

Reimagining climate-informed development: From “matters of fact” to “matters of care”

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This paper is concerned with the impasse climate-informed development practices currently find themselves in. This is represented by the fact that while “solutions” to reduce vulnerabilities and enhance capacities for adaptation and resilience are increasingly adopted around the world, we have enough evidence to suggest that strategies adopted “from above” have been unable to engender transformations towards more just and liveable futures. Situating the paper within recent calls for a “post-adaptation” turn in the field, I propose a generative critique of climate-informed development through the lens of care as a place from where to begin thinking and practicing development differently. The aim of this critique is not to discard or discredit development practices as necessarily tainted or flawed but to make them accountable to a whole set of concerns and cares going into their stories of success or failures. Throughout the paper, I therefore speculatively ask the reader to think through the possibilities that may be opened when we stop treating climate-informed development projects as neutral and undisputable “matters of fact,” engaging with them instead as necessary and non-innocent “matters of care.” Thinking through a tryptic notion of “matters of care,” as at the same time a neglected doing necessary for the sustenance of life, an affective state, and an ethico-politics, I look at examples from semi-arid areas of India to give visibility to those practices, relations, and emotions of care that have been marginalised by mainstream development circles. Through this shift in perception, a deeper understanding of vulnerability as a state of shared fragility emerges, one that grounds an ethico-politics of climate-informed development to concrete circumstances and becomes the foundation upon which more inclusive practices can be built upon.

KEYWORDS

climate change, development, India, matters of care, post-adaptation, vulnerability

1 | INTRODUCTION

A climate-smart world is within reach if we act now, act together, and act differently. (World Bank, 2010, p. 10)

Standing, as we are, at this very moment in history, it seems impossible to disagree about the urgency to rethink our development trajectory towards one that is more sustainable and liveable for future generations. Yet, behind such a

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seemingly straightforward slogan lies a series of assumptions about what such a “climate-smart” world should look like, what tools and instruments are to be mobilised to achieve this desirable future, who is implicitly included (and conversely excluded) from the collective “us” that is called upon to delineate such a trajectory.

In this paper, I engage with the way statements like this are presented within mainstream climate and development circles as undisputed imperatives, matters of facts around which consensus is built for the need to adapt to the impacts of climate change (Mikulewicz, 2020; Mikulewicz & Taylor, 2020). We must act quickly and adapt, they tell us, otherwise we risk paying a high price for inaction. Yet, as “climate catastrophes” make headlines around the world, we seem to have reached an impasse when it comes to finding ways of imagining the relation between society, the environment, and a changing climate that may inspire more socially just futures for humans and other beings (Gibson-Graham, 2011).

In particular, while there is a growing recognition for the need to politicise vulnerability and adaptation interventions, situating them within the socio-economic fabric of household’s dynamics (Ensor et al., 2019; Sugden et al., 2014; Taylor, 2013a), standardised solutions to increase agricultural productivity, maximise resource-use efficiency, and educate people to manage resources “rationally” continue to be the dominant responses to climate and development problems (Mikulewicz, 2019; Nightingale et al., 2020; Taylor & Bhasme, 2020). According to Mehta et al. (2019), these practices of climate-informed development “from above” block our abilities to imagine different ways of living with uncertainties, leading to techno-managerial solutions that have little to do with the realities of people on the ground. Most recently, a group of leading scholars (Eriksen et al., 2021) argued that, despite the good intentions, internationally funded adaptation interventions often end up reinforcing, redistributing, or even introducing new sources of marginalisation and precarity. Acknowledging that a climate-informed agenda must challenge, rather than perpetuate, the developmentalist focus on progress and modernisation (Ireland & McKinnon, 2013), the authors of that paper call for a “post-adaptation” turn in the field, one that would generate fresh critical engagement with the “climate problem” through new imaginaries, tools, and ideas. This paper indicates an avenue in this direction.

To achieve this, I draw from the rich toolbox of science and technology studies (Haraway, 1988; Latour, 2004), and particularly from Puig de la Bellacasa’s (2011, 2017) work on care in techno-science, who have argued for a generative engagement with the things we set out to investigate. For them, exploring how things are constructed is not to “debunk or dismantle them” (Puig de la Bellacasa, 2017); rather, exhibiting the concerns that attach and hold things together as seemingly whole “matters of fact” (Latour, 2008) is to take away their innocence and neutrality so as to enrich and affirm their reality. The proposed mode of “critique as care” (Fernando, 2019) is thus about gaining a more complete representation of the workings of things, enlarging the field of credible experiences by focusing on what has been disqualified or rendered invisible in every circumstance (Gibson-Graham, 2005).

