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EDITED BY

Amit Mitra,
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Victoria Constanza Ramenzoni,
Rutgers, The State University of New Jersey,
United States

*CORRESPONDENCE

Cynthia T. Fowler
✉ fowlerct@wofford.edu

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Bura ura, kendu waiyo (rain falls, water rises): the tyranny of water insecurity and an agenda for abolition in Kodi (Sumba Island, Indonesia)

Cynthia T. Fowler*

Sociology and Anthropology Department, Wofford College, Spartanburg, SC, United States

This article explores the dynamic links between transformations in freshwater ecosystems and social changes in the Kodi region of Sumba (Indonesia). Insights into the politics surrounding changing hydrosocial systems are generated by using a feminist anthropology approach together with critical development studies and intersectionality theory. In aligning with fellow feminists whose advocacy sometimes takes the form of scholarship, I lay out a five-prong strategy for collecting empirical evidence from persons who are vulnerable when hydrological systems change and offer eight principles for future development interventions. The argument related to the five-prong toolkit is that by conducting intensive, extensive, opportunistic, and longitudinal research and by allying with grassroots interlocutors, interventions into water systems can be based on better evidence and can be socially just. Three stories about Kodinese interactions with water and experiences with change are at the heart of this article and lead to the formulation of consequential conclusions. In the first story, birth, death, and relocation intersect with changes in the type of reservoir and the tools and vehicles used to manage water. In the second story—the origin for “tyranny” in the subtitle—vulnerability to food and water scarcity emerges and is politicized when a river’s flow is altered. In the third story—the basis for “abolition” in the subtitle—hydrological interventions perpetrated by extrinsic governments correlate to surveillance and incarceration by the military and paramilitary. One research finding is that interventions by extrinsic agencies into the hydrology of four connected watersheds have altered hydrosocial relationships. Another finding is that as water’s routes shift, people adjust to new conditions with mixed outcomes. A third conclusion is water utilities have differential benefits within the Kodi community. Fourth, benefits from water development have dispersed along already existing lines within the social structure. Finally, intracultural differences related to intersectional identities coincide with variations in access to natural and developed sources of water.

KEYWORDS

water, Sumba, Indonesia, Southeast Asia (SE Asia), intersectionality, development, feminist anthropology

1. Introduction

Feminist scholars who devote themselves to studying the unique experiences of marginalized persons situated in problematic contexts understand feminism as a “politics of changing the world” [Ahmed, 2022 paragraph 16 (referencing bell hooks)]. This article contributes to the hooks-Ahmed mandate to be an activist by explaining change *in* the world. In aligning with fellow feminists whose advocacy sometimes takes the form of scholarship, I lay out a plan for collecting empirical evidence from persons who are vulnerable to hydrological changes imposed upon them by external agents and offer a set of principles for future hydrological development. In one of the endless potential formulations of feminist scholarship about the politics of water—in other words, a “feminist water politics” (Joshi et al., 2022 under About the Research Topic)—this article uses critical development studies and “intersectional ... theoretical lenses to examine inequities experienced by those of marginalized ... identities” (Lackey, 2023, paragraph 1).

My analysis of the mutual constitution of water and human lives is captured in this quote from Sara Ahmed: “Crafting a life is political work” (Ahmed, 2017, p. 227). In one frame, this quote is about scholars such as Ahmed who craft their lives by deciding who, what, when, why, and how to do scholarship as well as by determining the voice, style, tone, and outlet for sharing their research results. In another frame, Ahmed’s definition of life is a scholarly method for learning about individuals and societies. As a methodological premise, her definition of life generates a key question for me as an ethnographer working across the disciplines of anthropology and ecology: what are the water politics that people have crafted in the course of their lives? Here, water politics refers to the ways water appears in people’s performances of their identities as they maneuver through their roles and statuses within societies as well as in their expressions of their perceptions of the biophysical environment and their experiences interacting with natural resources.

In this article written for a special issue of *Human Dynamics* focusing on feminist water politics, the premise begs the question, what are gendered experiences within a community? When viewed through the theoretical lens of intersectionality on Sumba the question of gendered experiences broadens into questions about the Indonesian state, development, and environmental variability as “interlocking” systems of marginalization (Combahee River Collective, 1978; Crenshaw, 1989). Sumbanese society is internally stratified (Kapita, 1976; Forth, 1981; Hoskins, 1993; Vel, 2009) along dimensions of not only gender but also crosscutting identities of lineage (Goh, 1991), clan and subclan (Needham, 1987), class (Vel, 2009), religion, marriage (Needham, 1957; Forth, 1981), age, language and literacy (Keane, 1997), education, and other markers. Thus arises the aim of studying intracultural differences in the water politics of individuals and subgroups intrinsic to Kodi society.

Changes in freshwater ecosystems and social changes are differentially experienced along multiple dimensions of identity and at manifold scales from the watershed to the planet, from the individual to the global. Whilst freshwater ecosystems transform due to hydrological, ecological, and climatological processes, they are also undergoing changes due to social processes occurring within human communities. The social changes that accompany

hydrological modifications are noticeable at various scales ranging from individuals’ daily lives to the organization of subgroups within the Kodi society. Kodi is the name of an ethnolinguistic group whose territory—also named Kodi—is on the western end of the island of Sumba in eastern Indonesia. Three stories are presented in this article as a means for illustrating interlocking hydrosocial changes. In the first story about the evolution of a multigenerational household, we see how birth, death, and relocation intersect with the type of reservoir and the tools and vehicles used to manage water. A second story—the origin for the placement of “tyranny” in the paper’s subtitle—illustrates the politicization of increases in vulnerability to food and water scarcity that quickly emerged when a river’s flow was radically altered. This commentary links the current matured, postcolonial Decentralization era in Indonesia with the historical context of expropriation extending back into the pre-colonial, colonial, and Indonesia’s early, postcolonial New Order era. Nowadays, multiple parties are engaged in numerous conflicts and contestations, including ones caused by development of water utilities. The third story—the basis for the concept of “abolition” in the article’s subtitle—questions the collusion of hydrological interventions perpetrated by extrinsic governments with the surveillance and incarceration of citizens by the military and paramilitary. Read together, this paper forms a cohesive narrative that demonstrates the value of a dynamic framework for understanding the links between freshwater ecosystems and the lives of agropastoralists living in a semi-arid, monsoonal environment situated within a postcolonial nation. The goal for presenting the qualitative data from Kodi in this format is to demonstrate how we might learn to hear and understand the nuances of water politics. We begin now with the first story, Reservoirs of Resilience.

