which contain much diversity of needs, but provide a filtered link to national offices.

Realizing the political, economic and administrative significance of decentralization, Botswana has promoted local government and decentralization in its democratic set-up through the creation of statutes for devolution, as well as via de-concentration (administrative measures without resorting to statutes) (Sharma, 2012). Village-level planning involving local community members is considered crucial in development planning, and the VDC is a community participatory structure central to that (Maphosa et al., 2019). Development proposals from village participatory planning can be taken upwards to inform both district and national rural development planning policy and strategy (Sharma, 2010).

VDCs were established in Botswana by a Presidential Directive, 1968 (MLG, 2008), for the purpose of implementing development programmes in villages. VDCs are charged with responsibility for all village-level development issues, and to foster collaboration between the government and community members. An important point to note here is that, although the institution of the VDC is formal, and linked to the implementation of District government policies, the VDC consists of local persons nominated from the community through a democratic process. They typically number 10–15 persons, comprise two representatives of young people and a balance of men and women, with a tenure of 3 years. All are literate and some are former civil servants. VDCs coordinate the activities of all other village institutions. Functions typically include to (MLG, 2008):

- identify and discuss local needs;
- help villagers prioritize their local needs;
- formulate proposals for solutions;
- determine the extent to which the people can satisfy their identified needs on self-help basis;
- develop a plan of action for their village;
- solicit assistance of donors and development agencies;
- mobilize the community and its institutions for development action;
- provide a forum between village leaders, politicians and district authorities to enhance the flow of development information; and
- represent villagers in development matters, and act as a source and referral point for village development

2.3. Formulation of the research question

In principle, the VDCs seem to be the perfect mechanism to enable optimal intermeshing between top-down initiatives and bottom-up priorities. Both the NCCRP and the BCCASP had these expectations of them, and conversely, it would be difficult to imagine adaptation planning of any quality proceeding without good VDC involvement. However, the ongoing implementation of VRAs across Botswana has so far resulted in local plans which are heavily based on the UNFCCC templates, with little local differentiation. This strongly suggests that the adaptation practitioners sent to the VDCs are not getting useful local input, or engagement.

The *WeValue InSitu* approach had been previously trialled in an adaptation development context in an exploratory study (Sethamo et al., 2020) in Botswana. The results suggested it was responsible for the production of good quality Local Adaptation Plans enriched with much locally relevant information, by increasing their relevance, and thus local participation and ownership. The results also produced unexpected anecdotal indications that the VDCs developed new and strong intentions for taking adaptation actions forwards, and this led to the more-defined research question studied here: did the VDCs' perceptions of their own roles, in relation to adaptation planning, *change due to the values-based crystallization pre-process*? If so, in what way? In this study, the focus will be on any changes in role perceptions, and their links to the values-clarification process.

3. Methods

This study is necessarily intrinsically qualitative in nature. This is because the approach being studied, *WeValue InSitu,* is an ethnographic-style approach involving a facilitated process of eliciting tacit knowledge, and providing a scaffolding' for participants to develop their own articulations or 'translations' into explicit statements. The process itself ensures high face

validity (Harder et al., 2014) and pre- and post-interviews allow close comparisons, as does the use of a comparator village using a 'control' approach.

The core research design includes taking VDCs separately through the *WeValue InSitu* values-crystallization approach, promptly followed by a standard vulnerability risk assessment (VRA) which produces their local adaptation plan. Pre- and post-

event focus group interviews are taken immediately before and afterwards, designed to allow identification of areas of perspective shifts. Figure 1 gives a schematic of these.

The study was designed as a multiple case study (Yin, 2009) of five VDCs in the Northeast District of Botswana. The purpose is to explore the VDC members' perceptions of their role and responsibilities in climate change adaptation planning for their village: in particular whether these role perceptions changed after undergoing a crystallization of their shared values, and if so, how that might have impacted their local planning.

All of the research events took place within a wider, nationwide government adaptation planning programme whereby VDCs had one full-day session of a standard VRA. The VDCs were chosen with the assistance of the District Commissioner's office as a not-untypical convenience sample of those due to take part. Anonymity of the village and participants was agreed within the informed consent which all participants confirmed. The ethical considerations for this work were pre-approved by the HSSE Research Ethics and Governance Committee of the University of Brighton, reference ID REGC-15-022.R1, and relevant research permits were obtained from government authorities in Botswana. which involves providing participants with information about specific climate change risk types, and facilitated discussions on how each might apply in the village, who is vulnerable to them, and what plans could be made to adapt for these risks. These discussions produce the content used in the formal VRA Reports, and the planning ideas are documented as basic Local Adaptation Plans and submitted to the District government.

The values-based approach took place on Day 1. The *WeValue InSitu* approach was the particular process described in Sethamo et al. (2020); as a scaffolding to assist participants to first crystallize and then articulate the less-tangible, values-based aspects of their village work which are important to them, in their own terms (Podger et al., 2010; Moreno et al., 2020). It is a design-based process conceptualized by its developers in terms of now-standard activities of photo-elicitation, triggering and negotiation of shared values, and framework construction (Brigstocke et al., 2017; Harder & Burford, 2018). In more detail: photos and then bespoke localized 'trigger statements' are used to encourage participants to reach for examples from their tacit experiences. Then, their collectively generated clusters of examples of what is important and valuable to them as a committee assisting the village, are iteratively articulated increasingly well through facilitated discussions, each time producing values statements of agreed local meaning and wording (Harder & Burford, 2018). These statements are later physically arranged on the table by the participants to

show how they link to form three levels: their 'base foundations', 'how we work' and 'our vision'.

On Day 2, a VRA process was undertaken. A VRA is a common consultative process in adaptation planning used to solicit input from key stakeholders and/or the general public (Mullan et al., 2013), almost always led by outsiders with pre-researched ideas of what specific content should be consulted on. As well as improving the quality of policy making, the VRA process is considered to be a useful mechanism for raising awareness and interest amongst key groups (Mullan et al., 2013), with latent potential to be a powerful source of local mobilization of adaptation. In this case, participants were taken through a standard VRA process (Masundire et al., 2015) which includes the introduction of climate hazards and issues in the local context. This is followed by group identification of locally relevant climate issues, assessment of levels of exposure and sensitivity, adaptive capacity analysis, and the building of a village adaptation planning framework.