By bringing those necessary, yet neglected, practices of care at the centre of my critique and making present the alternative realities they propose, I suggest a place from where to begin thinking and practicing climate-informed development differently. Throughout the paper, I exhort the reader to speculative “thinking-with” (Puig de la Bellacasa, 2012) the possibilities that emerge when we chase threatening development practices and their solutions as neutral and undisputable “matters of fact,” engaging with them instead as necessary and non-innocent “matters of care.”

While feminist theories of care are not new to the geographical landscape (Henry, 2018; Lawson, 2007; Milligan & Wiles, 2010), development geographers are yet to reflect with Puig de la Bellacasa’s (2011, 2017) provocation to re-imagine our research field through the lens of “matters of care.” In particular, she invites us to reclaim care from abstract moral precepts (Tronto, 1993), keeping it grounded in everyday situations to expose its unresolved tensions and contradictions. These emerge through the ambivalent character of “matters of care,” and at the same time a neglected doing necessary for the sustenance of life, a non-innocent emotional state, and an ethico-political obligation towards the becoming of things (Puig de la Bellacasa, 2017). Reading these dimensions against one another opens a vision into the subtle work of care present in every circumstance, bringing to light those practices, relations, and emotions that have been marginalised by mainstream development practices. As a result, alternative people-places configurations emerge that better capture the richness and complexities of navigating socio-environmental change at different scales.

The importance of this task could not be overstated. As the disproportionate impacts of climate change on the most marginalised become increasingly evident, the threat of the “climate crisis” could also be used to justify interventions that are more “transformative” – in a neoliberal sense – than “traditional” development ones (Mikulewicz, 2020). The fast approaching deadline of 1.5°C of warming (IPCC, 2018) could thus inadvertently push towards the scale-up of technocratic climate-solutions in a more blatant and unreflexive manner. In this context, transforming the self-evident character of these “facts” into contested and contestable “matters of care,” is to make present those neglected labours and marginalised experiences that contribute to their making, opening new possibilities for more careful development practices in the future.

In the next section, I draw from Latour's (2004) understanding of “matters of fact” as “matters of concern,” to trouble the way climate-informed development “from above” constructs its solutions as neutral and apolitical. I then engage with Puig de la Bellacasa's (2017) exhortation to turn our concerns into “matters of care,” to reflect on how climate-informed development can be reimagined, exploring in turn care as doings, affects, and ethico-politics. Here, I build my arguments through an interpretative review of studies from semi-arid areas in India. In the conclusion, I reflect on the avenues for furthering climate-informed development research through a feminist care lens.

2 | TROUBLING CLIMATE-INFORMED DEVELOPMENT AS “MATTERS OF FACT”

Climate Change will require faster adoption of technologies and approaches that combinedly increase productivity, cope with climate change and reduce emissions. (World Bank, 2010, p. 154)

There is nothing more amazingly artificial, more carefully staged, more historically coded than meeting a matter of fact. (Latour, 2008, p. 32)

When the World Bank publishes its annual Development Report, the world listens. Just over a decade ago, the Bank dedicated its yearly publication to the threat climate change posed on its development agenda. Leaving little space to the imagination, the report presents the image of a “climate-smart rural landscape” (World Bank, 2010, p. 167) inhabited by farmers maximising their yields through technologies that increase water-use efficiency and preserve natural resources. In semi-arid areas, cultivation of drought-resistant crops is coupled with drip irrigation to reduce farmer's vulnerabilities to prolonged dry-spells, and a decentralised system of governance enables rational and profit-maximising farmers to make informed decisions to manage their water resources. Under the slogan “more crops per drop,” snapshot “successes stories” demonstrate the impacts these measures provide to individuals and their communities (Taylor, 2018).

Examining closely these staged pictures of success, I was reminded of a lecture in which Bruno Latour (2008) invites the audience to look at the image of a scientist, a middle-aged man gazing from a distance at an object through a magnifying apparatus, asking why is this the way we imagine scientific “matters of facts” to be produced: ahistorical and unmediated encounters between two entities. Matters of fact, we figure, are indisputable, obstinate, simply there waiting to be discovered. Similarly, the climate-solutions proposed through the Bank's triple-win rhetoric of efficiency, productivity, and good governance seemed to mirror this staging of scientific facts: complex phenomenon product of an encounter between multiple elements being framed as self-evident and uncontested. After all, drought-resistant crops mature in half the time than traditional ones, drip irrigation doubles water-use efficiency, and the farmer in the leaflet considerably increased his (sic) profits in less than five years. Without paraphrasing Latour's (2008) sarcastic intervention, “facts are there, god-dammit, whether you like it or not!” (p. 32).

