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Learning with overflows

Feminist engagements with water in agriculture in Maharashtra (India) and beyond

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6

CONCLUSIONS: TOWARDS MORE FEMINIST WATER FUTURES

6.1 THREADS FOR A FEMINIST UNDERSTANDING OF WATERY CHANGES IN AGRICULTURE

In this thesis I grappled with questions of water in agriculture from a feminist perspective. I did so in the conviction that new theoretical and political collaborations between feminism and water are needed and perhaps more urgent than ever. Questions of gender need a prominent place on water agendas, just as questions of water in agriculture deserve a prominent place on feminist agendas. This is because, the intensification of agriculture – which goes accompanied with processes of privatization and individualization – risks to lead to increasingly unsustainable rates of groundwater extraction. As I explain in this thesis, this is directly associated with the further marginalization and invisibilisation of less privileged actors and their labour, often reproducing inequalities along lines of gender, class, caste, ethnicity.

The data I collected in the village of Pravah, in Maharashtra, India, forms an important empirical anchor and inspiration for my project. In addition, this thesis enormously benefitted from multiple collaborations with other feminist researchers-activists working in different areas of Maharashtra, as well as in Morocco, Peru and Algeria.

My starting point has been the work of ecofeminist, feminist political ecology, and critical agrarian studies scholars who have exposed how the exploitation of labour – much of it done by women and other marginalized actors – in rural agrarian contexts goes often hand in hand with the exploitation of nature, and particularly with the exploitation of water (see among others Mies, 1986; Shiva, 1988; Harris, 2006; O'Reilly, 2006; Sultana, 2009; Truelove, 2011; Ahmed and Zwartveen, 2012; Truelove, 2019; Mitra and Rao, 2019). The work of these scholars helped me to understand how the implementation of neoliberal water reforms fostered the intensification of commercial agriculture – in Maharashtra

(India) like in many rural areas of the world – clearly benefits some actors, usually male land owners belonging to upper classes and castes, more than others. In particular, women belonging to lower classes and castes have been increasingly marginalized: their work burdens – both at home as well as in the farm – increased often without fair remuneration, while their access to and control over land, water and incomes barely improved (Kulkarni and Joy, 2012; Pattnaik et al., 2017; Mitra and Rao, 2019).

Acknowledging this and taking this as a starting point for my research, an important emphasis of the thesis is that feminist analysis should not stop at exposing the structural (capitalism, patriarchy) dimensions of gendered inequalities in rural agrarian contexts. Inspired by different bodies of feminist literature and science and technology studies, and triggered by my empirical findings, my research journey has been animated by the conviction that only reiterating the existence of such structures of power risks to strengthen their tenaciousness and self-evidence (see among others Ahlers and Zwarteveen, 2009; Domínguez Guzmán, 2019, 2021; Gibson-Graham, 2006, 2014; Harris, 2009). It also may homogenize and therefore overlook who and what falls beyond those already identified patterns of marginalization, and leaves little space to those who are defined as ‘marginalized’ or ‘exploited’ to articulate who they are or how they engage with and understand water in their own terms (Bossenbroek and Zwarteveen, 2018). Hence, throughout the different chapters of the thesis, I proposed ways of studying watery agrarian transformations that would expand and enrich dominant critical and feminist explanations, by cultivating attentiveness to everything that does not easily fit in, or may even contradict them.

I embarked on this journey based on the feminist premise that deciding which concepts to mobilize, which stories to tell, and how to tell them, is always a political choice. After all, stories help enact specific (watery) worlds (Haraway, 1989; 2016; 2019; also see Harding, 1986). This also meant keeping in mind that theory and practice, and research and activism, are never (fully) separated. Academic work is always performative, always an intervention (Law and Singleton, 2013). My project has been animated by the ambition and commitment to see and understand what is happening with water in agriculture through the eyes and experiences of women: a choice based on the strong assumption that dominant representations of farming and irrigation – whether more mainstream or critical – continue to take the experiences of male farmers and irrigators (usually from upper classes and castes) as the norm. Furthermore, dominant representations are often written from an outsider perspective, and with a claim to objectivity. Hence, my project has been one of simultaneously decentring the male farmer and situating the researcher to produce a more modest and grounded account, but also co-enacting a different understanding of processes of intensification in agriculture, one that foregrounds concerns of equity and sustainability.