Opportunities to collect interview data for evidence of perspective shifts had to be designed carefully (shown schematically in Figure 1). The researchers did not wish to bias the participants towards the research question about perceptions of roles for climate change planning, and so participants were asked about the wider context of their work, and only explicitly about climate-related roles if the topic came up naturally. Two opportunities for such information to be offered up within a more general context were thus designed. First, information on 'baseline perceptions' was obtained by asking participants when they first assembled at the start of Day 1 to describe their work as a VDC. This focus-group interview was audio-recorded with informed consent, and any mentions or contradictions of roles for adaptation were then extracted from the transcripts via grounded thematic coding. Secondly, information on 'post-event' perceptions was obtained at the very end of Day 2 (see Figure 1) when both VRA+ *WeValue* processes had been completed. VDC members were asked, in focus-group mode, if they saw connections between the two processes of Day 1 and Day 2, and in answering this question, participants revealed information not only about perceived roles, which commonly had shifted, but also indications of *why* they had shifted over the two days. These interviews were audio-recorded and transcribed for analysis (via grounded thematic coding).

One of the five villages was randomly nominated as the comparator 'control' case – it was the third chronologically, thus labelled VDC#3 here. For that VDC, the *WeValue InSitu* approach was not used: only the VRA processes (thus only one day in total). One of the authors visited the villages between January and March 2018 to engage in pre-study consultations with the communities which included agreements on research schedule, clarification of expectations from both sides, and the VRAs with or without the WeValue sessions. All focus group discussion interviews were taped, transcribed and translated into English.

It should be noted that a separate but parallel study took place at the same time: the VRA Reports produced were themselves rigorously evaluated in an experimental design investigation to determine whether their quality – objectively
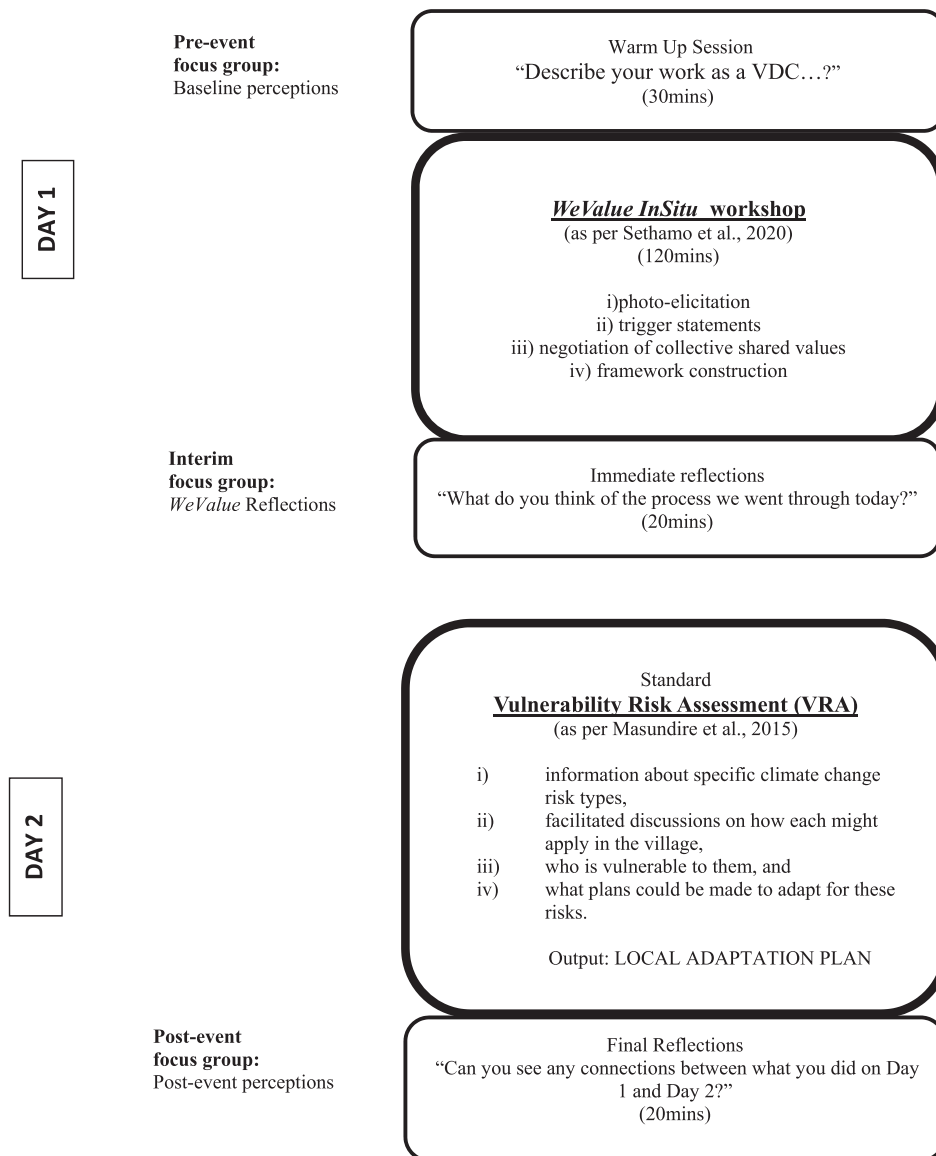
Figure 1: Schematic of the events and data-collection methods.

evaluated via a tool – was affected by, and causally linked to, the values-based pre-process. Those VRA Reports are not considered in this work except to search for counter-evidence to our findings about the specific topic of VDC role clarification.

4. Results

In this section, the outcome of the VDC reflections on their 'perceptions of their roles and responsibilities' in climate change adaptation planning is summarized. Overall, the results indicate that where the shared-values pre-process is used with VRAs, VDCs are able to clarify their role, causing shifts in self-perceptions, and have a strong willingness to be engaged in the adaptation planning process at the community and local government level. In the one village where the VRA process did not use the shared-values pre-process, VDCs struggled with role clarity in the context of adaptation planning, and showed unwillingness to take on associated responsibilities.

4.1. The VDCs undergoing the values-based pre-process

4.1.1. VDC#1,2,4,5 early reflections about their role in adaptation planning

Before the start of the core *WeValue InSitu* process on Day 1, participants were asked: 'What is your perception about the VDC's role in climate change adaptation planning?'. Table 1 shows responses. They suggest that VDC members are not certain about their role or responsibilities, but without suggesting that they are opposed to any particular role. They clearly understand that their current role is to lead development planning in the village. These were common across all the villages, which reiterated that their committees are the custodians of community development, which includes community engagement on planning and monitoring of projects to support the livelihoods of vulnerable members of the community. But currently, this scope of responsibilities was not reported to include climate change adaptation.

Table 1: VDC#1,2,4,5 'Baseline' information. Responses to the questions: 'What are the jobs of your VDC' and, as a minor question when appropriate, 'Does your VDC do anything for climate action at the moment?' immediately after they have introduced themselves on Day 1 (i.e. before the core *WeValue InSitu* Session).