Yet, by Latour's own admission, things are more complex than this. Rather than a snapshot, or a percentage number, the staging of facts requires a camera following the practices of different actors coming together with their concerns and worries around an issue. Through their sustained interactions, the field of admissible solutions is narrowed down until finally appearing as one, objective and complete (Callon, 1984). As we follow these practices, adding the whole scenography to the staging of events, what once seemed undisputable “matters of facts” suddenly become “matters of concern” (Latour, 2004); knots of socio-political interests holding things together at a specific moment in time.

In the development context, the staging of concerns as facts follows a process that Li (2007) describes as “rendering technical,” whereby interventions frame their issues as purely technical problems and connect them to specific technical solutions. Importantly, these solutions are not confined to a single technology, but represent the narrowing down of admissible options to a pre-determined set of practices (see Birkenholtz, 2017). Following this template, the World Development Report frames the “climate problem” as an issue of “poor people vulnerability,” thereby suggesting both the problem (dangerous levels of CO₂ in the atmosphere) and its solution (enhancing people's adaptive capacities by securing their incomes) (cf. Chapter 1 “Understanding the links between Climate Change and Development” World Bank, 2010, pp. 37-61). Abstracted from the political and economic conditions in which climate change emerges, solutions proposed are reduced to what Nightingale et al. (2020) call “climate-fixes,” universally applicable tactics to maximise agriculture productivity and manage natural resources rationally.

On this issue, Boelens and Vos (2012) argue that we need to reflect more critically on the value judgments behind concepts like efficiency and productivity adopted by “experts” as they implicitly support a specific vision about the future. These metrics of success, they argue, go well beyond establishing relations between economic, infrastructural, or agronomic components and inserting them into appropriate formulas. Rather, they require “constructing social alliances and economic relations, inventing and enacting particular rights and legal principles ... creating and renewing powerful assertions and truth claims” (p. 18). Naturalising such contested measures as facts, only makes the power relations that shaped their birth and sustain their working invisible (Pfaffenberger, 1988; Trottier, 2008). When unreflexively adopted by development policies and practices, these seemingly neutral measures of success carry important material consequences, legitimising certain practices while delegitimising others that do not fit the prescribed metrics.

A clear example is represented by calls for accelerated adoption of drip-irrigation as a “solution” against water scarcity (Narayanamoorthy, 2004). While not directly discussing its potential for climate adaptation, political ecologists have highlighted how drip irrigation cannot be considered efficient “per se.” Rather, it acquires its characteristics – as “efficient,” “sustainable,” or “smart” – only through the network of institutions, discourses, and practices engaged around its hardware in different contexts (Venot et al., 2014). Its efficiency, is thus not a given fact, but reflects the processes of adjustment between the technology and its context determining whether a certain technology will be efficient and for whom. Birkenholtz (2017) for example finds that drip irrigation in semi-arid India only allows wealthier farmers to expand their production and increase profits, triggering a race to the bottom of the water table that increases vulnerabilities of marginal farmers unable to deepen their wells.

Relatedly, this also undermines the idea that groundwater over-extraction is solely driven by an information deficit prohibiting farmers from making sensible choices over water-appropriate cropping patterns (Argade & Narayanan, 2019). “If only they knew the facts, they would act rationally and limit their unsustainable water practices!”, suggest textbooks promoting participatory governance as a key ingredient to get institution “right” (Ostrom, 1990). By contrast, Taylor (2013a) describes how it is the neoliberal paradigm of development that often forces smallholders to over-extract groundwater under the pressure of debt cycles where the costs of crop failures are incalculable. This is not to deny people’s agency nor their responsibilities, but to reflect on the importance of understanding the complex arena that shapes people’s actions, rather than assuming the general applicability and “do-goodness” of technologies and institutional set-up.

The arguments presented thus far have highlighted how simplistic approaches calling for scale-up of “efficient” technologies and “good” governance are all but straightforward climate-fixes. Rather, they acquire their characteristics only through the social processes they are embedded in. These processes comprise both the realm of their *production*, when their appearance as facts is crystallised through the coming together of concerned actors, and of their *reproduction*, when, adopted across contexts, they (re)produce and/or challenge existing power dynamics. The analysis proposed therefore adds some important dimensions to ongoing development critiques for which, acknowledging that climate-solutions are constructed, immediately turns into disbelief (Mikulewicz, 2019; Mikulewicz & Taylor, 2020). Paraphrasing Mosse (2004), this deconstructive stance only leads into a dead-end, where all we can do is stare at the automaticity of the “development machine.” By contrast, the restaging of development facts “as lively” requires moving closer to them, acknowledging how their reality is made possible only by the coming together of actors (human and non-human) participating in their discursive representation and material functioning.