In what follows, I unfold the main threads that I have found useful for developing a feminist understanding of watery processes of change in agriculture. In doing so, I briefly reflect on why they matter for more just and sustainable water management. Although I am the sole author of this text, I shift from using the pronoun ‘I’ to the pronoun ‘we’ in places where I want to explicitly reflect the collaborative nature of my work. I end this thesis by asking how the approach I developed could help informing or critiquing water policies or plans. I do this through a small exploratory exercise: a reflection on a water project that indirectly concerns Pravah, the ‘Pune River Rejuvenation Project’. This project entails, a plan officially launched in March 2022 by the Pune Municipal Corporation to intervene on the Mula-Mutha River and “create a safe, clean, beautiful and integrated river edge for Pune” (PMC, 2018).

6.1.1 Tracing structural inequalities across cases while staying grounded and specific

A first important thread in this thesis mainly emerges from the work conducted with other feminist water researchers-activists during the COVID-19 pandemic (Chapter 2). The pandemic grimly exposed how smallholder farmers and agricultural laborers live on the margins of the neoliberal-driven food production chain, being the first ones to be negatively affected when national and international market dynamics are disrupted and the mobility of goods and people is constrained. More specifically, an intersectional lens illuminated how women (especially single women from lower classes and castes) in India, Morocco and Algeria had to deal with the worst forms of exclusion – also from government forms of formal support –, while their care work burden increased during the pandemic.

At the same time, we remained amazed by the ability of different agricultural actors, and again particularly of women, to creatively re-invent farming and care work as part of efforts to look after and secure their own and their household’s well-being. Their initiatives involved reusing, repairing or taking advantage of whatever is locally available and can be produced in-situ (soil, water, seeds, technology), but also consisted of conscious efforts to strengthen alliances and networks of solidarity. Without romanticizing these efforts, we concluded that the existence of such initiatives can serve as an inspiration – for instance for governmental and non-governmental response and support programmes – to design farming-based livelihoods that are less dependent on highly unfair and ecologically destructive neoliberal food production and distribution systems. Indeed, the initiatives that smallholder women and men developed during the pandemic may contain seeds of inspiration for fostering food sovereignty, decentralizing markets or the development of more sustainable farming approaches such as those based on agroecology. A feminist approach to resilience, we argued, entails explicitly focusing on and energizing grounded transformations, rather than restoring existing (neoliberal)

economic, social and environmental configurations. This is an important emphasis, because the concept of resilience is often used (by scholars, policy makers, practitioners) to denote strategies of individuals and communities to ‘bounce back’ after a shock or crisis, restoring the initial order that got disrupted. However, I propose here a more specific and careful vocabulary, one that is grounded in actual practices and relations, is perhaps better suited for identifying more sustainable and equitable modes or organizing farming.

After all, the analysis presented in Chapter 2 revealed the resemblances between the experiences of farmers and wage labourers between three countries, with the pandemic serving as a magnifying prism to expose their marginalisation and vulnerability; yet it also exposed the many differences between our research areas, with important determinants of both vulnerability and resilience sometimes residing in these specificities. This again underscored the importance of always grounding concepts, understanding as well as proposals for action in the situations in which they occur. This multiplies explanations and calls for slowing down generalization and comparison when studying processes of farming or managing water.

The importance of tracing structural inequalities while at the same time remaining grounded and specific (in the analysis, in the vocabulary used) importantly emerged also in Chapter 4. Here the specific details of the studies presented revealed that there is much variation across places (in India, Morocco and Peru) in terms of the ways in which people organize farming and irrigation as well as in the ways in which this is gendered. We were reluctant to make this variation disappear by clustering resemblances in broad structural categories for the sake of comparison, also because we felt that these specifics and differences mattered. Rather than homogenizing the richness and diversity of different empirical realities – in an attempt to make them fit categories – we therefore sought for a way to recognize structural patterns without sacrificing or forgetting about specificities: appreciating a large diversity of gendered practices, relations and subjectivities in irrigated farming, as well as the many ways in which ‘being a woman’ and ‘being a farmer’ can be performed.

6.1.2 Cultivating sensitivity for what exceeds, or overflows, already identified social or planned material structures

Another important thread in this thesis is attentiveness to the specificities of gendered farming and irrigation realities with the aim to enrich the feminist conceptual vocabulary to describe and explain these realities. We did so by engaging in a mode of analysis that we referred to as obliqueness (see Chapter 3). For us, obliqueness entails cultivating sensitivity for those practices and engagements that exceed, and cannot be solely expressed in terms of, more structuralist explanations of the world. Obliqueness has been my way to give space to the ‘surprises’ – or overflows – encountered in the field. It comes

with a refusal to assume too much before the analysis, or to extend diagnoses too widely or too deeply (Gibson-Graham, 2006, 2014). Hence, we tried crafting a horizontal conversation between empirical data and theory: trying not to squeeze everything and everyone in predetermined structures or fixed categories.