VDC	Comments made
VDC#1	'I cannot really say the VDC has been doing anything on climate action because we have not been trained to do so. We only come across issues of climate change on the television and maybe through the radio. It is not what we do in the village'.
VDC#2	'We have not been addressing these. We really do not understand how these affects our livelihoods and how we are supposed to respond to them … According to the VDC act we have the right to be involved but we have a challenge that we do not have the capacity and the resources'.
VDC#4	'The VDC is only responsible for coordinating and leading village development … the VDC is responsible for development plans that are then submitted to the district council … mostly we take care of the care of destitute persons, provision of accommodation to civil servants, implementation of community development projects and poverty relief programs'.
VDC#5	'Ours is to ensure the VDC is accessible to everyone and that developments are spread equally across the village … we are representing the interest of the people … we facilitate development through the ideas that we get from the people'.

From our open questions, we learned that the VDCs are currently not receiving any support in terms of capacity building to help them understand their specific roles in local planning for adaptation. As volunteers, members of the VDCs have expectations for support and motivation via training opportunities. They would like to receive follow-up training, and to be engaged in sharing the new knowledge with other community institutions and members who would be key stakeholders (such as farmers, or certain businesses). And they would like to meaningfully participate in the adaptation planning process with input to the higher-level, District Council, which currently does not have meaningful engagement with them.

4.1.2. VDC#1,2,4,5 'Post-event' data concerning changes in perceptions of roles in adaptation planning

During Day 2, the 'experiment' VDCs #1,2,4,5 (comprising the same participants as Day 1), were each taken through the VRA process, and at the end, they were collectively asked once more, what they felt the VDC roles were for adaptation planning.

The results are given in Table 2 and indicate clear changes in the (same) VDC participants' perceptions. Although given by individuals, they can be considered to reflect the collective meaning-making which took place in both processes. There is evidence of a wider understanding of the threats posed by climate change on local livelihoods and how the VDC might lead to adaptation response. Most importantly, participants indicated an understanding of the importance of them executing their role better in the midst of climate change, as most of the community rely on their leadership in addressing local vulnerabilities.

The statements indicate a clear realism as VDCs display a more focussed understanding of their current overall situation and how they can support their local communities to adapt. Participants appear willing to engage the (higher) District leadership on how they can be better assisted to address adaptation issues in their villages. They believe they have a legitimate claim to meaningfully participate in how decisions on adaptation are being made. They are willing to ensure that their voices are heard within the current decision-making structure, which includes their District Council.

The results show that participants are eager to improve their mainstream development plans by incorporating climate change adaptation. There is a realization that their role is not just about engaging the community: it is about holistic integration of adaptation in their current system. Participants are moved to look within their own communities for solutions to their challenges; an indication of a newly formed, higher-level ownership of adaptation planning.

Table 2. VDC#1,2,4,5 'Post-event' information. Later reflections at the end of Day 2 (i.e. after BOTH the *WeValue* and the VRA sessions), touching on their role in adaptation planning. The prompting question was: 'Can you see any connections between what you did on Day 1 and Day 2?'

VDC	Comments made
VDC#1	'I think we have a major role to play in climate change adaptation planning. During the past two days (WeValue and VRA sessions) we have really broadened our thinking about how climate change affects our livelihoods; we understand it is important to make the right decisions at the right time'. 'The most important thing is to be able to make a connection between the things that are important to us and the challenges of climate change that we are discussing today … I came here with low understanding of how my work can contribute towards climate action'.
VDC#2	'I think we can participate through sharing knowledge with community members that as the climate is changing they should also find ways of adapting their livelihoods to the changes. VDC is the closest to the community and they understand the challenges of the communities'. 'My understanding has changed. Even when we were experiencing late rains it did not mean much to us, that is, the connection between climate change and social issues was not established. We always knew that the government will plough for us so it did not occur to us that we can be part of the action and we should stand up for ourselves'.
VDC#4	'What we have learnt here is going to help us beef up our annual development plan … … Attending yesterday's (WeValue session) event I can say built my confidence to answer questions related to climate change even though it is not my field. I was able to relate to how it can be addressed through planned development in my village'. [VDC#4] 'I have learnt that the VDC has immense responsibility in the village, more than we have been thinking about. We deserve to be listened to by those that we lead and other stakeholders, we are not to be looked down upon … … … My main take away from yesterday was on vision building, that is how we want our village to turn out and today with the outcomes of the work that we were engaged in, we were putting together the actions towards achieving the vision that we desire. That vision includes a climate resilient future'. (VDC#4)
VDC#5	'We have not been dealing with climate change issues because we felt these are beyond and are not part of our mandate, but I see that this is our work. It is our work to engage our community in these issues. I am free now to do this because I understand why it is important'. (VDC#5) 'It is important to understand how we the VDC and the community can collaborate effectively to address our challenges. WeValue clarified our responsibility; we should be ready to engage in any issue that might be as a result of climate change. Most of our actions require us to know how to approach our leaders'. (VDC#5)

Table 3. Control VDC#3 'Baseline' and Post-VRA information, taken at the very beginning and very end, respectively, of the VRA day. Table 3. Data for the Control VDC#3: 'Baseline' and Post-VRA information, taken at the very beginning and very end, respectively, of the VRA day, for comparison.

VDC#3	Pre-VRA	Post-VRA
	Facilitator: Do you think the VDC should be responding to climate change issues? 'I would say I really do not see the role that the VDC can play and how far we can go with these issues because we really do not understand how they manifest'. (VDC#3) 'I am really confused. As the village parliament I would say it is important for us to take the lead but our limited understanding will not allow us to be engaged in any useful manner'. (VDC#3)	**Facilitator: Is there one project that you think you can implement as the VDC from the ones that we have discussed (during this VRA session)?** 'What I think we need is not part of the things we came up with here. We currently have a problem of a hall in the village. We need a hall … ' (Notes: The participants decide to then focus on discussion about the hall, which they perceive is their job to develop.) (VDC#3) [The facilitator tries to bring them back to roles concerning climate change, using the next two questions:] **Facilitator: How is the work of the VDC affected by climate change?** 'We are responsible for village development. When the climate and the environment changes people are not happy in the village, therefore it becomes very difficult to work with unhappy people. Even people who come to work on our projects are unhappy because they cannot do anything for themselves'. (VDC#3) **Is it (climate change action) something that the VDC can be engaged in?** **Facilitator observation: There is a long silence with looks of confusion.** 'If we are assisted we can take the lead, but other than that we cannot'. (VDC#3) *(Authors' note: in case it is unclear: this VDC considered the work on the village hall to be their main job).*

4.2. The control VDC with no values-based pre-process

4.2.1. Control VDC#3 reflections about their perceptions of their role in adaptation planning

The results shown in Table 3 indicate that both before and after the VRA process, the VDC#3 participants were struggling to understand linkages between the roles they currently take on,

and their participation in adaptation planning either within their community or with respect to their role in district planning. Participant responses did not indicate any role for the VDC in adaptation planning. There is no change in perception at the end of the VRA session. Rather, participants held strong to traditional roles which prioritize development projects, (predominantly construction), mentioning the building of a community hall- unrelated to adaptation to climate change. The responses of the participants (Table 3) did not indicate any responsibility to incorporate adaptation planning into their work.