At the same time, however, turning facts into concerns can only bring us thus far. As Puig de la Bellacasa (2017) argues, this approach remains neutral to the power dynamics whereby certain things qualify as concerns, thus requiring attention and care, while others are relegated to invisibility. In these troubled and uncertain times, she asks, “don’t we still need approaches that reveal the power and oppressive relations in the assembling of concerns?” (p. 39). If we are to reclaim practices that have been marginalised through persistent forms of exclusion, Puig de la Bellacasa (2017) suggests, we need to add a touch of care to our concerns.

3 | THINKING-WITH CLIMATE-INFORMED DEVELOPMENT AS “MATTERS OF CARE”

Puig de la Bellacasa (2011, 2017) describes her provocation to rethink our research terrains through the lens of “matters of care” as a speculative project about “the possible,” one that is connected to a rich feminist tradition about provoking new ethico-political imagination in the present (Gibson-Graham, 2011; Haraway, 2016). She builds from Fisher and Tronto’s (1990) definition of care as “everything we do to maintain, continue and repair our world, so that we can live in it as well as possible” (p. 103) to expand Latour’s engagement with fact as concerns in important directions. While acknowledging Latour’s (2004, 2008) contribution to dis-objectify facts as precarious gatherings of diverse interests, Puig de la Bellacasa

worries that a simple awareness of multiple voices of concern might not suffice when it comes to challenging inequalities. By contrast, a feminist notion of care as something *we do* to maintain a world in common gives “matters of care” an ethical, political, and affective connotation which matters of concern lacked. While concerns suggest a generic and almost impersonal engagement, practices of care bring a stronger attachment and a commitment towards the becoming of things in the world. To care in fact represents an active *intervention* and a constant *presence* in the world, a reminder that for things to exist “someone, somewhere must be taking care” (Puig de la Bellacasa, 2012, p. 205).

Puig de la Bellacasa thus joins her voice with feminist scholars (Federici, 2012; Jaggar, 2013; Mol & Moser, 2015; Tronto, 1993), who reclaimed care practices from the ground of innate feminine predispositions, repositioning care directly within those devalued, yet necessary, doings without which life would simply not work. As a practice that cannot be abstracted from its situatedness, matters of care resonate with the work of feminist geographers (C. Barnett & Land, 2007; Lawson, 2007; Yeates, 2005) who unsettled and complicated unidirectional “landscapes of care” (Milligan & Wiles, 2010) calling for people in the “North” to care for vulnerable and agency-less subjects in the “South” (Noxolo et al., 2012; Raghuram et al., 2009). A geographical sensibility thus requires de-centring established caring geographies, asking what do “matters of care” look like for different people from different centres (Raghuram et al., 2009), exploring their ambivalences across spatio-temporal scales, rather than assuming one good way of caring possible. Through this lens, caring forms of adaptation and resilience can only be traced through the specific arrangements of people, technologies, places, natural processes, histories, emotional engagements and disengagements that are always situated and provisional, rather than universal and stable (Arora et al., 2020).

As a prism to think-with, matters of care thus works alongside a post-adaptation turn; as a strategy to “identify what *is* in order to see what might have been, what other ways of doing and thinking have been missed or suppressed, and what new possibilities might be opened as a result of seeing things differently” (Ireland & McKinnon, 2013, p. 3). In the remaining part of the paper, I start thinking with these possibilities, exploring “matters of care” as an everyday neglected doing, a non-innocent emotional state, and an ethico-political obligation. Through examples from semi-arid areas of India, I read these dimensions of care against one another, to indicate alternative places from where we may begin re-thinking climate and development practices on the ground.

3.1 | Care as everyday neglected doings

Materialist feminism brought timely attention to those necessary, yet devalued practices of care historically relegated to the private sphere of the home (Federici, 2012). Through their insistence for a politics of social reproduction, the “fleshy, messy and indeterminate stuff of everyday life” (Katz, 2001, p. 711), feminist scholars highlighted how redressing the invisibilisation of care doings requires a radical epistemological shift where everyday life and its problematics become key sources of knowledge (Smith, 1987). This shift is often described in terms of feminist standpoints (Harding, 1995), representing a commitment to value the experiences and knowledges generated within contexts of marginalisation. As a form of knowledge politics “from below,” standpoints represent a move to re-centre our analytical and methodological frame around all those practices whose importance only becomes evident when we care for some issues over others (Puig de la Bellacasa, 2017, p. 59).

