

## TITLE PAGE

### Embodied Intersections: Gender, Water and Sanitation in Cameroon

A cornerstone of feminist thinking, intersectionality offers a critical analytical tool for exploring how gender intersects with other social structures of power. However, this leaves intersectionality grounded firmly in *social* analysis. Becoming increasingly salient are the complex political and material relations between social, technological and ecological systems (Linton & Budds 2014). Intersectionality—centering the entanglement of difference—offers an opportunity to explore the interplay between social relations and difference in the physical world (Thompson 2016). Drawing on participatory visual research with women and men across four communities in Cameroon, we elaborate how gendered social relations intersect with the material dimensions of water and sanitation. Given gendered and age-based divisions of labor, women and girls play a primary role in household water management. This paper centers women's concerns about everyday water access, use and control to elaborate how intersectional social dynamics in relation to water also intersect with water in the physical world. Expanding intersectional thinking beyond the social realm, we also demonstrate how gendered intersections shape and are shaped by material and physical dimensions of water. This suggests that theorizing about social difference alone risks missing the role of environmental factors within different groups' experiences of power, privilege and oppression.

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## Introduction

A cornerstone of feminist thinking, intersectionality offers a critical theory and method for justice and political action. Emerging from concerns about how gender intersects with race and class in the American contexts, intersectionality shifts away from single axis thinking to examine how power structures intersect (Crenshaw 1989). Intersectionality now considers any number of intersecting social structures of power such as sexuality, ethnicity and ability (McCall 2005; Simpson 2009). As a field of study, intersectionality works to both understand and counter the complex and intersecting ways that power operates (Cho, Crenshaw & McCall 2013). In this paper, we build on Thompson's (2016) concern that intersectionality theorizes power and difference within the social realm and thus risks missing important environmental materialities that *also* influence different groups' experiences of and relations to power, privilege and identity.

Unsettling conceptualizations of "nature", many geographers challenge the idea of nature as a distinct resource or entity that is separate from society (Braun 2009). Furthering the well-established inseparability between water and sanitation, becoming increasingly salient are the hybrid political and material relations between water and society (Swyngedouw 2004). Water does not flow "downhill," independently from people as modeled in the hydrological cycle. Instead, water flows to power and money. Water-society relations are understood as a shifting hydro-social cycle that integrates social power, technology and infrastructure, and water in the physical world (H<sub>2</sub>O) (Linton & Budds 2014). Central to this reconceptualization are questions about the influence of materiality. A social construct encultured with meaning, water also has distinct material properties that play a formative role shaping hydro-social relations (Edgeworth 2014; Strang 2004; 2014). Additionally, technological objects and networks that reflect social and political power, infrastructures are also gaining attention as political terrain (Von Schnitzler 2013) and key actors mediating and reconfiguring human experience (Jensen & Morita 2016). This emerging scholarship suggests opportunities to consider how intersectionality's forms of social difference might also be conceptualized *relationally* with water and infrastructure.

In this paper, we build on gender and water research (Coles & Wallace 2005), and in particular Sultana's (2009) reconceptualization of gender as a socio-spatial-ecological process. Bringing intersectionality together with the materiality of water, we take up the possibilities of looking beyond the

social to better understand the complex ways that power operates, shaping both human experience as well as environmental conditions in the physical world. Intersectionality—centering the entanglement of difference—offers an opportunity to explore the interplay between social relations and difference in the physical world (Thompson 2016). Drawing on research from Cameroon, we explore the gendered intersectional dynamics of water. We argue that gendered intersections of power shape and are shaped by the material dimensions of water. Including water and sanitation within intersectional analyses enrich understandings of power and social experience.

## Context

This research builds on the work of an international research collective, [anonymized for review], currently headed by Author 2. Focusing on water management, this group brings together Canadian and Cameroonian researchers with the goal of working to improve water provision in Cameroon. Grounded in the ethical imperative to work collaboratively, the group incorporates engineering, urban planning, geography, chemistry and education perspectives across both academic research and community-based development. The group has conducted several projects over the last decade in Cameroon's Southwest (SW) Region.