4.3. Data exploring the effect of WeValue approach

While the data in 3.1 and 3.2 were obtained in order to study shifts in perceptions of role with respect to adaptation, a further set of data was collected at the end of Day 1, after the values-based *WeValue InSitu* approach. The purpose was to reveal possible links between the shared-values process, and general changes in role perception (before climate change

issues were discussed specifically). The open question was asked: 'What do you think of the process we went through today?', designed to provide space for the participants to decide their own emphasis when answering. Table 4 shows responses related to role.

The responses indicate that the VDC#1,2,4,5 members have had a significant collective reflection, which has enabled them to better understand their own priorities, roles and purpose – for all their work; generally. The statements are about the principles underlying their responsibilities, rather than the specifics of their responsibilities, indicating the VDCs have obtained a better overview, and at the same time a better grounding, of their existing roles, in the general sense.

4.4. Mentions of specific fields of responsibilities

All five of the VDCs spent considerable time in their VRA session to explore and then prioritize outlines of plans for climate change adaptation. Transcripts were made of all of these conversations, and those became particularly useful in this exploratory part of the study because it was possible to code those conversations for specific allusions to perceived roles of the VDC. The coded extracts of the discussions are summarized below in Table 5 for the 'experiment' VDCs#1,2,4,5 and in Table 6 for the 'control' VDC #3.

The extracts are indicative only but suggest some interesting characteristics. First, the nature of the topics discussed in

Table 4: Interim Focus Group Data: Exploratory evidence of possible early shifts in role perceptions of VDC members at the end of Day 1 (i.e. after the *WeValue InSitu* pre-process)

VDC	Comments made
VDC#1	'As a VDC member you should understand the chronology of planning, how things start and what your role is. It is basically our own guidelines … I think for me it *(the WeValue process just completed)* emphasizes the importance of community voice and ideas and how to incorporate these in planning'.
VDC#2	'The VDC is referred to as the 'village parliament'. So, it *(the WeValue process just completed)* focuses VDC members to really understand what is happening in the village and to really have a clear understanding of their job. That is, your purpose in the village and how you are to help the community'.
VDC#4	'This training has been an eye-opener to self-introspect as a committee to see if we have not been neglecting other issues that could benefit our community'.
VDC#5	'Currently I do not think we are close to what we have in this framework *(freshly constructed from shared values in the WeValue session),* unless after this training things change … … . It can help us understand our role better, what we are supposed to do and what we are not supposed to do'.

Table 5. Examples of 22 'Perceived Fields of Responsibility' that the VDCs #1,2,4,5 mentioned, with example phrases, extracted verbatim (Clips).

No.	Perceived fields of responsibility	Clips
1.	Adaptation finance mobilization	*I do not think it is true that we do not have funds. Funds like the constituency fund mechanism can be used for this project.*
2.	Climate services point	*We will also encourage farmers to form syndicates and drill their own boreholes.*
3.	Climate action	*I think we have a major role to play in climate change adaptation planning.*
4.	Tourism development and management	*We have a dam in the village. Our plan is to develop this dam into a tourist attraction spot since we are close to the city.*
5.	Disaster risk reduction	*VDC should advise against people building makeshift structures that cannot withstand heavy rains.*
6.	Community educators/mentors	*At the end we can share this message with members of the community so that they understand the work of the VDC …*
7.	Mobilization of climate change resources	*We cannot build the capacity of the community alone; we need the help of specialists from outside.* *Organize a workshop for farmers in collaboration with Agricultural Officer on dry farming.*
8.	Gender equality advocacy	*We should not think women cannot be engaged in fishing, we have women from other communities in the country doing this already.*
9.	Social welfare protection	*The VDC should raise awareness on issues of emotional abuse, physical abuse and another form of social abuse where sometimes people are denied food.*
10.	Community training	*We want people to be able to make their own reservoirs in their farms.*
11.	Poverty eradication	*Most of the packages that people receive especially those that rely on the environment usually drive people into poverty.*
12.	Risk management	*This helps diversify our earnings, when we get late or no rains we know we can either do fish sales or concentrate on other activities.*
13.	Environmental management	*… there could be such things as soil erosion, irresponsible felling of trees, digging trenches everywhere, and digging sand everywhere … .* *Due to overharvesting of river sand, the river has also changed, we see trees now growing in the middle of the river.*
14.	Creation of employment opportunities	*We have a dam in our village that we can use to develop our village. This can also help open employment opportunities for young people as we can establish a fish factory to produce canned fish.*
15.	Youth development and engagement	*We have leased the garden to one of the young people in the community to use it … .*
16.	Wider representation	*We would call Kgotla meeting to consult with the community on development ideas. We are not just waiting for problems to occur.*
17.	Government policy assessment	*Like we have mention before there is no one with a permit to fish in the dam that is in our village.* *After receiving these packages beneficiaries are abandoned and expected to run their businesses* *Most of these people their farms were repossessed by the government to make way for the expansion of the city*
18.	Inclusive decision making	*… support the less fortunate within our community and ensure that they are included in decision making …*

Table 6. Examples of eight 'Perceived Fields of Responsibility' that the control VDC#3 mentioned, with extracted verbatim example phrases (Clips).

No.	Perceived fields of responsibility	Clips
1.	Cultural development	*We believe that the reason why we are seeing these changes is that people have stopped observing practices which were meant to respect our ancestors.* *We used to have people that we would send out to request for rain for us from our ancestors, but nowadays this practice is not common. We had agreed that people should not work their fields on Fridays but people are no longer observing these rules.*
2.	Community training	*Introduction of farmers to irrigated farming.*
3.	Risk management	*This helps diversify our earnings, when we get late or no rains, we know we can either do fish sales or concentrate on other activities.*
4.	Disaster risk reduction	*There are people who choose to stay in hidden areas in the village because they do not feel confident about their social status. These people are the ones who are usually affected by disasters and they rely on government programs.*
5.	Youth development	*Since we do not have structures, we also cannot provide opportunities for young people in the village to improve their lives.*
6.	Government policy assessment	*If the government does not give us seeds, I do not think most people would be able to plough. We must also remember that the regulations do not allow the VDC to provide workers with protective clothing.*

the VDCs who had the values-based pre-process seemed much more confident of their own role and the village level of governance, and in the control, they relied more on higher levels of governance. Secondly, the former type has comments showing clear linkages between specific village topics and climate-change related issues, whereas the latter have vaguer comments, with little links to adaptation. Lastly, the range of topics is much greater for the experimental VDCs (although there were more of them). However, this is only preliminary data, and a wider range of control villages would be more appropriate for comparisons in future studies.