When it comes to challenging climate science and development policies “from above,” the suggested epistemological shift is crucial. Both fields have in fact historically discarded people’s everyday experiences as somehow irrelevant to the purpose of modelling global climatic events and designing effective responses (Israel & Sachs, 2013). By contrast, situated investigations into vulnerability and adaptation (Kothari & Arnall, 2019) suggest that grounding our analysis within the everyday problematics of farming communities, households, and individuals, and exploring how socio-environmental change becomes relevant *from there*, might be the only way to make development practices relevant to people’s everyday realities (Ensor et al., 2019; Sugden et al., 2014). Rather than assuming the centrality of the climate problem and framing solutions in terms of agriculture productivity, a standpoint “from below” requires refocusing vulnerability, adaptation, and resilience research from within the dynamics of household production and reproduction, connecting them to broader processes of agrarian transformation at multiple scales. This entails redesigning our research questions, moving away from the narrow lens of climate risks, towards a broader investigation of the whole set of changes people experience across the spectrum, and a socio-historical analysis of their emergence (Ribot, 2014).

For example, in semi-arid areas of India, the climate crisis cannot be separated from the long-standing crisis of agriculture that rendered small and marginal farming an increasingly unviable source of livelihood (Reddy & Mishra, 2010). Its roots go back to the Green Revolution policies of the 1970s, promoting monocultures of high yielding varieties, secured irrigation and agrochemicals, which ironically are advocated by the 2010 World Development Report as being a “good

model for climate change adaptation” (cf. Ireland & McKinnon, 2013, p. 4). While the impacts of the Green Revolution on rural household dynamics have been explored at length within peasant studies and political ecology (Duvvury, 1989; Shiva, 1991), climate and development research is yet to reflect on the ways socio-economic transformations introduced during this period are impacting people’s vulnerabilities to climate uncertainties in the present.

When it comes to retrieving neglected practice of cares, awareness of this historical context would urge us to reflect on the incidence of rural male outmigration, and the mirroring peasantisation of female agricultural labour, a phenomenon referred to as “feminization of agriculture” (Pattnaik et al., 2018). Estimates suggest staggering paradoxes, whereby while women contribute to up to 75% of agriculture-related work, only 12% have operational control over the land, earning wages 50–75% lower than their male counterparts (Srivastava, 2011). Such a large presence of women in agriculture requires systematic and targeted support when it comes to policies addressing climate uncertainties in rural areas; a support that is currently lacking due to women’s invisibility as the primary agriculture producers in the country (Agarwal, 2003). While climate-solutions are often targeted to male farmers as the “de facto” landowner – a strategy exemplified by the “model farmer” approach (Taylor & Bhasme, 2018) – reimagining development as “matters of care” suggests that we should rethink altogether who a “farmer” *is* and what her/his knowledges, needs, and aspirations are. Following a position advocated by feminist grassroots organisations (see MAKAAAM, 2014), this redefinition should include the whole spectrum of women and landless cultivators, labourers, sharecroppers, and tenants whose care for the land forms the bulk of farming practices, whose livelihoods are at the frontline when it comes to climate change, and yet, whose experiences and knowledges keep being marginalised when it comes to finding solutions.

Further, the suggested epistemological shift indicates the need to not only redefine *who* does the work of farming, but also to reflect on the hierarchies determining *what* work gets quantified and valued. According to Henry (2018), struggles over “what work counts” are reflected through a politics of measure, one that politicises how practices of quantification are ascribed within specific cultural and political meanings assigning higher value to some doings over others (Mann, 2007). Bringing a politics of social reproduction together with one of measure, as suggested by Henry, offers an important strategy to reveal the impacts that measurements of efficiency and productivity promoted through “climate-fixes” have on the lives of farmers, broadly defined as above.

Looking back at the drip irrigation boom narrated by Birkenholtz (2017, 2020), engaging with a politics of measure would reveal, for example, how the success of such universally “efficient” technology rests on the availability of underpaid and precarious female labour engaged in the tasks of manually cleaning the calcium deposits obstructing irrigation outlets. Awareness of the systematic invisibilisation of these practices of care as unaccounted maintenance work of technologies, however, should not suggest their wholesale refusal. Rather, rethinking development as “matters of care” stands for creating alternative modes of accounting, able to value the whole set of labours involved in the production, implementation, maintenance, and repair of solutions currently discounted by dominant methods quantification.