An important premise here was the recognition – inspired by science and technology studies as well as by feminist posthuman studies – that the world, or a waterscape, is always in-the-making: the product of the relational and partly contingent coming together of both human and more-than-human actors, such as different kinds of farmers, engineers, researchers as well as water, algae, sediments, chemicals, pieces of infrastructure and much else (Barad, 2007; Haraway, 2008; Lavau, 2013; Lorimer, 2007). The focus on the ‘making-of’ worlds allows for the useful possibility to make them otherwise, for instance by situating them in (or centring them on) other experiences, by mobilizing other concepts and metaphors or by using different methods. While representational accuracy continues to be important, accepting that words (concepts, stories) co-shape worlds makes it necessary to also ask the more political and always pragmatic question which world knowledges help enact. Awareness of how “stories make worlds” (Haraway, 2016) also entails that worlds multiply. It therefore comes with an abandonment of the ambition to contain everything and everyone in one single totalizing frame: categories and structural explanations used to make sense of the world (for instance those based on capitalism, patriarchy or the caste system) always only partly explain it; or enact only one specific version of it (Latour, 2005; Law, 2004; Strathern, 2005; Law and Mol, 2008). It also entailed for us to understand and study water infrastructures as always in-the-making by recognizing that they can never be fully described by official plans and designs as they are continuously reshaped by different actors (farmers, engineers, water, algae and much else) and need continuous work (of care, repair, maintenance, adjustment) in order to function (Kemerink-Seyoum et al., 2019; Silva-Novoa Sanchez et al., 2019).

Hence, cultivating attentiveness to overflows – material as well as social ‘things’ and relations that do not fit, or fall beyond, initial plans and predominant (power) structures – is a practice to ‘loosen up’ the tenaciousness of dominant structuralist analyses, and to remain open to multiple, co-existing worlds and narratives. In Chapter 3, we drew on data collected in Pravah to show how this multiplicity may hold inspiration for more just and sustainable ways of managing water in agriculture. We did so, for instance, by appreciating how smallholder farmers are involved in the revision of the form and functioning water infrastructure, by appreciating women as political actors in the waterscape, and by acknowledging alliances between women across castes.

6.1.3 Enacting different versions of ground(water), foregrounding practices and knowledges that are often invisibilised

The focus on the ‘making-of’ worlds allows to enact them otherwise, for instance by situating worlds in (or centring them on) the practices and vantage points of those actors who are politically or economically marginal, or who are somehow marked by their difference from the norm (Haraway, 1988). Throughout the thesis I foregrounded the practices and stories of women who, in Maharashtra (just like in many other rural contexts throughout the world) most often do not hold official roles in water management, nor are formally recognized as farmers or irrigators, even when they are the de facto water managers at household, field and community levels. As part of this thread, I also centred water itself as one of the actors in co-shaping waterscapes. I did this by adopting a relational approach that acknowledges how human and more-than-human actors come into being because of how they closely and partly contingently relate and co-constitute one another in both material and discursive ways (Barad, 2007; Lavau, 2013; Lorimer, 2007; Neimanis, 2013; Ballesterro, 2019). This allowed me to consider more seriously the specific behaviour of water in this relation, grappling with how it often overflows human intentionality (see Pickering, 2009; Lavau, 2013). In how it flows, percolates and seeps, different water flows mix and alter not just quantities, but also qualities. As shown in Chapter 5, in the village of Pravah polluted water earmarked for irrigation contaminates the local aquifer and thus groundwater destined for other purposes. Women are forced to learn to appreciate and distinguish between water qualities to decide which water to use for which purpose.

We thus enacted a version of (ground)water that foregrounds women farmers’ ways of doing water. It is a version that may differ from dominant techno-managerial versions of it. For instance, the ‘women’s version’ of groundwater in Pravah sheds light on all the unremunerated work that women perform to use and manage groundwater, while it also draws attention to the importance of water quality as a dimension of sustainability and well-being. These two dimensions remain often invisible in techno-managerial neoliberal versions of groundwater.