5. Discussion

The data indicates a clear shift in the VDC's perceptions of their roles and responsibilities which underwent the shared-vales pre-process. Beforehand, they did not include adaptation planning as one of their roles: 'I cannot really say the VDC has

been doing anything on climate action … It is not what we do in the village' (VDC#1). After the 2-day *WeValue*-plus-VRA process they had explicitly taken on associated adaptation roles: 'My understanding has changed. Even when we were experiencing late rains it did not mean much to us, that is, the connection between climate change and social issues was not established … ' (VDC#2)

> We have not been dealing with climate change issues because we felt these are beyond and are not part of our mandate, but I see that this is our work. … I am free now to do this because I understand why it is important. (VDC#5)

Further evidence that this shift of perception was causally linked to the values-based pre-process was obtained, both in information collected at the end of Day 1 (as in Table 4), and also at the very end of the second day:

> The VDC is referred to as the 'village parliament'. So, it (the WeValue process just completed) focuses VDC members to really

Table 7: An overview of the characteristics found in the parallel study of the quality differences in the VRA outcomes of the five VDCs, as established with the use of a comprehensive VRA evaluation tool (Sethamo & Harder, 2021).

VDC#3 (without values-based session)	VDCs#1,2,4,5 (with values-based session)
Community ownership of climate adaptation planning and VRA outputs is a challenge. Participants are dis-attached from the process of assessing vulnerabilities and selecting relevant adaptation actions.	A shift towards ownership for the development of VRAs well beyond the simple identification of local vulnerabilities and towards planning concrete steps towards action.
Reaffirms top-down climate change decision making approach.	Contributes towards an integrated multilevel adaptation governance.
Very little appreciation is given to the need to understand the interaction between climate, society and the local context	A clear relevance of the discussion supporting the identification of bespoken adaptation priorities and responses.
A struggle to explicitly follow the conversation about the interaction of climate change with current roles.	Role clarity enhances participation in process of adaptation planning. Participants voluntarily take up climate action responsibility. There is no overreliance on outside agents to drive adaptation action.

understand what is happening in the village and to really have a clear understanding of their job. That is, your purpose in the village and how you are to help the community. [VDC#2] (End of Day 1)

'WeValue clarified our responsibility; we should be ready to engage in any issue that might be as a result of climate change' (VDC#5) (End of Day 2).

The data also shows that participants of the *WeValue InSitu* pre-process exhibited a deeper and holistic understanding of how climate change affects and interacts with their livelihoods (compare Tables 5 and 6: see also Table 2). The standard VRA sessions provide an opportunity to better answer important local questions such as who is vulnerable, and what measures can enable their adaptation (Ribot, 2014), but they do not necessarily clarify who should lead on the conclusions. The findings of this study show that, unlike the control VDC, four VDCs who participated in the *WeValue InSitu* pre-process were very naturally and deeply relating their roles to the topics of climate change risks which emerged in the VRA in Day 2. They were able to self-identify the relevance of those issues to their work, and self-link them to the current village context to consider responses. Some participants were even energized to engage the leadership of the district, and are going further to suggest funding mechanisms for adaptation priorities.

In addition to the above evidence from data from this study, we took advantage of the detailed parallel study which comprehensively evaluated the quality of the VRAs Reports produced (submitted for publication elsewhere), and analysed that data for something specifically useful to this study: for any evidence or counter-evidence of aspects pertaining to the question of focus here, i.e. 'perception of role'. The results are outlined in Table 7, and confirm the findings presented in Tables 5 and 6: that the 'experiment' VDCs seemed much more confident in their own role and the village level of governance and to show clear linkages between specific village topics and climate-change-related issues.

The local level of governance space, where VDCs are situated, is usually considered the front line of climate change adaptation. Therefore, members of this local level should not be viewed as incapable of exercising any initiative without outside help, but rather, as partners whose local knowledge can provide important foundations for adaptation (Castro et al., 2012). The evidence shown in this study is that the *WeValue InSitu* process can facilitate a VDC to interface more deeply between externally-provided new knowledge (such as climate

change impacts), and internally-known knowledge (of local resources for adaptation). This means *WeValue InSitu* can potentially play an important role in adaptation planning. It might also enhance important governance capabilities which Termeer et al. (2016) describe as abilities for governance actors to respond wisely when facing wicked problems such as climate change, and the ability of the governance system to enable such acting. These are critical for the development of adaptation policies that truly represents the adaptation needs of local communities.

The challenges identified with VDC#3 – the control VDC – are classic to many VRA approaches, and more generally the traditional processes of community participation in climate change dialogue. For example, several studies have demonstrated the difficulties many communities face in personalizing the importance of climate change to themselves, instead believing that it is an issue for 'other' communities (Lorenzoni & Pidgeon, 2006; O'Neill & Hulme, 2009). In order to be meaningfully engaged, individuals need to know not only about climate change, but also to be motivated and enabled to take action (O'Neill & Hulme, 2009), by way of seeing a panoramic and also embedded view of how climate change affects their local livelihoods. This study indicates that *WeValue InSitu* used as a pre-process assists with this: there are many more specific links to local livelihoods. Specifically, shifts in perceptions of VDC roles with respect to adaptation planning are seen from the comparison of the pre- and post-interviews designed to reveal such perceptions. These are directly linked to the actual WeValue *InSitu* process via the data taken directly after it at the end of Day 1 (Table 4), where the interview data show that VDC perceptions of their roles have generally shifted – not just concerning adaptation planning.

VDCs as custodians of village development offer an excellent potential mechanism to address climate vulnerabilities facing rural communities. Their closeness to rural communities is critical for effective planning that can allow adaptation to become part of long-term decision-making and embed climate change considerations into everyday policy and planning considerations (Morgan et al., 2018). Adaptation that takes place at the local level adds an element of validity to subsequent actions taken forward, because they are more likely to have the needs of at-risk communities at the centre of the development of solutions (King, 2014). Therefore, in Botswana, the success of adaptation planning will be highly reliant on the embedded capacity of the VDCs to facilitate at local

level (Ensor, 2014), and to avoid unsuitable implementations that can occur when policies are developed without the engagement of their intended beneficiaries (Pradhan et al., 2014; Raihan et al., 2010).