In this section, I have argued that rethinking climate-informed development through neglected care doings requires a standpoint from below, situating our analysis within everyday relations of production and reproduction in specific socio-historical contexts. Generating a richer representation of development practices requires understanding the whole set of conditions and mediating agencies behind the stories of success of development’s climate solutions, putting neglected labour relations front and centre, and, as I explore next, the desires, hopes, and aspirations driving people’s actions.

3.2 | Care as emotional relatedness

To care, a necessary doing for the sustenance of life, also represents a strong emotional force, as suggested by the centrality of love, concerns, and hopes behind every caring relation. Yet, as feminist scholars have argued (Mol & Moser, 2015; Tronto, 1993), it would be mistaken to interpret these feelings as innocent or selfless. Rather, emotional connections are fraught with power relations that are worked out differently in different contexts (Lawson, 2007). This ambiguous quality of care as a non-innocent emotional state in relation with others changes how “matters of care” act as a powerful affective force with very material consequences (Puig de la Bellacasa, 2010).

Despite the importance of emotional relations circulating through development projects, climate and development scholarship is yet to embrace the “emotional turn” initiated by feminist political ecologists (González-Hidalgo & Zografos, 2020; Nightingale, 2013; Singh, 2013; Sultana, 2015). This rich body of work showed how attention to everyday affective care labour enriches our understanding of livelihood practices in contexts of socio-environmental change. Rather than a fully interiorised mental state, emotions are relationally produced between people and places through complex socio-spatial articulations (Davidson et al., 2012). The emotions people feel are therefore deeply socionatural, produced through interactions with both humans and more-than-human others (Nightingale, 2013). These dynamics are exemplified by the work of

Sultana (2015) who unpacked the sheer emotional labour required to access arsenic-free water in Bangladesh, one that is particularly challenging for poorer women who, lacking access to a safe well of their own, are often forced into exploitative patron–client relations. A key learning from this emotional turn for climate and development research is an understanding that gendered work around natural resource access is not only a devalued physical labour, but also an emotional one, whose marginalisation within development policies and practices should be a cause of concern.

In particular, unpacking how, why, and for whom different emotional responses influence livelihood options could help us understand vulnerabilities at a much deeper level. Rather than simply reflecting differences in people’s capacities to deal with environmental change, the affective dimension of caring relations requires that we consider vulnerabilities as a function of both material and emotional relationships people engage with in their day-to-day lives (Sultana, 2011). In this context, González-Hidalgo and Zografos (2020) suggest that attention to emotions adds details to the political dimension of resource management practices, challenging the separation between feelings and the detachment often ascribed to the political arena. While constructive emotions like self-confidence or group identity may drive collective action, experiences of exclusion and marginalisation could narrow down the political spaces where “the demands by those who do not count to be counted, named and recognised” (Swyngedouw, 2014, p. 129) can be voiced. Placing affective care relations as an integrative part of the political processes is important if we are to challenge the autonomous, rational, profit-maximising subject taking the best-informed decision to manage resources under climate uncertainty.

It may be indicative here to look at examples around participatory groundwater governance in semi-arid India mentioned earlier (Argade & Narayanan, 2019), where Taylor (2013b) suggests that it is fear, worry, and anxiety for crop failures that drives people’s decisions around entering competitive well drilling, sowing water-intensive cash-crops, or using abundant pesticides. In these debt-driven rural economies, the stress of living in an increasingly precarious environment intertwines with the sheer emotional labour required to continuously negotiate access to resources such as agricultural inputs, machineries, or water, often held by dominant groups. It is indicative that the “feminization of agriculture” is often referred to as “feminization of agrarian distress” (Pattnaik et al., 2018), highlighting the physical-cum-emotional labour carried by women farmers, particularly from marginalised castes, having limited formal decision-making powers to navigate these exploitative relations. Climatic uncertainties add important dimensions of stress, tension, and pain to this picture (Sultana, 2011) likely to shape new dynamics of vulnerabilities, whereby marginalised individuals may be incorporated into social, economic, and political relations under increasingly unequal terms (Taylor, 2013a). Participatory practices may therefore be ill-equipped to tackling environmental exploitation and social inequalities, unless they conceptualise how natural resource management is as much about informed decisions people make, as it is about the intersectional and affective labours of care people engage with to secure their livelihoods and wellbeing.