6.1.4 Concluding notes

This list of threads that I have found useful for developing a feminist understanding of watery processes of change in agriculture is not exhaustive or complete. The approach I favour is one that resists the temptation to generalize or homogenize too quickly across cases, to instead stay with and remain attentive to specificities. The proposed threads also insist on political reflexivity and pragmatism when engaging with feminist water questions in agriculture – always situating analyses in actual, place-based, strategies and struggles.

This is why I would like to end this thesis with a plea for grounding and situating feminist research and engagements with water in agriculture. This plea is animated by the conviction that paths to more sustainable and just ways of using and managing water are best forged not on the basis of yet another grand narrative or framework, but instead rely on nurturing many smaller stories, or overflows, about water. Learning with overflows thus means centring the mundane engagements, work and knowledges, practices of those actors – human as well as more-than-human ones – that are often not considered or marginalized in neoliberalism-driven techno-managerial, engineering approaches to – and publications – on water. Such more grounded feminist analysis cannot just provide crucial insights in – and appreciation for – how women (and other marginalized actors) use, know and manage water, but also provide seeds for transformational action, importantly consisting of modest forms of tinkering and experimentation, inspired by what emerge as more equitable and sustainable human water relations.



*Figure 17: Following a woman farmer and a goat. Maharashtra.
Photo: Irene Leonardelli, February 2020.*

6.2 A SMALL EPILOGUE: RETHINKING THE ‘PUNE REJUVINATION PROJECT FROM A FEMINIST PERSPECTIVE

In this epilogue I explore how the approach I developed could help informing or critiquing water policies or plans by reflection on a water project that indirectly concerns Pravah, the ‘Pune River Rejuvenation Project’. The Pune Municipal Corporation initiated this half a billion-euro project to “create a safe, clean, beautiful and integrated river edge for Pune” (PMC, 2018). The project concerns the Mutha River, which originates west of Pune and flows through the city, collecting (mostly) untreated water from the urban sewer system (domestic waste); the Mula River, which originates north of Pune and flows through the industrial area of the city, collecting mostly industrial waste; and the Mula-Mutha River, which is the joint flow of the two rivers after their confluence in Pune. The Mula-Mutha River is highly polluted as most sewage and wastewater discharged into both rivers remain untreated (Jagtap and Manivanan, 2019). Moreover, Pune has been affected by recurrent flooding in recent years. Hence, the draft project plan of the ‘Pune River Rejuvenation Project’, list the following as the main objectives: reducing the risk of flooding for the city, cleaning the river, and creating space for recreational activities, turning the Mula-Mutha Rivers into an important asset for the city (PMC, 2018).

To reach these objectives, the draft plan envisions to convert the Mula-Mutha River into a canal by constructing 10 to 12 meters high concrete walls (embankments) along both the river banks (PMC, 2018). The floodplains outside these embankments would be filled with soil to create artificial gardens, making space for the construction of playgrounds, restaurants, walking paths and other recreational facilities (PMC, 2018). Furthermore, two sewage treatment plants are proposed on the upstream side of Mutha river (PMC, 2018). They would thus be located before the Mutha river flows through the city and joins the Mula river. The draft plan indicates that other wastewater treatment plants will be constructed along the two rivers in the context of other projects (PCM, 2018).

Long before the official launch of the draft project, several environmental organizations – activists as well as water and environmental professionals and experts – expressed great concern about it. I was curious about the reasons of this mobilization, and interested in finding out in more detail what the project entailed, particularly in relation to water treatment. After all, the polluted water of the Mutha River importantly determines the waterscape of Pravah. Women farmers would perhaps not have to worry so much nor spend so much time and money to deal with water contamination if the water transported by the Purandar Lift Irrigation Scheme would be of better quality.

During my last visit to Pune, in October 2022, I decided to satisfy my curiosity by meeting with the different environmental activists and water experts who are mobilizing against the project. One of them is Sarang Yadwaskar, an architect, water expert and member of