1.1. Reservoirs of resilience

Maha Muda¹ walked through the gate carrying a three-liter jerrycan full of water in each hand. She set her load down between the concrete house—still unfinished after 20 years under construction—and the thatch house where her family resides. Maha Muda exchanges plans with her 23-year-old daughter, Ria, and exits the gate again. Within 15–20 min, she returns with two more jerrycans full of water; this time, on the back of a moped driven by her 16-year-old son, Yuda. She climbs off the moped with the jerrycans and sets them down next to the other two before Yuda rides off to go visit his friends.

Yuda is Maha Muda’s third child and oldest living son. Her first son, Wati, was born in 1996 and died in 1997, the year I met her. Wati’s funeral, held after he died at 10 months old of brain malaria, was the first one I attended that year, which was a year of an extreme El Niño-induced drought and a great famine. Maha Muda and her husband, Piro Kedu, lived in Waiholo Village with his parents, Nenek Kali Ghobba (Grandmother Kali Ghobba) and Kakek Pari Tene (Grandfather Pari Tene). Their house was

1 Pseudonyms are used for all persons mentioned in this paper to protect their privacy. Prior consent to participate in the ethnographic fieldwork that led to this article was obtained from all of these persons.

next to the elementary school where Kakek Pari Tene taught and 0.40 km from the spring that became the name of the village: Wai Holo (*Pikul Air* in Bahasa Indonesia), which literally means “Haul Water” where the specific method to haul (*holo*) is the old timey practice of filling long, wide sections of bamboo stems with water and bearing the weight on top of one’s shoulder. By the 1990s, Kodi women were using buckets instead of bamboo and hauled water using the *junjung* (carrying a load on top of the head) method.

After Kakek Pari Tene died, Maha Muda, Piro Kedu, 1-year-old Ria (their second baby), and Nenek Kali Ghobba moved 5.47 km westward to a roadside lot on the edge of Kori Village in 2001. In this place where they constructed a home out of pandanus siding and alang roofing, Maha Muda had three more children: a second daughter, Nita, her son Yuda, and another son Alfon. The Kori River, which came downhill from the hills of Noha Village, ran year-round 0.24 km away—across the street and through a few rice-corn gardens. The waterway was long enough to spread out the bathers and give everyone plenty of room to wash their clothes. Closer to her new home than the Wai Holo spring was to her old house, accessing water and hauling it home for domestic use became slightly easier for Maha Muda. Twenty-two years later her work is slightly easier again since her neighbor’s concrete cistern where she collects water—unless she can capture enough rainfall to supply her needs—is closer than Kori River and she can choose between motorized and non-motorized modes for hauling her load back to the house.

Fortunately, Maha Muda has the options of getting water from a neighbor’s cistern or from the community tap in the backyard of another neighbor’s house. The pipe connected to the community tap is fed by the Mata Loko River, which is upstream to the east and on the opposite side of Wai Holo from Kori. Even though the pipe from that same system is laid underground through Maha Muda’s front yard, it does not service her house.

The Kori River is no longer a source of water because it stopped flowing in 2011 or 2012. Many households previously relied upon the river to meet their water needs when rainwater was unavailable. Kori River used to flow year-round with clear water fed by springs. For roughly a decade now the riverbed has been empty when it does not rain and, when the monsoon rains begin, the river water is muddy runoff that is not potable or even clean enough for washing clothes. Opinions about the cause of the river drying up vary from the personalistic to the naturalistic. Maha Muda, whose explanation falls within the former category, tells the story of a man who lives upstream in Noha Village who was bitter about a land conflict and damned the river with boulders and concrete as an act of aggression against his enemies. Maha Muda is unsure where the dam is located. She tells a story about the occasion when her husband Piro Kedu participated in an upriver expedition to locate the blockage, but his crew failed to find any causes. That expedition was shortly after the water stopped flowing in 2011 or 2012, about 10 years before Piro Kedu died in June 2022 when he was merely in his early 40s.

While Maha Muda and Yuda were hauling water home from the neighbor’s cistern, Nenek Kali Ghobba was cooking

for her widowed daughter-in-law and her grandchildren, still grieving from the loss of their father. As she cooked, Nenek Kali Ghobba moved from the outdoor kitchen to the unloading site; back and forth to take water from the jerrycans as needed for the food she was preparing. In her time of mourning, Nenek Kali Ghobba has been focusing on nurturing her grandchildren and guarding against the dangerous forces that took Piro Kedu from her and continue to threaten her family. She has taken on the role of guardian of the household and rarely leaves the property. Her team is tight, though, because the others venture out for work (Maha Muda in her gardens; Ria in the health clinic across the street; Nita, Yuda, and Alfon for school and play) and supplies (water, garden vegetables, store-bought consumables, etc.) while Nenek Kali Ghobba manages the supplies once they are in her compound and transforms them into nourishment for the members of her household plus a steady stream of visitors.