Achieving these types of practical steps has ongoing challenges using traditional participatory methods, with calls for a move to meaningful two-way engagement (Dube & Sekhwela, 2008) leading to ownership, and an enhanced relevance of adaptation action (Sethamo et al., 2020). The evidence from this study indicates that the *WeValue InSitu* approach facilitates VDCs to achieve an adaptive capability which immediately impacts their ability to produce relevant local plans, through clarification of their own collective selves – '*in situ*' – and that this has related effects in the capacity to relate to external concepts and link them to lived realities. The detailed learning mechanisms which are taking place are not yet known, but a series of ongoing studies (e.g. Harder et al., 2021) suggest transformational learning as defined by Mezirow's Transformational Learning Theory (Mezirow, 1994) is occurring, with links to concepts by Polanyi's Personal Knowledge Theory (Polanyi, 1958). In other words, it is providing a 'localized learning' akin to that suggested as an alternative to traditional participatory methods (Lynch & Brunner, 2010; Van der Wal et al., 2014). These links to theory are interesting because they open up the possibility of formalizing, and thus generalizing and scaling up the impact of processes such as *WeValue InSitu* not only for transformative adaptation, but more widely in development.

6. Conclusion

This study demonstrates that the use of a shared-values approach as a pre-process for VRAs helped four VDCs clarify their perceptions of their existing roles, and that when they went on to a VRA process they engaged more deeply, self-identifying relevance and responsibility, and naturally proposing adaptation plans of their own making, intertwined with other village plans. Their pre- and post- perceptions about their roles and responsibility in adaptation planning were found to have changed from almost none, to significant responsibility.

A fifth VDC which did not use the shared-values pre-process did not show these effects, which the data indicates t are causally linked to the use of the *WeValue InSitu* pre-process, which is separately linked to general role perception shifts and then, after the VRA, more specifically to perceptions of roles in adaptation planning. Additionally, post-VRA interview data explicitly indicate that the role clarification had later enabled them to relate the climate change issues in the VRA process to their local realities and responsibilities – and thus to new roles.

We believe it is a novel and important finding that shifts in perceptions of role can play such a critical role in achieving local learning, and thus improved adaptation planning. The finding that these can be achieved using a particular shared-values crystallization approach (WeValue *InSitu*) is perhaps not as important, in that there may well be other approaches that can achieve them.

This study does not indicate what aspects of the shared-values process were critical, but instead treated it as a 'black box'. Further studies would be useful to study the sub-processes to determine which are critical, and to try to link the findings to underpinning theories of transformative and/or transgressive learning or participation. The study also did not follow the actions of the VDCs over a period of time; it would be beneficial to have a clear understanding of any long-term changes in perceptions and actions of such VDCs, and the domains of their work where they had impact. Research in this field could also benefit from further clarification of whether the presented improvements in the adaptation planning process were due to the element of increased role clarity, or the clarification of local shared values – or both inextricably. Furthermore, an interrogation on whether there are other forms of role clarifications that could perhaps result in the same effect could provide the local adaptation planner with more implementation options, since the *WeValue InSitu* process is specialized and requires a trained facilitator.

Notes on contributors

Obakeng A. Sethamo is completing his PhD at Fudan University (Shanghai, China). He has over 10 years of experience working within the complex nexus of climate change, livelihoods and development. His current research interests include values-based climate change adaptation, community-based adaptation, vulnerability, climate impacts, renewable energy, innovation and local-led development.

Sylvia Karlsson-Vinkhuyzen is an assistant professor with the Public Administration and Policy Group of Wageningen University, the Netherlands. In her research, she seeks to understand the key determinants of what makes global public governance processes exert influence and build legitimacy where issues such as transparency, participation, accountability and equity are important. She has published in the domains of global energy, climate change, biodiversity and sustainable development governance and particularly analysed the evolution and legitimacy of international norms in these and various pathways for holding states to account for those norms.

Marie K. Harder is a Professor at Fudan University and at the University of Brighton, has led the development of the We Value processes since their inception. Originally trained as a physicist, she now uses principles of validity and research-through-design to guide her transdisciplinary work, publishing in many different disciplinary fields, and using the We Value processes to open new research agenda in shared values in the context of evaluation, environmental management, participation, design, ethics, sustainability, health and beyond-GDP issues.

ORCID

Obakeng A. Sethamo http://orcid.org/0000-0001-6196-9585
Sylvia Karlsson-Vinkhuyzen http://orcid.org/0000-0001-7632-8545
Marie K. Harder http://orcid.org/0000-0002-1811-4597

References

Adhikari, B., & Taylor, K. (2012). Vulnerability and adaptation to climate change: A review of local actions and national policy response. *Climate and Development*, *4*(1), 54–65. https://doi.org/10.1080/17565529.2012.664958

Ampaire, E., Jassogne, L., Providence, H., Acosta, M., Twyman, J., Winowiecki, L., & van Asten, P. (2017). Institutional challenges to climate change adaptation: A case study on policy action gaps in Uganda. *Environmental Science Policy*, *75*, 81–90.

Boyd, H., & Charles, A. (2006). Creating community-based indicators to monitor sustainability of local fisheries. *Ocean and Coastal Management*, *49*(5), 237–258. https://doi.org/10.1016/j.ocecoaman.2006.03.006

Brigstocke, J., Hoover, E., Harder, M., Graham, P., De Sousa, S., Dearden, A., & Gaubert, J. (2017). *Implicit values: Uncounted legacies*. Policy Press.

Castro, A., Taylor, D., & Brokensha, D. (2012). *Climate change and threatened communities*. Practical Action.

Chambers, R. (1994). Participatory rural appraisal (PRA): Analysis of experience. *World Development*, *22*(9), 1253–1268. https://doi.org/10.1016/0305-750X(94)90003-5

Chambers, R. (2008). PRA, PLA and pluralism: Practice and theory. In P. Reason & H. Bradbury (Eds.), *The SAGE handbook of action research* (pp. 297–318). Sage.

Cheema, G. A., & Rondinelli, D. A. (1983). *Decentralisation and development: Policy implementation in developing countries*. Sage.