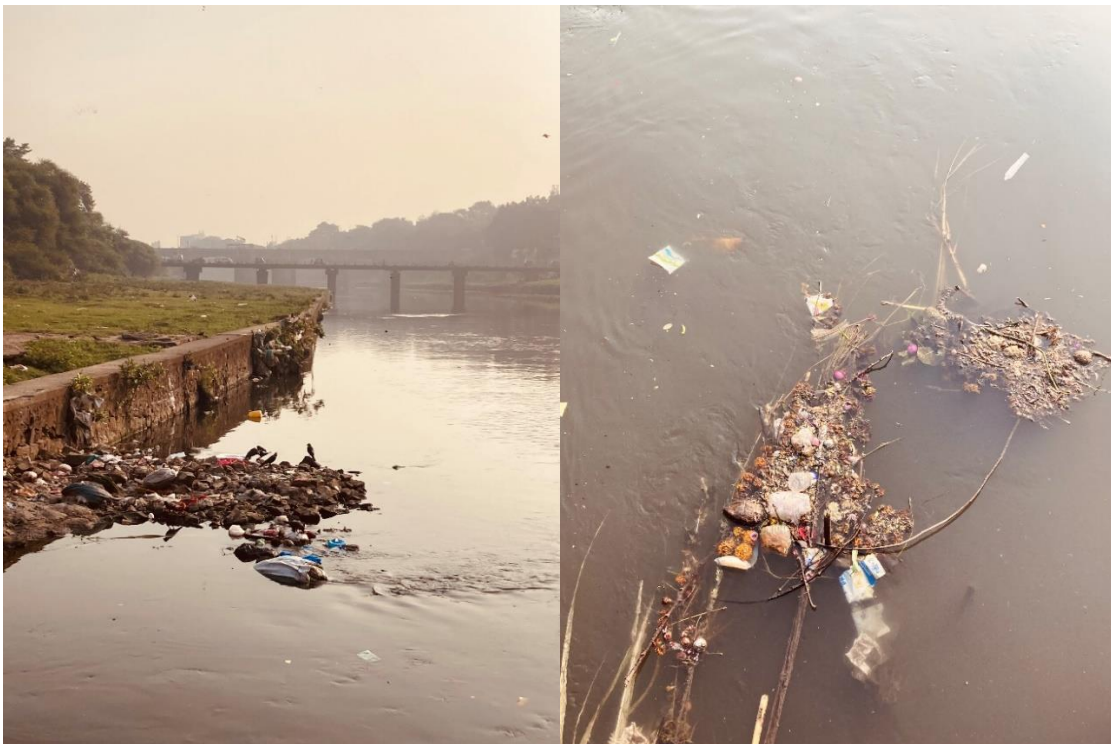
the Planning Committee of the Development Plan of Pune City. He filed several cases with the National Green Tribunal about river pollution and encroachments of riverbeds. He explained to me that the existing embankments – which are already constructed in some places to create car park, sewage pipes and metro pillars – are already reducing the water carrying capacity of the river. Due to these encroachments of the river flooding has increased. In his opinion, the embankments foreseen in the draft plan would alter the river course, reducing the riverbed's cross-sectional area, which will further constrain the water flow and most likely increase the risk of flooding. Moreover, the planned water treatment plants are not going to be sufficient to clean and purify the water in the river, especially as the population of Pune is expected to increase in the next years, and with it, the production of waste and sewage. In his opinion, the draft project does not at all address the point about cleaning the water of the river, for the proposed sewage treatment plants will have the capacity to treat only a minimum amount of the river waters. He calculated that 80% cost of the project is allocated to civil construction and concretization of the river, suggesting that the real purpose behind the project is evidently not to improve water quality but to exploit the flood plains for commercial purpose.

Scientific reports show that pollution, solid waste and the lack of dissolved oxygen in the water negatively affect the biodiversity on the riverbanks, which are important places for natural purification of water. The riverine ecosystems of the Mula-Mutha river is suffering irreversible damage, with great losses of varieties of plants and species of fishes, insects and birds (Ecological Society, 2018). If water will not be properly treated and the embankments will be constructed the health of the ecosystems of the river will be further decline (see Yadwakar, 2021; Ecological Society, 2018).

Dr. Himanshu Kulkarni, a hydrogeologist and the former director of ACWADAM, made me notice that the draft plan of the Pune River Rejuvenation Project does not even mention a single time the word groundwater. This shows that the about 50 springs that exist along the Mula-Mutha River are of no concern for the Pune Municipal Corporation and how they do ignore the intimate interactions between surface water and groundwater. Dr. Kulkarni added that if groundwater in- and outflows are not considered in the project, it is not possible to properly plan and design water treatment plants. Evidence shows that groundwater in Pune is already heavily affected by the pollution of the river. Dr. Kulkarni agrees with Sarang Yadwaskar that the proposed plan is yet another large water infrastructure; a real estate development project serving market interests and bringing economic benefits only to few actors, while irreversibly damaging ecosystems and further endangering the life of people, not only of those living closer to the riverbanks.