Nenek Kali Ghobba tends to the chickens, dogs, cats, and pigs. She cooks all of the nutritious meals centered around rice, taro, cassava, bananas, corn, coconuts, jackfruit, tomatoes, squashes, fish, and more locally-grown or caught foods usually garnished with chilis and salt. Many if not most of her dishes are cooked in freshwater, some with homemade coconut oil. After her team brings home water, Nenek Kali Ghobba decides how much to use in preparing the food she cooks over a large, wood-burning hearth. She determines when and how to clean the water by boiling and/or filtering the limestone sediments. She leaves enough for bathing, washing clothes, feeding animals, and other needs. She sends Yuda, Alfon, Ria, or Maha Muda for more water and ingredients when she needs them. Nenek Kali Ghobba’s role in managing the flow of water is a substantial, meaningful part of a story about “the material, physical, as well as emotional experiences of vulnerability that women face” (Joshi et al., 2022). In presenting this story about the gendered relations with water across the “seasons” in the life history of a multigenerational household, I set out to convince readers that the level of detail provided in ethnographic reporting is necessary for reforming policy narratives.

2. Methods

2.1. A five-prong strategy for learning about women and water

Placing this detailed first story in the Introduction is meant to open with a “thick description” (Geertz, 1973) generated as the result of “deep hanging out” (Rosaldo, 1994), which Geertz defines as “localized, long-term, close-in, vernacular field research” (Geertz, 1998). Story number one illustrates the trickiness of eliciting information about water. One reason learning about women’s relationships with water is tricky is because managing water is embedded in daily living, and is therefore challenging to objectify. Water management is similar to the everyday routines of preparing pig feed; moving cows to fresh pastures; processing grains by grinding corn, or pounding and winnowing rice. Reflecting upon these activities when prompted by the questions of a foreign inquirer does not always interest Kodi women. However, they

regularly discuss these daily routines in conversation with one another and foreigners when unprompted.

Another reason is because Kodi women perceive outsiders who come to their territory and ask questions about their lives as being interested in “culture” defined as “tradition,” “history,” “ritual,” and “festival.” Women therefore redirect foreign inquirers to traditional knowledge holders (*Ketua Adat*, Traditional Head in Indonesian) and ritual elders (*To Yaigho*, Lead Ritual Performer in Kodi) who are most often the men who possess the authority to narrate histories and perform ceremonies. It seems that Kodi women have internalized what men do as what foreigners find interesting and worth documenting.

Two additional related reasons may be that the reluctance to share information is a way of delaying and also perhaps sometimes a form of resisting the requests to share personal information with outsiders. Regardless of the reasons, the phenomena of Kodi women—sometimes and certainly not all the time—shying away from being interviewed indexes gender relations and social relations in general hinging upon intersectional identities.

Given these conditions for learning about interactions between women and water, how might outsiders (e.g., aide agents, nonprofit workers, developers, policy makers, applied researchers) come to know what is happening on the ground *before* intervening, which is the recommended order for proceeding with aide, development, and policy work? To answer this question, this article presents ethnographic information about the Kodi community. The Kodi case is particularly compelling as it entails an Indigenous society whose territory—located in a highly seasonal climate and a postcolonial nation—has been selected by governmental and nongovernmental entities for water development projects.

A five-prong strategy to deeply learn about the cultural ecology of a place prior to intervening in freshwater ecosystems can be extracted from this ethnography. The five-prong strategy is to learn about a community through extensive, intensive, opportunistic, long term, and allied methods. As the article unfolds, the constitution of each prong will become clearer; however, brief elaborations are provided here. Extensive information gathering is necessary to see how water fits into the lives of members of the different strata within this society that is stratified at multiple scales from the household, subclan, and clan, to the island, region, nation, and globe. Intensive research is needed to see the mundane and subtle interactions between people and water. Opportunism is necessary for witnessing the many, daily interactions between people and water whenever and where ever they happen and to attempt to see what they look like when not altered for outsider audiences. Long term research is the only way to come to know changes over time in the environment, such as seasonally and annually with monsoonal shifts, El Niño-La Niña oscillations, and Indian Ocean Dipole undulations; social groups, such as with individuals' life histories; and development, to witness conditions before and after. Allyship is built through the four other components in this strategy because community members deserve the opportunity to get to know people who wish to be their allies and because the prospective allies need to know local politics to learn with whom, when, where, and how to stand alongside community members.

2.2. A dynamic framework for assessing the links between gendered hydrosocial relations

By taking this methodological five-prong strategy for studying cultural ecology and expanding it to include water—one of the major subjects of interest here—a dynamic framework for assessing the links between gendered social and hydrological relations can be constructed. The point of the five-prong strategy is specifically to adequately learn about people's interactions with water. The ethnography is not a side project, in other words, but a vital means for learning about hydrological systems. Ethnographers can be included in projects of many sorts, including charity, non-governmental, and scientific. Ethnographic techniques can complement the methodologies and toolkits of any other approaches or disciplines. Vice versa, ethnography can take on methods from other information-generating endeavors and can draw upon the results of research produced by scientists of many types. In the 25-year span that I have been doing ethnography in Kodi, I have utilized methods and/or theories and models from agroecology, agronomy, botany, fire ecology, spatial analysis, oceanography, and freshwater ecology. Whereas I see the value and respect the scientists in these fields, I would ask for reciprocal valuation of ethnography, perhaps in a mutual aide sort of relationship.

2.3. Labels across cultures

To address the topic of this special issue of *Frontiers Human Dynamics*, a politics of water emerges that is culturally specific yet also resonates with the politics of other communities around the world. To call Kodi politics “feminist” would be to use a label that I as a non-Kodi, American, Generation X, cisgendered, woman use to identify my own politics. I hesitate to do this after being taught by an American colleague, who is indeed a feminist, not to impose the label on other women or, more pointedly, to let other women define what *kind* of feminist they are. Using a feminist frame for water politics here is therefore a hybrid position combining Kodi and non-Kodi sentiments.