In the SW Region, abundant freshwater resources flow from Mount Cameroon throughout the rainy season. Water is relatively accessible through springs and streams, and the mountainous topography allows for gravity-fed water distribution systems. Drawing on Cameroon's precolonial traditions of participatory development, many communities in both urban and rural areas manage their own water schemes with varying levels of success, depending on a number of social, economic and political factors (Njoh 2003; Sally et al. 2014). In urban and semi-urban areas, municipal water services were privatized in 2008 through a Public-Private-Partnership (PPP). Additionally, decentralization processes devolving authority to the municipal level are opening up spaces for increased public participation in local governance but also transferring economic burden without adequate resources.

While 95% of urban and 53% of rural populations have access to improved water sources (UNICEF/WHO 2015), access statistics often over-represent the realities of actual water supply. Households rely on multiple sources to meet water needs, and often opt to collect water from the nearest source, even if unimproved (Fotue & Sikod 2012). That only 62% of urban and 27% of rural populations use improved sanitation facilities significantly threatens water quality (UNICEF/WHO 2015). Land use activities such as farming and construction, along with under-supported institutional initiatives also impede the protection of water sources (Folifac et al. 2009). In summary, Cameroon faces significant challenges to meet the inter-related water and sanitation needs of its population. Given the important role of participation in water governance, Folifac (2013) asserted the need to develop more diverse stakeholder platforms that bring together different types of water users and managers, including women and youth.

Critically, water and sanitation are deeply embedded within gendered structures of power. A key principle informing global water policy is women's primary responsibility for collecting, managing and safeguarding household water (Global Water Partnership, 2000). This responsibility includes coping with both a lack of water, as well as poor water quality. Research from Cameroon generally acknowledges women's distinct roles with water and asserts the need to better include women in formal water decision-making processes (Ako Ako et al. 2010; Fonjong, Ngwa & Fonchigong 2004; Njoh 2011). While some women held accepted leadership roles in precolonial Cameroon, colonization effectively structured women out of formal hierarchies (Fallon 2008). However, women's solidarity, collective organizing and distinct forms of protest continue to play an important political role influencing community and state decisions (Diduk 2004), including in the area of water (Page 2005).

Notably, there is a lack of empirical qualitative water research *with* women in Cameroon. Recent survey research about labor divisions concludes that women are most likely to *use* water (for activities such as cooking, childcare and cleaning), and therefore are most affected by water problems (Fonjong & Ngekwu 2014). Furthermore, participatory research with youth identified risks of sexual violence related to water collection, as well as how water shortages contribute to perceptions of girls' sexualities (Thompson, Folifac & Gaskin 2011). Yet, there are opportunities to explore more deeply how water affects women's lives, with stronger attention to the intersectional dynamics of power. Our study responds to the need for more diverse stakeholder participation in water issues, as well as for more critical attention to women's experiences so that water policies and projects incorporate women's interests and a gender lens more generally.

## Method

The fieldwork for this study was conducted using participatory visual methodologies (PVMs) between November 2012 and April 2013 as part of Author 1's doctoral research. Promising tools for research and community engagement, PVMs involve research participants producing and interpreting images such as photographs and videos (Mitchell 2011). PVMs create space within the research process and within communities to explore the complexity of critical issues in ways that center the perspectives and experiences of the people most affected by them.

To incorporate as much as possible appropriate ethical and cultural protocols and concerns within the research process, the study was designed and conducted in collaboration with a civil society organization, Changing Mentalities and Empowering Groups (CHAMEG), headed by Author 3. We regularly consulted an advisory committee of Cameroonian academics from the [anonymized for review]. While CHAMEG supports various marginalized groups, the organization has worked particularly with and for women. Wanting the research activities to build and strengthen existing community initiatives, such as women's grassroots associations and local water management committees, we worked in four of CHAMEG's communities in the SW Region. Working in the regional capital of Buea, we also worked intentionally outside this metropole, in the city of Kumba and the villages of Bwitingi and Mudeka. Additionally, as part of the study and our commitments to collaboration and capacity building, we trained 10 local facilitators (graduate students and NGO staff) in the theory and practical uses of PVMs. Each community-based workshop was co-facilitated by Author 1 and local facilitators. Further, the camera equipment, methodological training, and experiential practice stayed within local organizations, creating opportunities for PVMs to later be taken up for research and community engagement.