Of a similar opinion are also the activists of the Jeevitnadi Living River Foundation, a local organization of activists committed to environmental conservation and the reviving of rivers. They organize different initiatives including: Mula-Mutha river walks to make citizens aware of the history and current status of the rivers of Pune; inviting local

dwellers to ‘adopt’ stretches of the river to keep its banks maintained and clean of garbage; organizing workshops to encourage citizens to self-produce and use toxin-free domestic products to limit water pollution. As I participated in one of the Mula-Mutha river walks, Manish Ghorpade, one of the founders and main activists of the organization who was leading the walk, mentioned that the highly contaminated water of the river is not only destroying the ecosystems of the river, affecting local citizens (especially those that live closer to and directly rely on the river) but also affecting the life of the many farmers who use this water for irrigation, and their environments. He expressed a lot of disappointment in relation to how the Pune River Rejuvenation Project recently announced by the Pune Municipal Corporation does not seem to see water treatment as an actual priority. In his words, the plan seems to focus more on making the river look ‘beautiful’ rather than ‘healthy’. He said: “It is like taking a suffering old lady to the beauty parlour instead of to the hospital.”



*Figures 18-19: The polluted water of the Mula-Mutha River, Pune.
Photo: Irene Leonardelli, October 2022.*

Conversing with these activists and reflecting on the draft plan of the Pune River Rejuvenation Project, it was clear to me that the plan indeed produces yet another techno-managerial engineering version of water with a distinct neoliberal flavor. It treats river waters as something that can be quantified, separated, managed and controlled, and prioritizes market interests while overlooking the well-being of the many human and more-than-human actors that specifically depend directly on these waters. It is telling that

the draft plan does not even mention the Purandar Lift Irrigation Scheme, nor the fact that the highly contaminated water of the Mula-Mutha river is used for irrigation by thousands of farmers in rural areas outside Pune.

Perhaps some of the points emerging from this thesis can support the work of activists and environmental organizations in their efforts to convince the Pune Municipal Corporation to rethink this plan, to instead implement more sustainable and just water interventions. First of all, this thesis pleads for the importance of remaining grounded and specific in water management, acknowledging that each riverscape consists of different human and more-than-human relations that need to be carefully studied and considered in plans and interventions. Secondly, and relatedly, this thesis posits the recognition that water is never fully controllable or manageable, based on the acknowledgment that humans and water give each other being in a 'dance of agency'. This may emphasize the need to create room for the river rather than embanking it. Thirdly, recognizing how water continues to flow into and out of categories – such as urban and rural, productive and domestic, surface and ground, clean and polluted – may help to shed light on how flows of water in one place carry implications for water quality and quantity in other places, and for other people.

The polluted water of the Mula-Mutha Rivers percolates into the aquifer of Pravah and of the other sixty (and more) villages served by the Purandar Lift Irrigation Scheme, allowing crops to grow throughout the year, yet also contaminating the soil as well as the existing groundwater. The contaminated groundwater used for bathing and drinking causes skin rashes and stomach diseases, affecting the health and well-being of people as well as of animals. Moreover, although farmers in Pravah never indicated that the water they use for irrigation is affecting the quality of the crops, preliminary data I collected in other villages served by this infrastructure suggested that farmers consider the crops cultivated with this water as 'full of chemicals' and potentially 'dangerous'. Farmers also told me that they notice a general and worrisome increase, among the villagers, of stomach infections, kidney stones as well as cases of cancer. While the health implications related to the use of this water would require a more in-depth study, it is worth noticing is that these crops are cultivated to be sold also at the market in Pune. The untreated polluted water that flows in the Mula-Mutha river flows in this way back to the city in the form of crops, vegetables and flowers. As such, all waters in this waterscape are connected, yet – as my research shows – the first people having to compromise health, hygiene and taste for the sake of affordability are likely those people belonging to lower classes and castes, and single women, both in rural areas as well as in the city.

Finally, my thesis underscores the importance of also looking at water (or at a river) based on the experiences and practices of those actors that do not hold positions of power or formal roles in water management. This helps make visible the labour and knowledges (human and more-than-human) that tend to disappear in techno-managerial, neoliberal

enactments of water (see also Leonardelli and Tozzi, forthcoming). For the Mula-Mutha River, this would mean centring the water practices and experiences of slum dwellers, farmers, fishermen, as well as those of fishes, birds, plants, and many more that are not foregrounded in the current plan and asking which interventions would these different actors be inspired by and approve of?