Feminist scholars from numerous disciplines advocate for social justice by examining the influences of intersectional identities among the agents at play (including the researchers' positionalities). A few examples from fields that I draw from in this article are feminist anthropology (Davis and Mulla, 2022), ecofeminism (Mies and Shiva, 1993), feminist political ecology (Rocheleau et al., 1996), feminist sociology (Hendrastiti and Kusujarti, 2019), and feminist geography (Kwan, 2002; McLafferty, 2005; Hong, 2016). The work of feminist scholars who study the gendered dimensions of water (e.g., Sultana, 2009) often spans multiple disciplines. Were I to specify what type of feminist I am, it would be “feminist anthropologist” where my approach to rights is based upon the findings from 100+ years of anthropological research and includes the viewpoints of humans and more-than-humans around the world throughout time. I am also a “feminist activist” where my activism takes the form of studying, researching, teaching, writing,

speaking out, and showing up to promote the political positions of myself and my allies.

Being an activist feminist anthropologist with regard to the topic of this special issue of *Frontiers Human Dynamics* began with listening to what Sumbanese said to me and asked from me. Among many other requests for tangibles and intangibles, numerous people with various identities and positionalities have, over the years, asked me for assistance with finding relief from water insecurity. My response has been to obtain funding for a fieldwork project focused specifically on freshwater ecology² whose aim was to document what Kodi people want to share with outsiders about their relationships with water. Subsequently, the plan is to share the results from that research linking cultural ecology and freshwater ecology in the form of written and spoken texts. Now, on to story number two illustrating Kodi People's worldviews and their critiques of development and injustice.

3. Results

3.1. The tyranny of water and food insecurity

The conversation had become ripe for bold metacommentary. The interlocutors—members of a farming family living in Kiku Mbembe Hamlet in the floodplain of the bone-dry bed of the Kori River—had talked their way from explaining the current situation through to the backstory about the river drying up and the harvests declining. The audio recording was off, the field notebook was closed, the pen was put away and then came forth the biting commentary.

“Once in the past, foreigners colonized us. Still now, water and food tyrannize us.” Deta Dari made this comparison between the feeling of being colonized by external political economies with the feeling of being tyrannized by deficient basic resources. To be tyrannized by water and food is similar to being colonized by foreigners. Deta Dari, who provided this insight, is a son of the family's widowed matriarch, Nenek Kaka Daha (Grandmother Kaka Daha), the husband of two wives, and the father of eight boys and girls. Several justifications make this man's quote suitable for inspiring the subtitle of an essay about feminism, the principle one being that Deta Dari's analogy establishes a frame for connecting enduring large-scale, historically deep political processes with acute local livelihoods. Secondly, Deta Dari's activist stance toward water raises questions about gender roles, possibly providing a route into problematizing the conventional water-gender link circulating in development discourses. To be inclusive, a collective for advancing a feminist water politics is open for people of all gender identities: women, men, non-binary, two spirit, mahu, trans, and more gender non-conformists. Thirdly, working with Deta Dari's analogy

² From August 2022–January 2023, I carried out the project titled “Linking Global Change with Global Health: An Ethnography of Water Security among Indigenous Women and Children in Indonesia's Arid Southeast.” This project was funded by the Fulbright U.S. Scholar program. The project was intentionally designed in response to requests for assistance with documenting the challenges of accessing water of adequate quality in sufficient quantities.

means approaching the proposition of a feminist water agenda from an insider's purview; or, perhaps more accurately from a combined, hybrid emic-etic stance where an ethnographer's academic approach is combined with Kodi People's ideas.

This ethnographer's contribution to a feminist water agenda relies upon many published authors, of course, who are cited herein. As a way of participating in ongoing feminist work across academic disciplines (Smith et al., 2021), many of the authors who are cited here identify with underrepresented and marginalized communities; namely, Indigenous, Indonesian, Asian, Black, and multiracial women, non-binary, gay and lesbian scholars. As an ethnographer, my approach is grounded in the everyday lives of the community within which I am immersed. In the Indonesian case, rather than the community being an academic culture where publishing and being cited is a means for advancing one's status and improving one's socioeconomic conditions, the national culture is one where critical literacies practiced in a post-Authoritarian state take the forms of negotiating power structures and labor rights for domestic workers; advocating for free expression and critical thinking; questioning the hegemony of formal education; and engaging in projects to improve socioeconomic conditions (Sakhiyya and Hapsari, 2022). At the national level, feminist scholars such as Esther Kuntjara push back against patriarchal education based on masculinist forms of knowledge and ways of knowing and seek gender equality through honoring affective knowledge, care, and connection, and valuing personal experiences and diverse values (Kuntjara, 2005). At the sub-national level, some Sumbanese women see formal education as one avenue for empowering themselves and their families. Yet, many women's children do not possess the skills supposedly acquired through formal education. For example, in the regency of Central Sumba, 30% of elementary school children in grades 1–3 are not able to read, write, or count (Voi Editorial Team, 2021). In the Kodi region of the Southwest Sumba Regency, girls ranging from elementary to high school attend school more frequently than boys. Upon graduating from high school, some Kodi girls seek degrees in higher education, usually at off-island institutions, with the goal of becoming qualified to be hired in income-producing jobs; for example, as teachers, healthcare workers, and staffers in government agencies. Participation in higher education—and even aspiring to do so—is one point where stratification within the Kodi ethnolinguistic group becomes strikingly apparent, however, as it is the elite families whose daughters are able to pursue college degrees and having college degrees raises the socioeconomic status of families and increasingly stratifies the society. Producing a literate elite is an intended consequence of formal education, since it was part of the Dutch colonizers' institutionalization of formal education in Indonesia from the 1920s through the 1940s (Sakhiyya and Hapsari, 2022) and part of missionaries' efforts to convert Indigenous people's to Catholicism and Protestantism from the 1800s through the 2010s (Steenbrink, 2015). But, while Indigenous Peoples were originally excluded from state schools, they constitute nearly 100% of students in Kodi's schoolhouses.

The Kodi people who are centered in this article provoke reconsiderations of the culturally-specific boundaries held by this multigenerational South Carolinian author between professionalized “work” and the personal self in ways relevant to

the topic of this special issue of *Human Dynamics*; for example, when I set out with the intention of inquiring about water and Kodi interlocutors flipped the interviews into asking very personal questions about me and requesting cash and material goods. Or, when Kodi interlocutors label me as rich upon observing my possession of tools of the trade (pens, notebooks, bags, clothes, food, bicycle, laptop) and the ways I compensate interlocutors (with betel-areca, cigarettes, cash, micro-grant acquisition, pens, notebooks, bags, clothes, and other consumer goods). These frequent prototypical occurrences are valuable for understanding Kodi People's worldviews and their critiques of development and injustice.