In each community, we hosted two-day workshops, attended by a total of 130 participants (96 women, 34 men). While we initially proposed to work only with women, the facilitators expressed concern about excluding men. They felt that men should also be there to discuss water issues, *hear* women's concerns and be accountable to women, but that men should not "dominate." Hence, we centered women's experiences in the work, but also invited some men to participate in image production and analysis. While recruitment varied in each community<sup>1</sup>, we stressed the importance of including diverse participant positionalities across age, background, livelihood and educational level. This approach enabled generative engagement that valued diverse women's perspectives, considered some men's contributions, and adopted a gender lens. We worked to remain flexible and responsive to participant concerns (disaggregating both women's and men's experiences), without imposing too narrow views of how to address gender issues.

In the workshops, we used photovoice (Wang 1999) on the first day and a "no editing required" approach to participatory video (Mak, 2012) on the second day. Working in self-selected groups of three to six people (both single and mixed gender), participants used digital cameras to produce and interpret images addressing their concerns about water. Each day began with an introduction to the method, discussion about visual ethics and practice using the cameras. The groups then took cameras and went out into their community to produce images in response to the prompt: "What are your challenges with water? What are some possible solutions?" In the afternoons, participants printed 8-10 photographs on a portable printer and presented their work to the larger group on posters, and we screened each 2 minute "one shot" video onto a white sheet. These same-day presentations provoked discussion about the research process, images and implications for practice. Following these image production workshops, we held public exhibitions in each community to share the work more broadly amongst communities.

In total, participants produced 233 photographs (arranged on 28 posters) and 27 short videos. Striving to ground analysis in community concerns, we facilitated an additional two-day analysis workshop with representatives from each community. At this workshop, we hung all 28 posters around the room, screened almost every video and used thematic analysis to examine the broader trends in the data across the communities. Moletsane and Mitchell's (2007) approach to "working with a single photograph" also created space for thicker, deeper and more reflexive dialogue about the complexities of the particular images that resonated most significantly with participants. Through these activities, participants

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<sup>1</sup> For example, in one village, the facilitators only invited women to participate. In the other village, we faced communication challenges in the recruitment process and in particular recruiting women, and therefore ended up with 50% women and 50% men.

collectively identified the key issues across the work, selected the most important photographs and videos to show local leaders and strategized which leaders to invite to a final decision-maker discussion forum that culminated the study.

To disseminate the work broadly and spur discussion about implications for practice, the forum involved traditional leaders, municipal councils, and government ministries as well as activists from within the women's movements. While working within existing hierarchies risks reinscribing power, Nader (1999 [1972]) signaled the importance of "working up" structures of power—in particular within research exploring the lives of marginalized people—as a way to look more closely at the inner working of bureaucracies of power. While the process of working with leaders is not the focus of this paper, critical is how participants positioned their leaders as key audiences for the images, and actors for implementing changes in their communities.

Below, we focus specifically on the intersectional dynamics of three videos. Depicting cross-cutting issues in the work more generally, these three videos portray particularly poignantly how gendered social intersections also intersect with the materiality of water. We acknowledge the limitations in our presentation of this data. Certainly, it is difficult to capture the range of complexity in each video, or the complicated social dynamics of video and knowledge production.<sup>2</sup> We also heed concerns about pragmatic, uncritical and appropriating uses of "participation" in research (Cooke & Kothari 2001). Drawing on intersectional understandings of power, we suggest how research processes can *both* challenge *and* reinscribe dominant norms in different ways. With the vignettes below, we draw attention to participants' central narratives of concern<sup>3</sup> and provide supporting participant analysis to highlight intersectional components. In these analyses, participants did not necessarily use the language of intersectionality, and in many ways drew strategically on notions of solidarity vis-à-vis women's experiences. In applying the lens of intersectionality, we elaborate how intersecting forms of difference and the materiality of water cannot be disentangled from participant concerns.

### **Video 1: *Water Nightmare* [3:54]**

At the time of fieldwork, Kumba's municipal utility water was muddy and for the most part unusable, intensifying household reliance on springs and streams. In the video "Water Nightmare," produced by Caring Friends, the four women in the group portrayed women's experiences at a popular spring in Kumba, while the man in this group held the camera (see Figure 1). In this video, participants address the embodied impacts of water access and quality.