What then might alternative forms of participation be, that are more accountable to the constraints of care as a physical *and* affective labour disproportionately falling onto the shoulders of the most disadvantaged? While the complexities highlighted so far are not conducive of easy answers, arrangements such as community group farming led and managed by women from marginal backgrounds may offer ideas to learn from. Few scholars have already examined these grassroots forms of female organising in relation to the alternative economic and ecological arrangements they articulate (Agarwal, 2020; Sudgen et al., 2021). Grounded in shared material obligations and strengthened by positive emotional connections (Leder et al., 2019), these groups have been effective in mobilising a collective voice among participating women, claiming ownership over the land they cultivate and a recognition as farmers in their own rights. What remains to be explored is how these grassroots forms of female organising can also foster more “climate-wise” development pathways, how different arrangements work across contexts and for different people without falling into the clutches of generalisable and scalable solutions.

This brings me to the final dimensions of “matters of care” I wish to discuss: for if abstract principles cannot guide development practices on the ground, no matter how grounded in ideas of justice, participation, or sustainability, then how are we to rethink our ethical and political engagements as we strive to respond to the complexities of specific circumstances?

3.3 | Care as an ethico-political obligation

Feminist care ethics disrupts and displaces the security of normative moral precepts with a politics of care tied to concrete circumstances (Tronto, 1993). Such an ethico-politics of care cannot be adjudicated following timeless norms of morality, but rather reflects hands-on practices that need to be worked out in response to specific situations (Puig de la Bellacasa, 2017, p. 138). For this reason, Puig de la Bellacasa (2011) suggests that an ethic of care is better thought of as developing through “regimes of living”: arrangements of material, technological, emotional, ecological, and political elements brought

into alignment in response to a given problematic (Collier & Lakoff, 2005). It is precisely its grounding within the specificity of every circumstance that turns care ethics into a politics *and* an obligation, a necessity emerging from the material and affective constraints of everyday life as we strive to make living with others “as well as possible.”

Recognising that ethical choices can only be formulated from a recognition of our interdependent relations suggests that an ethico-politics of care should work alongside and within one of vulnerability (Butler, 2016). Contrary to conventional understanding of vulnerability as a negative condition that makes us susceptible to risks and dangers, “matters of care” sees it as a state of “shared fragility” that is common to humans and all other beings on this planet (Butler, 2016; Gilson, 2011). Following Gilson (2011), vulnerability thus represents “a basic kind of openness to affect and being affected in both positive and negative ways” (p. 310). Mindfulness of this vulnerability as the basic precondition to both care and injury, Butler (2016) explains, engenders a new politics that begins from a recognition that we all are “dependent on what is outside ourselves, on others, on institutions, and on sustained and sustainable environments” (p. 29) in order to live and flourish.

This heterodox vision of vulnerability as “shared porosity” (Butler, 2016) is key to inform a new ethical and political praxis for climate and development policy. To date, this field has in fact been largely driven by a negative vision of vulnerability, reflected in the definition adopted by the IPCC (2014) where it refers to the “propensity or predisposition to be adversely affected” (p. 23). Within development circles, vulnerable subjects are problematic because they lack the capacities to protect their own wellbeing from adverse circumstances (Chandler & Reid, 2016). This focus on vulnerability as an individual weakness, however, is not only mistaken, but creates the illusion that, like any undesirable trait, it may be eliminated. According to Gilson (2011) this “wilful ignorance” of the nature of our interconnected existence is what tricks us to pursuing “invulnerability” as something that is both desirable and achievable. The aim of the climate and development agenda becomes that of eliminating vulnerabilities through the antidotes of adaptation and resilience (J. Barnett, 2020), fostering a certain kind of individuality described by the “arrogantly self-sufficient, independent and invulnerable master subject” (Gilson, 2011, p. 312).

By contrast, “matters of care” require that we attend to the obligations of our relatedness, grounding our actions within the necessities of the relations we form with human and other beings, so as to achieve a fairer balance between “who and what is enabled to flourish and who and what is harmed” (Tschakert & Tuana, 2013, p. 87). Rather than attempting to eliminate vulnerability through resilience, an ethico-politics of care requires finding ways to keep the two together in a balance we can ethically justify. Moving away from the binary conception of being *either* vulnerable *or* adaptable and resilient demands changes to development approaches adopted until now. Alongside the other two dimensions, an ethico-politics of care begins from a situated examination of the social, economic, political, and historical entanglement of humans and other beings, so as to reflect on the ways benefits and harms from prescribed policies may be redistributed. For if it is true that vulnerability is a shared condition, Gilson (2011) reminds us, it is also an ambivalent one, as not all of us experience it in the same way. Examining what particular forms vulnerability takes for different people connected through a given “regime of living” could help us to explore the complexities behind actors’ decisions and their livelihood strategies, as being at the same time vulnerable and resilient across different axes.