Turning the gaze back on to globalized systems and their symbols, Kodinese explicitly remark upon the inequities they witness and frequently offer solutions. In the Kodinese applied countergaze, redistribution of wealth and access to resources are the primary means for righting systemic marginalization. While they may desire being saved from the effects of having unmet basic needs—namely water and food in Deta Dari's statement—I am not interpreting their sentiments as a request for a white savior nor do I comport myself to attempt to play that role. White saviorism is not at the heart of this analysis; however, the backlash (Sosa, 2022) within academia against ethnography and particularly projects with a community engagement element have caused me to be critically reflective about non-Kodi perceptions of me relative to the sorts of complex situations ethnographers may encounter. What is needed in the contentious dialogues about engagement is a distinction between white saviorism and allyship. We need to recognize the difference between charity that disproportionately or selfishly benefits the benefactor and a type of advocacy where ethnographers “[see] the dismantling of oppression as a shared project with interlocutors” (Sosa, 2022, p. 200). To give an example from my work, I have produced Western-style maps that document traditional territories and how people move through and dwell within them (Fowler, 2023). In making these maps using qualitative GIS methods, I have been anticipating a future time when Kodi People find them useful in designing and illustrating details about tenure regimes, or in negotiations with developers or real estate agents, or in defense of water, land, and resource rights (Fowler, 2022), or in managing environmental changes.

Here, I juxtapose the statements of local domestic water users against globalized agendas for water interventions to show how listening deeply to women can disrupt neatly arranged models of island ecosystems. Local water users' statements themselves become the subject as the analysis deepens and the questions turn to asking what culturally-specific statements sound like, what they contain, and what they are meant to do. Turning an ear toward hearing the opinions and discerning the politics of women while reading the representations of domestic water users in external institutions' publications highlights distinctions between their perspectives. More importantly, this method enables us to hear what people are saying about their experiences, needs, and desires; what they are telling us they need and what they are asking for; superficial meanings and underlying messages; as well as the speakers' counternarratives, struggles, and protests if and when those are present (Hendrastiti and Kusujiarti, 2019). What are women's stories about water and changes in water ecology and infrastructure and what are women's agendas in telling their stories?

Who is listening, who is not listening and with what consequences? As a result of cross-cultural communication (Tannen, 1998), what we find is outsider, masculinist, and/or pro-development agents frequently miss not only the stories told by insider (Hendrastiti and Kusujiarti, 2019), feminist actors but also their explicit messages and their metamessages, or the implicit meanings that can be heard from being in the context and/or knowing the speakers (Tannen, 1998).

What are the perceptions of freshwater ecology and cultural ecology on Sumba Island? How are people managing freshwater ecosystems on Sumba and how do these management systems align with perceptions held by distinct communities of perceivers (i.e., domestic water users and developers)? When local people make statements about their perceptions of water, they may be communicating through messages and metamessages (Tannen, 1998). However, some listeners—depending on their positionalities—may hear messages and might miss metamessages. Some within earshot may be “deaf to sentiments expressed in unfamiliar ways” (Stoler, 2010, p. 174) while others may be conditioned to easily hear them (e.g., fellow members of the same community), and other may be able to hear them by putting in the work (e.g., allies, ethnographers). Masculinist, pro-development operatives are sometimes incapable of hearing what women are trying to say because of intersectional (linguistic, ethnic, gendered, nationalist, religious, classed and genealogical/clan) differences. Because some within earshot do not seem to already know how to hear metamessages, they may need to be taught; and ethnography is instructive. Because an unwillingness to listen (rather than ignorance) is held by some, feminist scholarship is necessary.

When the subjects of development interventions tell stories of resources and changes in them, their messages and metamessages are not simply always “facts” or “falsehoods” or even marginalized truths or alternative opinions, but they are sometimes also castings of information as a tactic for accomplishing tasks and achieving goals. Stories about changes in water over time are, like the memories of the Javanese postcolonial subalterns who Stoler writes about, “constructions of and for the present ... through which people interpret their lives and redesign the conditions of possibility that account for what they once were, what they have since become, and what they still hope to be” (Stoler, 2010, p. 170). Unpacking Deta Dari's imperialism-is-like-desertification analogy, as I have done with this story about a consequential shift in streamflow, reveals the coevolution of political ecologies and water poverty. Pulling apart the haunting analogy also sheds light upon the interlayering of aspirations of sovereignty with visions of abundance. Next, the third story turns to the military and paramilitary as colluding with the extrinsic agencies who direct hydrological interventions.

3.2. Access, privilege, and capital

Dada Lolo has many privileges relative to other women in her village, yet she has no running water. The source for most of her water is a concrete, above-ground cistern located outside of her house. During the Rainy Season she captures water using a homemade assembly of gutters made of bamboo, metal, and

twine that channels rain running off the roof of her house into the cistern. During the Dry Season she either purchases water from a tanker truck that delivers to her home, or from an alternative source such as her neighbor's cistern, or a natural reservoir. Many other women in Noha Village do not have concrete cisterns or faucets near their homes, and thus continue to rely on rainwater and natural reservoirs to source their needs. Cisterns and pipes have been providing water to a few of Noha's residents for 2 years. When Dada Lolo and all women in her generation were younger—and also women in all prior generations—they depended on rain, streams, and springs to supply water.