In the video, four women gather around a spring located in a gulley, in search of drinking water. The spring is busy with children in school uniform collecting water from a piece of grey plastic pipe inserted into the rock to channel a natural spring. Patience asks whether the water is OK for use: "We went all around Kumba looking for water... but couldn't find water to collect. But we found water here. My children are sick. I have to wash my children's diapers. I have to cook food. I need to drink water." She pushes through the children to fill her bottle.

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<sup>2</sup> While beyond the scope of this paper, take for example, the gendered intersectional dynamics of language. We conducted the community-based workshops across both English and Cameroonian Pidgin English (Pidgin), the lingua franca in Anglophone Cameroon. Spoken widely in homes, markets and the street by most people (regardless of gender or class), Pidgin is critical for working with women at the grassroots level. As Author 3 asserts, significant portions CHAMEG's gender advocacy work needs to happen in Pidgin. Yet because English dominates the formal spheres of government and education, Pidgin is associated with a lack of education and therefore marginalized in formal circles. Complicating these dynamics, Author 1 spoke Pidgin competently (owing to previous work in Sierra Leone). Intentionally positioning the work in Pidgin challenged dominant markers of status typically afforded to a White visitor working on a doctoral degree. Many participants appreciated being able to ground the research in the everyday particularities that shape gender-water relations, and the ways these interactions often play out in Pidgin. Most participants, such as the women who produced Video 1 and 2 below, chose to work in Pidgin. In these vignettes, Pidgin has been translated to English for an international audience. The last video, acted in English, reflects this group's positionalities as university students.

<sup>3</sup> All names are pseudonyms.

Clara disagrees about the water quality: "Please, don't drink the water. The water isn't good. I'm not joking... Don't you see the crops? Sister, no. Don't drink that water. I'm not going to drink the water." The camera pans up the steep rock face to show farm fields above, indicating this woman's concern about run-off contaminated by fertilizers and pesticides flowing into the groundwater and gully.

Yet there is uncertainty amongst the group. Marie justifies why she believes the water should be safe to drink: "As she said, the water is fine. Otherwise, these school children wouldn't drink it. We should drink it. Carry it and drink it." Most of the women decide that since the spring is busy, it must be reliable. They drink and collect water from the spring.

As the women start climbing the hill carrying jerricans of water, Bernice lifts her skirt with one hand and struggles with a yellow jerrican in her other: "I'm trying. I'm trying to carry it myself. We've been here since this morning. I haven't done any work in my house today because of this water. People will die for water in Kumba. People will die in Kumba!"

As the women struggle up the hill, they look up the steep terrain. Talking simultaneously, some call out: "This hill!" and others call out their physical strain, "My foot! My knee! My waist!" Bernice calls out her age: "I'm 69 years old!" When the scene cuts to the top of the hill, the women are no longer under the tree canopy of the hollow. Looking back down the steep path, the camera microphone picks up the sound of the wind; the spring is no longer in the frame. The women breathe heavily, not performed per se but genuine exertion from hiking for the video. Bernice calls out, "Eh, we are dying for these water problems. To wash clothes..."

As the women catch their breath, the impacts of unsafe water come into effect. Patience doubles over with stomach pain and vomits, crying, "My belly!" Bernice cries as she pulls up her sleeves and scratches her arms: "My skin is itchy. I used this water to do laundry. My skin broke out... I've got a rash on my skin." Marie rushes behind a tree and squats, moaning with diarrhea, "My belly! My belly!" Clara, who decided not to drink the water, speaks out: "I told you! I told you not to drink the water." She holds up a green plastic pop bottle filled with water, "This is clean water, water that is OK for drinking. This won't worry us. Now, we have to take you to the hospital ... if only you had listened to me, you wouldn't be suffering like this."

In this video, women named their embodied relationships with water by quite literally calling out parts of their bodies—knees, waist, stomach, skin—affected by and for water. Thinking intersectionally, this video raised concern about how gender intersects with age and ability, but also with topographical features such as distance and incline. Rosine, from another group, knew this particular spring:

If you look at this Mama, she is of age. And if you know where this stream is! We that are in Kumba, we know the distance ... very far, *ehn*?! It's very far [...] And then, where these children live [...] The distance that they go is too far to go and carry that water. Then, the hill is very stiff, right down there. Before, you see this Mama crying like that... it is something that is really difficult for them, to go there....