Finally, recognising vulnerability as a condition of mutual fragility expands the horizon of our “matters of care” towards all living beings as well as things (Mol & Moser, 2015), suggesting an entirely different mode of engaging with the climate-fixes proposed by development practices. Rather than seeing them as complete and finished artefacts, “matters of care” suggests that we recognise their inherent fragility and the necessity that we take care of them, through continuous practices of maintenance and repair (Denis & Pontille, 2015). Fluidity, adaptability, and flexibility rather than fixity and control should be the aim of the designer. Just like the Zimbabwe bush Pump narrated by de Laet and Mol (2000) whose success is ensured by its adaptability to different contexts, “good” climate-fixes are not those with rigid specs and performances optimised in a laboratory. Rather they incorporate in their design the possibility of their own break-down, adapting their functions to the requirements of different people in different settings. Instead of pushing for a rapid scale-up of ready-made solutions, an ethics of care suggests promoting decentralised adaptation, tinkering, fine-tuning, repair, and maintenance of products by users in their own settings (Arora et al., 2020, p. 251).

Accepting vulnerability as an inevitable condition of being, means abandoning the imperative of control pursued by development practices “from above,” turning climate-solutions into what Jasanoff (2005) calls “technologies of humilities.” These humble and humbling technologies are those that admit uncertainties in their processes and outcomes not as gaps in knowledge to be filled with better modelling, but at a deeper ontological level, as a reflection of our more-than-human “situatedness, intractability and precariousness” (Arora, 2019).

4 | CONCLUSIONS

To critique a particular normative regime is not to reject or condemn it; rather, by analysing its regulatory and productive dimensions, one only deprives it of innocence and neutrality so as to craft, perhaps, a different future. (Mahmood, 2015, p. 21 cited in Fernando, 2019, p. 17)

Embracing a post-adaptation turn in climate and development research, I started this paper by asking what possibilities – ethical, political, and otherwise – may be opened up when we engage with development “facts” as contested and contestable “matters of care.” Guided by the words of Puig de la Bellacasa (2010, 2011, 2017), I proposed a generative critique of development as care; as a strategy to overcome the impasse climate-informed development practices “from above” currently find themselves in. In fact, while their solutions for reducing vulnerabilities and enhancing capacities for adaptation and resilience are increasingly adopted around the world, we have enough evidence to suggest that these strategies have been unable to engender transformative action towards more just and liveable futures (Eriksen et al., 2021; Nightingale et al., 2020).

Contrasting critiques for which unmasking development’s facts as constructed turns into disbelief (Mikulewicz & Taylor, 2020), “matters of care” reflect the intention of not only respecting development solutions as fragile and precarious, but demands an active engagement in their becoming. This hopeful and future-oriented gaze requires that we always reflect on how things could be different if they generated care, so as to achieve a more complete representation of things and relations in the world.

Thinking through a tryptic notion of care as doing/affect/ethico-politics, I argued that a standpoint “from below” enlarges the field of credible experiences, making those neglected practices and affective connections of care *present* as valid alternatives to hegemonic experiences. As a result, a richer and deeper understanding of vulnerability emerges, one that escapes being trapped within universalising measurements of productivity, efficiency, and good governance. The analytical depth required by “matters of care” goes beyond situating questions of vulnerability, adaptation, and resilience within the power dynamics of a particular context (Ribot, 2014; Taylor, 2013a), demanding that we engage with an ethics and a politics of vulnerability as reciprocal fragility which, however shared, does not impact all of us in the same way (Butler, 2016; Gilson, 2011). Mindfulness of this ambiguous character of vulnerability, transforms “matters of care” into a strategy that grounds an ethico-politics development to concrete circumstances, becoming the foundation upon which more inclusive practices can be built upon.

To conclude, I suggest that one such strategy could be found in a research practice that, following Gibson-Graham (2014), is capable of making “small facts speaking to large issues or concerns” (p. S147). Rather than explaining development’s successes or failures in relation to hegemonic forces such as an all-encompassing neoliberal development trajectory, rethinking climate-informed development is to “carefully reconsider the large issues small facts are made to speak to” (p. S149). This does not mean ignoring the “hard surfaces of life” – the political economy and ecology that shapes processes of socio-environmental change – but to widen the field of economic and ecological realities that everyday practices may be speaking to. As hinted throughout the paper, a place from where we may begin exploring these alternatives is the struggles of grassroots (feminist) social movements as they speak to more expansive and inclusive sets of cares animating people’s action. As we rethink climate-informed development as a site that nurtures, rather than suppresses, vulnerability as a state of interdependence, what is needed is a change in habits of perceptions, of thinking and feeling, so that we may build different stories about the large issues that everyday practices of care may be speaking to.

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DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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