For those women in Noha who are privy to the benefits of development, their homes are located within proximity of a project that built two networks of hoses, pipes, faucets, pumps, solar panels, and holding tanks. Water flows through these two networks to some parts of Noha some of the time, but it does not flow all of the time or all the way to the inside kitchens, bathrooms, or other rooms inside homes. Instead, when the water is running clear, Noha's residents fill containers of water at faucets in their yards or at community taps located part-way between their homes and natural reservoirs. When “the sun is shining and the weather is sweet” (Marley, 1971) the water flowing out of the pipes is clean enough to harvest. Although it may contain some harmful elements, including limestone sediment eroded from the ancient coral reefs that form the island, the water can be boiled to kill off germs and filtered to separate the limestone. However, during the rainy season the water is too full of mud to filter. Regardless of the season or precipitation, the pumps do not always flow because they run on solar power: if the sun is not shining, the water is not running.

Each of the two networks of pipes is sourced from the point of a river's resurgence in Noha's hills. One source is *Wai Liang* (Wild Water) where a year-round river resurges after flowing for some distance underground. The section of the river that flows out of Wai Liang and through Noha is named *Labba Padu* meaning Bitter Areca in Kodi. At Wai Liang, the water empties out of a cave and, a few meters downriver from there a dam has been constructed and pipes installed to harvest a portion of the river's flow into one network servicing households downstream. The second source is a spring named *Wai Kendu* (meaning Where the Water Rises in Kodi as in the saying “*Bura ura, kendu waiyo* [Rain falls, water rises]” in Kodi), another resurgence site where the flow is abundant enough to supply a creek that flows downhill into a river that drains into the Indian Ocean roughly 20 km from this source.

Dada Lolo perceives the projects as being incomplete because they do not provide water for most of Noha's residents, including herself. For Wai Liang, Dada Lolo identifies the developers as “ProAir” (Rural Water Supply and Sanitation Programme in East Nusa Tenggara) and describes the leader as a “German.” Dada Lolo and her husband Ndara Tappa's second son, Domi, says the developer of Wai Kendu was a “preacher from Bali who moved back to his home island.” “Now the military manages the development,” Domi says.

At Wai Kendu, a buried metal pipe uses a combination of gravity and a solar-powered pump to deliver water out of the stream channel to downstream consumers. This system mostly bypasses the homes of Noha Villagers and services residents in downstream villages. The exception is a section of above-ground, pliable pipe that draws water out of Wai Kendu into two 6 × 4-m storage

tanks located <1 km uphill from the spring. This sub-project stores water and provides easier access for people living closest to the reservoirs. Both storage tanks are painted in bright blue and the second, farthest uphill tank has the message “*Negara Hadir Untuk Rakyat KODIM 1629/SBD* (The State is Here for the People Military District Command 1629/Southwest Sumba)” painted on the side in a brownish-gold hue. The mural tags the district-level unit (#1629) of the Indonesian National Armed Forces (TNI) that is stationed in the Regency of Southwest Sumba (SBD) who funded the project by paying for the materials and the labor of the crew of builders. The Commander of unit 1629, Tohir Yuswan Putra, claimed the motivations for the military were to provide the farmers in Noha with “easier access to drinking water, especially during the Dry Season” and provision of irrigation for “agricultural needs such as horticultural crops to reduce household expenses” (quoted in Tenge, 2021).

A “key executor” (Syailendra, 2017 under Babinsa as Enforcers) of the military's construction project and its ongoing maintenance at Wai Kendu is Gaudensius Bria, the resident *Babinsa* (Territorial Defense Manager representing the Indonesian National Military). Babinsas are village-level intelligence officers who are responsible for identifying and monitoring radicals and extremists in hopes of preventing terrorism. In 2017, a Babinsa in the Aceh region of Sumatra said he has been assigned to “gather intelligence on local community dynamics, conduct surveillance of local geography and infrastructure, and profile important local figures” (Syailendra, 2017). Thinking about Dada Lolo and her sons, I wonder if the children of “important local figures” are also surveilled and how, by setting up a second household in Noha while supposedly overseeing a water development project (which he did), Babinsa Bria would be well-positioned to keep watch over all of the Noha's residents.

Ndara Tappa has a vision of helping to provide running water for all of Noha's residents endures, however, despite feeling abandoned by the developers and having no alternative funding sources. More specifically, Ndara Tappa's goal is to extend the pipes that draw water from Labba Padu and Wai Kendu to all of Noha's *kalimbiatu*³ (hamlets in Kodi), and to connect them to communal outdoor faucets that can be used by multiple households. Kornelius Kodi Mete, the Regent of Southwest Sumba, has pledged to build a larger reservoir and a new network of pipes to deliver water to all of Noha's households, but he has not yet come through on his promises.

The members of Dada Lolo's bustling household consume a fair amount of water with six children and family members who frequently stay over. With a house that doubles as a political gathering place, she hosts a steady stream of visitors adding to the volume of water consumption. Among Dada Lolo's five sons and one daughter, the two youngest sons and the daughter are in school, the oldest son is a policeman, the second son is married with one child, and the third son is in prison. Having a prisoner and a policeman in the family is paradoxical in that unpacking

3 *Kalimbiatu* in the Kodi language means clusters of houses occupied by members of kin groups. “Hamlets” is commonly used as an English translation. In Kodi, each *Desa* (translated from Indonesian as “Village”) contains numerous *kalimbiatu*. *Desa* is an Indonesian geographical jurisdiction overlaid upon the Indigenous settlement pattern.