The gendered embodied work of water collection involves navigating the spatial and temporal dimensions of the physical geographies of water, travelling long distances while also negotiating steep and uneven topography. Given the troubling situation with muddy utility water in Kumba at the time, the condition of springs increased in significance. Notably, the reliability of springs as a water source becomes more precarious during the rainy season due to more hazardous physical access (muddy slippery hill paths). Additionally, during the rainy season, increased run-off from the surrounding areas impacts the quality of spring water. Rosine recalled her experiences helping a friend collect water from that spring:

She took me there and really, 20 L... I was unable to carry it and climb that hill [...] I put it in a Tangui bottle. I saw particles, inside, inside, inside. Then I asked her, I said 'Bo [friend], is this the water that you people are drinking? Then *bo*, you people are in Hell here.' So, ... this area in Kumba is very bad.

## Video 2: *Untitled* [2:51]

Also in Kumba, a group of five women, Women of Faith portrayed intra-household dynamics related to water collection<sup>4</sup>. Filmed near a public tap located along a busy road, the video has a lot of background noise from cars and motorcycles driving by. The action moves quickly, and the footage is rough and choppy. Often close to the actors, the videographer captures the backs of heads and blurry unfocused movement (see Figure 2). In this video, participants address intersecting forms of gender violence.

This story is set in a family compound. Miranda paces back and forth looking at her wristwatch, waiting for her children to return home with water: "No water, nothing. What am I supposed to do? Since I sent the children to go get water, they haven't come home yet. What is wrong?"

Another woman, Esther, dons a baseball cap to act the part of the "husband," who yells belligerently at his wife: "Madam, do you want to put my water in the bathroom!?"

Miranda looks around with worry and wrings her hands: "What water? I sent the children to go get water."

The man becomes increasingly more impatient and aggressive, "You sent the children? You should have sent them to a different place. You don't know that I work... I have to wake up in the morning and go to the office?"

Miranda replies: "But I sent the children for water..."

The man persists: "Tomorrow, you will ask me for food money. Are you sure you sent them for water?!"

At this point, the man gets physical and pushes Miranda backwards into the fence, continuing to berate her: "You were supposed to get my things ready before dawn. Don't you know I have to wash and go to work? This water crisis in Kumba!"

In the midst of this scene, the couple's two daughters enter the scene carrying empty water containers. One daughter has her head down. Miranda looks at the girl's skirt and realizes what has happened: "What happened?! My goodness! They ruined my child. Somebody raped her." Ignoring her husband, Miranda takes her daughter to a uniformed policeman: "Sir. I sent my daughter to get water... They raped her."

The policeman is shocked: "For water?" He takes the girl back out to the tap and asks her to identify who raped her. The video ends with an arrest; the young male perpetrator with his hands behind his back in handcuffs.

The parents then come together, shouting:

"My goodness, what are we going to do? Water problems in Kumba..."

"Water problems in Kumba, this is it! It is raping my child!"

This video raised multiple intersecting concerns. To begin, women negotiate conjugal violence related to unfair gendered expectations. This video prompted discussion about how marriage intensifies men's expectations about household work. While gendered divisions of labor position women and children as primary water carriers, certainly some men carry water. However, Hope noted how marriage almost absolves men of this responsibility: "If you see a man at the tap, know he is not married." Participants problematized the unreasonable demands placed on women. Estelle critiqued men who are "so careless, with that culture of the man not doing anything again in the house."

Yet, as depicted in the video, despite women's overloaded responsibilities, they must negotiate threats and physical violence. The husband in the video accuses his wife of lying, questions her judgment, manipulates her financial dependence on him, and uses physical force and aggression to intimidate and scold her. One young man, Thierry, expressed his concern for women: "Sometimes when their husband comes [home] and there is no water in the house, [women] get battered by their husbands." Hope conceded how conjugal violence is normalized: "It's the way you were brought up [...] He will say, 'You will have a slap.'" Water shortages do not *cause* conjugal violence. Nor do all men perpetrate such

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<sup>4</sup> This vignette highlights scenes from the video that were selected by participants as most important. Other scenes include a woman watering her garden and another woman briefly listing her water-related household work.

forms of violence. However, participants identified how water shortages contribute to the shaping of daily household relations that include domestic gender-based violence.