Daze, A., Price-Kelly, H., & Rass, N. (2016). *Vertical integration in National Adaptation Plan (NAP) processes: A guidance note for linking national and sub-national adaptation processes*. NAP Global Network. http://napglobalnetwork.org/wp-content/uploads/2016/11/napgn-en-2016-vertical-integration-in-national-adaptation-plan-processes-a-guidance-note-for-linkingnational-and-sub-national-national-adaptation.pdf

Dhungana, N., Khadka, C., Bhatta, B., & Regmi, S. (2017). Barriers in local climate change adaption planning in Nepal. *Journal of Law, Policy and Globalization*, *62*, 20–24, ISSN 2224-3259 (Online).

Dube, O. P., & Sekhwela, M,B. (2008). Indigenous knowledge, institutions and practices for coping with variable climate in the Limpopo Basin of Botswana. In N. Leary, J. Adejuwon, V. Barros, I. Burton, J. Kulkarni, & R. Lasco (Eds.), *Climate change and adaptation* (pp. 19–28). Earthscan.

Elwell, H. (2009). *Defining capacity: Community-based watershed management and climate change adaptation*. Tufts University.

Ensor, J. (2014). Emerging lessons for community-based adaptation. In J. Ensor, R. Berger, & S. Huq (Eds.), *Community based adaptation to climate change: Emerging lessons* (pp. 183–196). Practical Action.

Government of Botswana (GoB). (2017). *National Development Plan 11, April 2017 – March 2023*. Government Printer.

Haque, M., Bremer, S., Aziz, S., & van der Sluijs, J. (2017). A critical assessment of knowledge quality for climate adaptation in Sylhet Division, Bangladesh. *Climate Risk Management*, *16*, 43–58. https://doi.org/10.1016/j.crm.2016.12.002

Harder, M. K., & Burford, G. (2018). *Measuring intangible values: Rethinking how to evaluate socially beneficial actions*. Routledge.

Harder, M. K., Burford, G., & Hoover, E. (2013). What Is participation? Design leads the way to a cross-disciplinary framework. *Design Issues*, *29*(44), 41–57. https://doi.org/10.1162/DESI_a_00229

Harder, M. K., Dike, F. O., Firoozmand, F., Des Bouvrie, N., & Masika, R. S. (2021). Are those really transformative learning outcomes? Validating the relevance of a reliable process. *Journal of Cleaner Production*, *285*, 125343. https://doi.org/10.1016/j.jclepro.2020.125343

Harder, M. K., Velasco, I., Burford, G., Podger, D., Janoušková, S., Piggot, G., & Hoover, E. (2014). Reconceptualising 'effectiveness' in environmental projects: Can we measure values-related achievements? *Journal of Environmental Management*, *139*, 120–134. https://doi.org/10.1016/j.jenvman.2014.02.022

Intergovernmental Panel on Climate Change (IPCC). (2014). Summary for policy makers. In C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. O. Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, & L. L. White (Eds.), *Climate change 2014: Impacts and vulnerability. Part A: Global and sectoral aspects*. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (pp. 1–32). Cambridge University Press.

International Fund for Agricultural Development (IFAD). (2014). *Comprehensive environmental and climate change assessment in Vietnam*, https://www.ifad.org/documents/10180/bc978d37-0907-4fef-acf0-fddbc9040011

Jones, L., & Boyd, E. (2011). Exploring social barriers to adaptation: Insights from western Nepal. *Global Environmental Change*, *21*(4), 1262–1274. https://doi.org/10.1016/j.gloenvcha.2011.06.002

Khatri, D. B., Bista, R., Gurung, N., & Shrestha, K. K. (2013). Climate change adaptation and local institutions: How to connect community groups with local government for adaptation planning. *Journal of Forest and Livelihood*, *11*(1), 14–28. https://doi.org/10.3126/jfl.v11i1.8610

King, S. (2014). *Community-based adaptation in practice: A global overview of CARE International's practice of community-based adaptation (CBA) to climate change*. UK: CARE International.

Kok, K., Biggs, R., & Zurek, M. (2007). Methods for developing multiscale participatory scenarios: Insights from Southern Africa and Europe. *Ecology and Society*, *12*(1), 8. http://www.ecologyandsociety.org/vol12/iss1/art8/ https://doi.org/10.5751/ES-01971-120108

Lorenzoni, I., & Pidgeon, N. (2006). Public views on climate change: European and USA perspectives. *Climatic Change*, *77*(1-2), 73–95. https://doi.org/10.1007/s10584-006-9072-z

Lynch, A. H., & Brunner, R. D. (2010). Learning from climate variability: Adaptive governance and the pacific ENSO applications center. *Weather, Climate, and Society*, *2*(4), 311–319. https://doi.org/10.1175/2010WCAS1049.1

Maphosa, F., Ntau, C., & Seleka, M. (2019). An appraisal of participation and rural development in Botswana: The case of Mmankgodi Village. *Botswana Notes and Records*, *51*, 78–92.

Masundire, H., Morchain, D., Raditloaneng, N., Hegga, S., Ziervogel, G., Molefe, C., Angula, M., & Omari, K. (2015). *Vulnerability and risk assessment in Botswana's Bobirwa Sub-District: Fostering people-centred adaptation to climate change*. IDRC: Collaborative Adaptation Research Initiative in Africa and Asia.

Matthews, T. (2013). Institutional perspectives on operationalising climate adaptation through planning. *Planning Theory and Practice*, *14*(2), 198–210. https://doi.org/10.1080/14649357.2013.781208

Mezirow, J. (1994). Understanding transformation learning. *Adult Education Quarterly*, *44*(4), 222–232. https://doi.org/10.1177/074171369404400403

Ministry of Environment, Natural Resources Conservation, and Tourism (MENRCT). (2016). *Botswana climate change response policy (draft)*. Government of Botswana.

Ministry of Environment, Natural Resources Conservation, and Tourism (MENRCT). (2018). *Botswana climate change strategy and action plan issue paper (draft)*. Government of Botswana.

Ministry of Environment, Natural Resources Conservation and Tourism (MENRCT). (2019). *Botswana's Third National Communication to The United Nations Framework Convention on Climate Change, The Republic of Botswana*. https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/3567491_Botswana-NC3-1-BOTSWANA%20THIRD%20NATIONAL%20COMUNICATION%20FINAL%20.pdf

Ministry of Environment, Natural Resources Conservation and Tourism (MENRCT). (2020). *National adaptation plan framework for Botswana*. Government of Botswana.

Ministry of Environment, Wildlife and Tourism (MEWT). (2012). *Second National Communication to the United Nations Framework*

Convention on Climate Change (UNFCCC). https://unfccc.int/resource/docs/natc/bwanc2.pdf

Ministry of Local Government (MLG). (2008). *Revised District Planning Handbook 2010*. The Department of Local Government Development Planning.