it may reveal some truths about the system within which it exists. The eldest son of a political leader aspires to earning an income outside of the agropastoral economy by utilizing his social capital and navigating a considerably corrupt and nepotistic system (Vel, 2009) to pursue a degree after high school in an off-island university, return home, and secure one of the few government jobs in the region to which he commutes daily from his parent's house. Like his older brother, the third son Ghera has hopes of upward mobility and moved to Waitabula, the nearest town 38 kilometers from his birthplace, to train for a government job. There, Ghera and some of the closest members of his subclan who had also moved there, continued to be each other's closest companions, allied to brace against the hot, omnipresent tension between the island's natives and the postcolonial State. These conditions resulted in an incident one mid-Dry Season evening when Ghera and six of his subclan-mates from Kodi were hanging out at a beach in the Loura District when a few off-duty Brimob (Mobile Brigade Corps) soldiers who were hanging around asked to "borrow" the guitar one of the cousins, Marten, was playing. After listening to the soldier play, Marten asked him to return his guitar and it quickly became apparent the soldier had no intention of returning it. Tempers flared and soon enough Marten, Ghera, and their five other cousins were fighting a gang of strangers who, because they were in plainclothes, were not identifiable as soldiers from Brimob, a paramilitary and special operations branch of the Indonesian National Police (Polri). Brimob has been deployed in Papua and other provinces where opposition to Indonesian rule have occurred (Monroe, 2013; Chua, 2021). Only as recently as 2020, Brimob established the new Pioneer Battalion C, the first to be based in Southwest Sumba, supposedly in response to high rates of arson, theft, and murder. More generally, Battalion C's job in the Southwest Sumba Regency is "to create a more conducive situation for security and public order in accordance with the demands and expectations of the community" (Lodja, 2021). Brimob's mobilization to Southwest Sumba is recent enough that the local residents, such as Ghera and his cousins, would neither be familiar with Brimob's operations nor able to recognize soldiers when they are not in uniform.

Back to the story about the incident: when Marten attempted to get his guitar back from the Brimob soldier, a fight broke out. In the tradition of Kodi, all of Marten's clanmates jumped to his side. Subsequently, the soldier's companions also jumped into the ring. The end result was Marten and all six of his cousins were treated as insurgents, severely beaten, and arrested. They were found guilty and sentenced to 3 years in prison. Any hope for an early release would involve a payoff of 20 million Rupiah (equivalent to roughly \$1,300 U.S. dollars), tremendous patience, and total devotion from their community. To provide some perspective, even with the backing of seven men's families, 20 million Rupiah is a nearly insurmountable amount of cash to raise in an economy where wealth is customarily stored in bartered goods (especially livestock, cloth, and crops) and cash is scarce.

The truth revealed by the brothers' paradox is a situation where the practices of a customary society's members irritate the sense of entitlement felt by State operatives. At the same time and nearby, one brother/cousin enforces laws and carry weapons for the State while the father/uncle collects taxes for the State

and displays the portraits of the President and Vice President. Meanwhile, the mothers, sisters, Aunts, and girl-cousins worry night and day while they actively seek support from those within their reach. They all want their loved ones to be freed from prison as soon as possible. Transferring this summary of structure and agency from police violence in the regency's coastal capital to water insecurity in a rural village in the hills, generates meaningful insights. In a postcolonial nation struggling to redefine its political economy, human resources are like water resources. When they are limited and competition for access is heightened, violence wielded by the already-privileged may be disguised as play and the people who suffer the most may be those who are already marginalized. In other words, intensive, longitudinal analyses of interpersonal dynamics cause the inequities present in the system to jump into view, just like a heavy monsoon causes water to leap up through the coral substrate: *bura ura, kendu waiyo* (rain falls, water jumps up).

Based on this story about Dada Lolo and Ndara Tappa, we could postulate two of their goals as being: (1) improve villagers' access to water, and (2) secure their son's and nephews' release from prison. This third story is thus about access and security, liberation and abolition. Having access to enough clean water is like removing restrictions to one's freedom. Being liberated from water insecurity is analogous to being untethered from imperialism. This is a truth we see coming from the combination of women and men's experiences.

People suspected of opposition to the Indonesian government are sometimes baited by the police, military, and paramilitary; some arrests are arbitrary; due process for people charged with crimes is not guaranteed in Indonesia (Freedom House, 2022). Freedom House gives Indonesia a 1 out of 4 on the issue of due process, a number that combined with other measures of freedom adds up to an overall rating of "Partly Free" for the country (Freedom House, 2022). Regarding gender, Freedom House reports that "Some national laws and numerous local ordinances discriminate against women either explicitly or in effect. LGBT+ people suffer from widespread discrimination, legal discrimination in some regions, inflammatory and discriminatory rhetoric from authorities, and attacks by hardline Islamist groups, sometimes with support from local authorities" (Freedom House, 2022).

Where "militarized care" that uses "softer" tactics to control occupied populations are "always gendered female" in Kashmir (Varma, 2020, p. 14), in the case of water development in North Kodi militarized utilities are patriarchal and elitist. Harmful biases against members of rural communities with alternative literacies are evident in missives such as this one from a KmZ-GIZ report about the ProAir projects in East Nusa Tenggara: "Rural communities may often appear slow in adopting new behaviors and adapting to change. This is often compounded by their limited access to information and knowledge" (Unger, 2011, p. 31). The gap between how Kodinese talk about themselves and their relationships with water and the ways ProAir represents eastern Indonesians as ignorant water consumers is wide. Moreover, the disjunction between what ProAir recommends or does based on their perceptions of Islanders' wellbeing is troubling. Three examples will suffice to illustrate the troubling policies and actions:

ProAIR made local people pay fees before they would build dams, pipes, holding tanks, and community taps; they expected people to maintain the new water infrastructure in its original condition and to use it in ways culturally-specific to Europeans; and they categorized local people's alterations to the water system as "illegal."

Varma writes that "development and humanitarianism" have been used "as tools to win the hearts and minds of civilian populations" in a "kinder, gentler form of warfare" (Varma, 2020, p. 13–14). It seems the Indonesian military believes they can disguise warfare as development and that they can use humanitarianism to control the villagers whose island they occupy, but Kodi villagers are neither as naïve as biased stereotypes would suggest nor as compliant as the armed forces imagine. This is apparent from listening to the words of Kodinese and interpreting their actions which can be better understood by developing long term relationships with them. Engaging with Kodinese with respect and humility and treating them as people with full rights and intelligence about how to manage the resources in their own homelands would lead to better outcomes. When the military is involved with development projects, they treat local people as "kids" who need to be educated, as a Babinsa stationed in North Aceh sees community members (Babinsa quoted in Syailendra, 2017, paragraph 2). Babinsas consider "ideological indoctrination for ordinary citizens" (Syailendra, 2017 under Babinsa as Enforcers) as one of their roles. A Babinsa in North Aceh feels justified in "forcing them to work in the fields" (quoted in Syailendra, 2017, paragraph 2), for the sake of "food security" development projects.