Additionally, women are responsible for the wellbeing of girls in relation to sexual violence. Focused less on individualized accounts or trauma, women considered the larger social and health implications of how sexual violence affects girls' lives and futures. Hannah said, "It is a lost opportunity for girls. A girl is raped [and] she does not go to school. She is lost completely." Margaret raised additional consequences:

A child goes to carry water and she is raped. What comes after that? We know of HIV. We know of unwanted pregnancies... so how do we stamp out that in our community?

While girls' accounts are missing from this analysis, previous research in this area has elaborated how water shortages shape the construction of girls' sexualities in various ways, including through the risk of assault but also in the suggestion that girls might actively negotiate their intimate relationships while out collecting water (Thompson, Folifac & Gaskin 2011). From women's perspectives in this study, women articulate how they simultaneously negotiate multiple roles provisioning water for their households, and caring for the wellbeing of their children.

### **Video 3: Women and Water: Challenges and Possible Solutions [2:42]**

The third video was produced by Victory, a group of five university students living in the Molyko, Buea's student neighborhood. This video features three women and one man acting, while the other man filmed. In this video, participants address the gendered dimensions of how public springs are used for multiple purposes.

The video opens with a pile of plastic containers resting on the concrete front stoop of one of Molyko's typical *mini-cité* apartment buildings. In the courtyard, a woman grinds pepper on a stone and a man adds a pot to a pile of dirty dishes. The main character, a young woman Lydia, steps out of her room onto the verandah: "*Weh*, all my containers are empty. I don't have water this morning. What will I do, *ehn*? I just pray that water is flowing-o."

Slipping her feet into her flip-flops, Lydia takes a bucket and walks a few meters to the tap in this compound. The camera rests on a single tapstand that drips slowly. Lydia puts her container down and goes to turn the water on, only to find it is dry: "No water. Dry season, as usual! What am I going to do? To carry [water from] that stream? Oh, King of Glory, just help me. Because I don't know what to do-o! That water is not even good."

The camera zooms down the small hill to a stream that weaves through the neighborhood. Several people stand in the stream with buckets and piles of laundry, engaged in various types of activities. As Lydia walks down the hill, she calls out: "*Eh-eh!* What are you people doing, like that, *ehn*? ... You are urinating, sir? Inside the water? Even you... throwing [trash]?"

As Lydia arrives at the stream, the camera shows a man urinating in the stream. One woman looks down and brushes her teeth. Another woman empties her bag of trash. Lydia is incensed: "Water that we are using for drinking?!"

The man dismisses her concerns: "What do you want me to do? [Leave] me alone..."

Lydia retorts: "I should [leave] you? Water that I am going to drink? People are using it to cook. I should [leave] you alone?! You are urinating inside the water that I am going to use for everything. This is the only source of our drinking.... The only source that we can have good water, for now, because water is not flowing."

She looks around, "And I am very thirsty, now. What am I going to do? To drink this water? I will drink it? What will I do?" Lydia dips her bucket into the stream, not far from where the man was urinating, and takes a small packet from her pocket: "Anyway, let me just try and purify the water."

Lydia sprinkles the white powder (likely chlorine) into the bucket, and swishes her hand in the bucket to mix it in. "*Weh!* Look at what I am going to drink-o. Look at what I am going to drink! Hey!" She cups one hand, brings water to her mouth, and takes a sip.

As audiences cringe at this difficult compromise, the camera pans upstream to show dozens of people standing at different points along the stream doing laundry.

This video portrays how streams are busy spaces, in particular when centralized water networks are not flowing, and how water is used for multiple purposes. During participatory analysis, Faith summarized the video storyline:

If you look at the situation, the young lady ... wanted to bathe and there was no water. [She went] to the tap and the tap was not flowing. There was somebody who was grinding pepper, somebody who was cooking [...] You see? That same area where people were using it... that guy was peeing there [...] The other lady was washing her mouth. The others were doing laundry [...] Everybody was busy doing his or her own activity [...] And somebody was coming to get water, to drink or to bathe or to do other household activities. In that same water! [...] From what the camera focused on, you see it... there was [garbage], which means people go there and deposit their waste in that water [...] Even the surrounding pool, you see how the stream has been littered all over with our waste.