Ministry of Works, Transport and Communications (MWTC). (2001). *Botswana Initial National Communication to the United Nations Framework Convention on Climate Change*. https://unfccc.int/resource/docs/natc/botnc1.pdf

Moreno, J., Sanyal, K. A., Firoozmand, F., Rutter, P., & Harder, M. K. (2020). Reflective practice in community development: A grounded analysis. *Systematic Practice & Action Research*, *33*(5), 501–525. https://doi.org/10.1007/s11213-019-09496-7

Morgan, E., Johanna, N., & Brendan, M. (2018). Assessing the alignment of national-level adaptation plans to The Paris Agreement. *Environmental Science and Policy*, *93*, 435–473.

Mullan, M., Kingsmill, N., Kramer, A., & Agrawala, S. (2013). *National adaptation planning: Lessons from OECD countries*. OECD Environment Working Papers, No. 54, January-March 2019. https://doi.org/10.1787/5k483jpfpsq1-en

Ojha, H. R., Ghimire, S., Pain, A., Nightingale, A., Khatri, D. B., & Dhungana, H. (2016). Policy without politics: Technocratic control of climate change adaptation policy making in Nepal. *Climate Policy*, *16*(4), 415–433.

O'Neill, S., & Hulme, M. (2009). An iconic approach for representing climate change. *Global Environmental Change*, *19*(4), 402–410. https://doi.org/10.1016/j.gloenvcha.2009.07.004

Ouma, G., Dieye, A., Ogallo, L., & Olang, L. (2017). Institutional challenges in scaling-up climate change adaptation actions: Experiences from rural communities in Senegal and Kenya. *Climate and Development*, *10*(7), 590–599. https://doi.org/10.1080/17565529.2017.1372261

Podger, D., Piggot, G., Zahradnik, M., Janoušková, S., Velasco, I., Hak, T., Dahl, A., & Harder, M. K. (2010). The Earth Charter and the ESDinds Initiative: Developing indicators and assessment tools for civil society organisations to examine the values dimensions of sustainability projects. *Journal of Education for Sustainable Development*, *4*(2), 297–305. https://doi.org/10.1177/097340821000400219

Polanyi, M. (1958). *Personal knowledge*. The University of Chicago Press.

Pradhan, N., Khadgi, V., & Kaur, N. (2014). The role of policies and institutions in adaptation planning: Experiences from the Hindu Kush Himalaya. In J. Ensor, R. Berger, & S. Huq (Eds.), *Community-based adaptation to climate change: Emerging lessons* (pp. 95–110). Practical Action.

Raihan, M., Andreasen, M., Huq, M., & Alsted, N. (2010). *Understanding climate change from below, addressing barriers from above: Practical experience and learning from a community-based adaptation project in Bangladesh*. Action Aid.

Reed, M. S. (2008). Stakeholder participation for environmental management: A literature review. *Biological Conservation*, *141*(10), 2417–2431. https://doi.org/10.1016/j.biocon.2008.07.014

Regmi, B. R., & Star, C. (2014). Identifying operational mechanisms for mainstreaming community-based adaptation in Nepal. *Climate and Development*, *6*(4), 306–317. https://doi.org/10.1080/17565529.2014.977760

Ribot, J. (2014). Cause and response: Vulnerability and climate in the Anthropocene. *The Journal of Peasant Studies*, *41*(5), 667–705. https://doi.org/10.1080/03066150.2014.894911

Sethamo, O. A., & Harder, M. K. (in print). Evaluating what matters: An evaluation tool for vulnerability risk assessments in local climate change adaptation planning. *Journal of Environmental Planning and Management*. https://doi.org/10.1080/09640568.2020.1866512

Sethamo, O. A., Masika, R. J., & Harder, M. K. (2020). Understanding the role of crystallizing local shared values in fostering effective community engagement in adaptation planning in Botswana. *Climate and Development*, *12*(5), 448–456. https://doi.org/10.1080/17565529.2019.1639488

Sharma, K. C. (2010). Role of local government in Botswana for effective service delivery: Challenges, prospects and lessons. *Commonwealth Journal of Local Governance*, 1–8. http://dx.doi.org/10.5130/cjlg.v0i7.1908

Sharma, K. C. (2012). *Role of traditional structures in local governance for local development: The case of Botswana*. Community Empowerment and Social Inclusion Program (CESI), World Bank Institute, World Bank.

Sherman, M., & Ford, J. (2014). Stakeholder engagement in adaptation interventions: An evaluation of projects in developing nations. *Climate Policy*, *14*(3), 417–441. https://doi.org/10.1080/14693062.2014.859501

Smith, B. C. (1985). Decentralization: The territorial dimension of the state, George Allen & Unwin. *Political Science*, *38*(2), 194-196. https://doi.org/10.1177/003231878603800212

Termeer, C. J. A., Dewulf, A., Karlsson-Vinkhuyzen, S. I., Vink, M., & Van Vliet, M. (2016). Coping with the wicked problem of climate adaptation across scales: The five R governance capabilities. *Landscape and Urban Planning*, *154*, 11–19. https://doi.org/10.1016/j.landurbplan.2016.01.007

Uddin, M., & Anjuman, N. (2014). Participatory rural appraisal approaches: An overview and an exemplary application of focus group discussion in climate change adaptation and mitigation strategies. *International Journal of Agricultural Research, Innovation and Technology*, *3*(2), 72–78. https://doi.org/10.3329/ijarit.v3i2.17848

United Nations Framework Convention on Climate Change (UNFCCC). (2002). *UNFCCC resource guide for preparing the National Communications for Non-Annex I Parties*. https://unfccc.int/resource/docs/publications/09_resource_guide1.pdf

United Nations Framework Convention on Climate Change (UNFCCC). (2011). *Initial guidelines for the formulation of national adaptation plans by least developed country parties*. LDC EXPERT GROUP. https://unfccc.int/files/adaptation/cancun_adaptation_framework/national_adaptation_plans/application/pdf/nap_initial_guidelines_annex__to_decision_5cp17_eng.pdf

Van der Wal, M., De Kraker, J., Offermans, A., Kroeze, C., Kirschner, P. A., & van Ittersum, M. (2014). Measuring social learning in participatory approaches to Natural Resource management. *Environmental Policy and Governance*, *24*(1), 1–15. https://doi.org/10.1002/eet.1627

Vision 2036 Presidential Task Team. (2016). *Vision 2036: Achieving prosperity for all, Botswana*. Government of Botswana.

World Bank. (1989). *Sub-Saharan Africa: From crisis to sustainable growth*.

Yin, R. (2009). *Case study research: Design and methods* (4th Ed). Sage.