Humanitarianism goes hand in hand with militarism in nationalist projects (Varma, 2020) in crisis situations around the world (Ticktin, 2006; Fassin and Pandolfi, 2010; Feldman and Ticktin, 2010; Fassin, 2012). Recipients of the (inter)nationalist ProAir project in the North Kodi District villages where military intelligence operatives and army officers, Indonesian government workers in various Indonesian government agencies, and German bankers and developers⁴ have carried out water development projects have mixed reviews. On the one hand, villagers appreciate the concept of modernization while, on the other hand, the specific instances of development in their experiences have serious shortcomings, are insufficient, or have failed. Kodi villagers desire "a faucet inside every home"—quoting one woman's response when asked what she wanted to see happen in the future with water development—yet they are aggrieved about the inequities in access to improved facilities that have emerged or been reinforced by development projects.

4 "German bankers and developers" here refers to two principle partner organizations involved in the ProAir project: the German development bank KfW *Entwicklungsbank* and the international development organization Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The other partnering organizations are the Republic of Indonesia, the German Federal Ministry for Economic Cooperation and Development, and for the work done in Kodi the Provincial government of East Nusa Tenggara and the Regency government of Sumba Barat Daya.

4. Discussion

4.1. Principles for socially just water development

Seeking more socially just solutions to inequitable development projects and militarized humanitarianism is necessary. Moving forward, what principles for designing and implementing the development of water utilities might potentially lead to more socially just projects? Mirroring Ostrom (1990) compilation of the eight traits of sustainable common property institutions—based on her work around water and other resources—I offer the following principles for sustainable and socially just development.

1. Conduct longitudinal, participatory research to better understand social dynamics within the communities residing in the watersheds that will be impacted.
2. Conduct longitudinal, participatory research on the watershed's hydrology and ecology that centers local ecological knowledge and situates it as complementary to scientific knowledge.
3. Explore with the community and from a scientific perspective all of the potential intended and unintended consequences of intervening in the watershed's social and ecological systems.
4. Integrate community members' experiences, knowledge, opinions, and desires into the evaluation, design, implementation, monitoring, and upkeep of interventions in hydrological processes.
5. Intentionally establish mechanisms for equitably distributing the potential benefits of development throughout the community. Endeavor to extend benefits to all segments of a community, including to non-elite and marginalized members.
6. Compensate community members for their participation and labor.
7. When converting a free natural resource into a commodity in impoverished communities, do not force consumers to pay for it. In impoverished communities if water fees are necessary, subsidize payments rather than demand direct payments from community members.
8. When consumers modify utilities constructed in their customary territory, do not insult or patronize them; do not call them ignorant; do not expect education to be the sole cause or solution; do not criminalize, beat, or imprison them; and do not use police, military, and paramilitary to surveil, intimidate, and punish them.

4.2. Main findings

Having conducted intensive, extensive, opportunistic, and longitudinal research while allying with Kodinese and subsequently applying a feminist anthropological approach to write about the results, I conclude this article by summarizing the main findings. One finding is that interventions by extrinsic agencies into the hydrology of the Mata Loko, Labba Padu, Wee Liang, and Kori watersheds have altered hydrosocial relationships. The routes of

water emanating from these streams have changed due to multiple causes. The small selection of causes of watershed reworkings that are made visible in this article are the life histories of individuals within households, shifts in streamflows, seasonal precipitation variabilities, political regime changes, technological and economic developments, and infrastructure construction.

As water's routes shift, people adjust to new conditions with mixed outcomes. The three stories at the heart of this article show that water utilities have differential benefits within the Kodi community: some people benefit; some of those who benefit do so for longer periods of time and some for shorter periods; and other people receive no benefits. Within a single region, development projects do not simply lead straightforwardly to improvements in all community members' lives.

The benefits from the development of water utilities in Kodi have dispersed along already existing lines within the social structure. Moreover, development has exacerbated pre-existing inequities. Similar to stories elsewhere in the world, the "women occupying marginalized social positions within a 'nexus of power relations'" (Slatton and Brailey, 2019, p. 2 also citing Dean et al., 2017, p. 1) continuously find themselves navigating inequitable situations pre- and post-intervention and throughout the project cycle as developers show up in a community, build their projects, and leave. Within the global and national contexts, Kodi society as a whole is marginalized. Within the contexts of East Nusa Tenggara and even at the island scale on Sumba, non-Kodi People express biases against Kodinese (Vel, 2009). Furthermore, Kodi society itself is internally stratified with some categories of women being more marginalized than others. Unequal access to water among women occurs within Kodi society whereby women of lower status have more limited access to clean water and have to travel farther to access it. Intracultural differences among Kodi women related to their intersectional identities coincide with variations in their access to natural and developed sources of water.

These are the main findings derived from the feminist scholarly approach combined with ethnographic data, intersectional theory, critical development studies, and information from the literature on Sumbanese societies. At all of the social scales and status positions, water politics are complex. Activism is one response among Indonesians to the degradation of the quality and quantity of natural water supplies, as testified to by cases in the Central Sumba Regency on Sumba Island (Hendrastiti and Kusujarti, 2019) and Seluma Regency on Sumatra Island (Hendrastiti, 2014). Kodinese frequently request support from foreigners in a form of advocacy for their needs and desires, which is why I conducted research on the human dimensions of freshwater ecology and why I write this article from the standpoint of a foreign academic and for the purpose of collaborating with the authors of this special issue to advance a feminist water agenda.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Badan Inovasi dan Riset (BRIN, Indonesian Agency for Research and Innovation). Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

CTF wrote, revised, and submitted all drafts of the manuscript.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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