This discussion drew attention to the impact of everyday practices of households and communities on water quality. Ultimately, these insights shifted participant perspectives and offered areas for intervention where communities could work together to change their water practices and better protect communal water sources.

The video also elicited concern about the health impacts of a lack of toilets. Hannah reflected on the situation in one Buea neighborhood, Mile 16: "What struck me, especially where the boy was urinating in the same water where they were drinking... That is real, in Mile 16. That is a real life story in Mile 16." Fresh in participants' minds was the 2010 cholera outbreak in Buea's downstream neighborhoods, where runoff from this mountainside city accumulates. When streams are used as toilets, communities remain, as Hope noted, "a big target for cholera attack," a risk only accentuated during the rainy season. Critically, women shoulder a primarily responsibility for caregiving, such that incidents of water-related illness increase women's workloads. Participants noted particular concern for the health of children and elderly people, who are—as a function of age—more vulnerable to bacterial infection.

Along with these health-related impacts associated with sanitation, many women problematized gendered norms related to public urination. Given how male bodies anatomically facilitate urination while standing, a lack of public toilets systematically discriminates against women. Yet the women in this study also drew attention to the particularities of attitude, as portrayed by the man urinating in the video. Faith exclaimed: "He is a university guy! [...] When he was peeing, he did not even care ... there are girls there who can even see him." Hope commented:

That is the attitude [...] Are men saying that women don't feel like peeing when we go out? We also feel like peeing, but we don't just go around peeing anywhere! So this is the kind of culture in our communities...

Adding to health concerns, women worried about public decency. Implied in these statements are women's decisions not to urinate in public (or to do so more discretely). That some men do signals privilege, that men are less impacted by the lack of public toilets. However, as women indicate, urinating in waterways is also disrespectful because it directly impedes women's daily responsibilities to source clean water for their households.

## **Embodied Intersections**

Despite the presence of infrastructure (tanks, pipes, taps) for centralized water systems in each research community, these systems are unreliable sources of water. Water services are sporadic or low quality, so households must rely on alternatives such as springs and streams. Even wealthier households with private in-house connections sometimes rely on "going out" in search of springs and streams to cope with unreliable piped supplies. In this context, these three videos demonstrate 1) how gendered social relations are also influenced by the materiality of water and sanitation, and 2) the striking role of the body in mediating these water-society relations.

Importantly, carrying water is low status work. While integral to survival and the daily rhythms of communities, this labor is distributed unevenly within social hierarchies; delegated to lower status members of society in ways that refutes single-axis analysis. Water collection labor is determined according to intersecting dimensions of gender, age, ability, marital status and class. With the responsibility for water, many women assign this work to girls, sometimes boys, and house helpers in wealthier households. As women get older, their responsibilities to collect water shift to younger household members. Gender plays a significant role shaping the divisions of water labor, yet gender also intersects with other forms of difference with age and social status as critical determinants of water-



related responsibilities. As depicted in particular in Video 2, these roles are shaped and at times disciplined through embodied and emotional gender violence.

Adding to interpersonal violence, carrying water *produces* embodied physical strain, the sheer physicality of which deserves appreciation. Most water carriers head out on foot and tote water containers by hand, or on their heads. For a relatively small household of four, for example, a girl or woman might feasibly carry 160 lbs of water every day<sup>5</sup>. Not only is water quite heavy, but as a liquid, it also shifts its weight when moved and sloshes around in containers creating additional pushback for water carriers to contend with. Thus water's weighty materiality creates particular embodied experiences, unevenly distributed according to social status.

As evoked particularly well in Videos 1 and 3, water access also involves distinct material negotiations with the environment. Alternatives to piped supplies, such as springs and streams, are only found in particular locations. Hydrogeological features, including topography, the water table and soil type, significantly influence where water travels and collects in the landscape. These circumstances are not uniform, but spatially and temporally differentiated. Such environmental heterogeneities combined with water's own vitality to move and flow, influence how water carriers need to navigate particular pathways that crisscross both urban and rural landscapes and involve particular gulleys, hills, bushes and neighborhoods. Environmental placements of water also influence *how* water labor is allocated, reconfiguring gendered experiences. As participants described, the gendered responsibilities for water sometimes change when carrying water longer distances and over difficult terrain. When water carrying becomes paid work, water porters, pushcart operators and motorcycle drivers—all men—generate income. In the critical disaggregation of men's work, we also note how these paid roles are deemed unskilled and low class labor, differentiating which particular men in society are likely to take up this work.

Shifting to questions about sanitation, bodies also mediate the materiality of water quality through ingestion, contact and expulsion. Recent scholarship on the politics of open defecation frames the relationship between bodies and sanitation infrastructure as embodied materialities (Truelove, 2011; Desai, McFarlane and Graham, 2015). Our study broadens the embodiment of sanitation beyond defecation to include skin contact and expulsion of other bodily processes. In Video 1, the changing chemical and bacteriological content of particular waters acted on women's bodies in visceral ways to include vomit, diarrhea and skin rash. Participants expressed concern that while water quality impacts everyone, particular bodies such as children, elderly people and people with existing illnesses are more vulnerable. In Video 3, discussions of gendered norms regarding public urination signal both how a lack of toilets systemically discriminates against women, but also enables forms of male privilege. Public urination, in particular in moving streams, shapes water quality as well as women's water collection experiences. An intersectional lens that includes the heterogeneous distribution of water in the physical environment *along with* questions about sanitation, as well as the social, political and economic gendered inequalities of water articulates a more comprehensive view of the gendered nature of water.

Exploring gender-water relations using PVMs offers opportunities to move beyond this close analysis of women's labor, experiences and concerns that describes intersectional relationships to also incorporating intersectional impetus of political action. Positioning participant agency as central for identifying, representing, analyzing and addressing critical issues in their lives not only broadens how knowledge is produced, but also pushes the research process to interrogate what it means to instigate change. Characterizing springs and streams as important coping mechanisms for water shortages, participants advocated for better water protection measures. Their recommendations included locally-driven sanitation interventions such as increasing the numbers of public toilets, preventing developers from building in catchment areas, implementing public health campaigns, and organizing communal labor cleaning initiatives. Participants also addressed gendered structures of power, articulating the general lack of involvement of both women and communities in decision-making about local water projects. While beyond the scope of this paper, these concerns spurred dialogue about the role of leaders at maintaining or changing traditional cultural protocols, mechanisms for accessing government funding, and ways to encourage more women to *want* to take up leadership positions. In the context of urban water privatization and the tenuous progress of decentralization, these intersectional politics disaggregate not only the experiences of different women, but also the uneven relations between men, and finally how

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<sup>5</sup> Given an average daily water use of 20 L per capita in Buea (Folifac 2013), each person would require one standard yellow jerrican (about 20 L) per day. As each jerrican weighs approximately 40 lbs, small households of four people would thus need 160 lbs of water per day.

water issues differ from community to community, based, in part, on the changing materialities of water and sanitation.

## Conclusion

Gender is a critical lens for making women's work with water more visible within the water sector. In many ways, the significance of disaggregating households and better addressing the gendered nature of water use, access and control remain grossly overlooked in mainstream and technical approaches to water management. Within these efforts to acknowledge and incorporate gendered differences within water projects and thinking, intersectionality offers an important analytical tool for complicating and disaggregating gender relations. Intersectionality offers a critical lens for particularizing and differentiating how social power is intimately linked with water resources. As we suggest, gendered experiences are not just social, but intimately entwined with the materiality of water. Material environments *also* shape social structures of power. This is not a deterministic claim, but a more nuanced assertion about the need to investigate how the materialities of entities such as rain, mountains and water pollution interact with experiences of power and oppression. Water's material characteristics and uneven distribution on Earth complicate the social dynamics of power, shaping human experiences of privilege, identity, burden and discrimination. Intersectionality offers an important framework for investigating hydro-social privilege and discrimination. These critical interrogations about the active and co-constitutive role of water and sanitation in gender and power can push feminist intersectional thinking and action beyond social analysis alone. Incorporating water and sanitation as embodied materialities into intersectional analyses offers opportunities to deepen understandings of human experience, but for also re-conceptualizing and transforming water-society relations in more equitable and sustainable ways.

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