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Adaptive publics: building climate constituencies in Bogotá

Article (Accepted version)
(Refereed)

This version available at: http://eprints.lse.ac.uk/64120/
Available in LSE Research Online: June 2016

http://eprints.lse.ac.uk

Adaptive Publics
The Politics of Climate Change in Bogotá

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In May 2013, the mayor of Bogotá, Gustavo Petro, announced his intention to revise the city's master plan.[1] The Plan de Ordenamiento Territorial, or POT for short, had undergone minor revisions since it was established in 2000, but nothing on the scale Petro had in mind. The City Council initially refused to discuss the proposal, leading Petro to pass it by decree. This infuriated his longtime adversaries, who promptly filed suit. A judge sympathetic to the opposition suspended the plan, and over a year later it was still hung up in court. While various dimensions of the proposal provoked discontent, one proved especially incendiary: Petro's desire to reorganize the master plan around climate change. In the words of a critic, though his supporters would agree, the mayor's goal was to make adaptation "the core principle guiding the planning of the city."[2]

Petro began his political career with the leftwing M-19 and spent two years in prison before participating in the militant group's demobilization. Once elected to the House of Representatives and eventually the Senate, he became a key opponent of the conservative political establishment. Petro made a name for himself as a fiery critic of corruption, persistently condemning the intimate relationship between elected politicians, drug traffickers, paramilitary forces, and other private interests. As mayor of Bogotá since 2012, he has expanded his political horizons: in his first year in office, he became an outspoken advocate of the imperative to adapt to the changing climate. This represents a sharp change, since until recently Bogotá was considered to be lacking an adaptation strategy.[3] In contrast, Petro's position has been remarkably unambiguous for a political leader: "Global warming is irreversible. The damage is done, and we can't undo it. It may be possible to slow it down. But if we don't do something now, we're all dead."[4]

The mayor's attention to climate change has angered many, especially those who see Bogotá's future through the lens of capital investment, and his revised master plan has been a lightning rod for criticism. Though he may not achieve all of his goals, he has clearly raised climate change to the top of the political agenda. Despite a cloud of uncertainty hanging over City Hall—Petro's opponents have tirelessly sought to remove him from office—his administration has begun to take action. The municipal agency that once specialized in disaster prevention and response has been given the broad mandate of climate change adaptation. Along with a new title, the District Institute for Risk Management and Climate Change (hereafter IDIGER) was promoted within the city's governance structure and given a budget commensurate to its elevated importance. This allowed the agency to begin implementing a range of adaptation initiatives: from early warning systems and participatory budgeting workshops to bioengineering experiments and watershed management plans. Based on recent fieldwork within IDIGER, and building upon long-term research in Colombia, this article will examine the new techno-political responsibilities, capabilities, and constituencies accompanying these initiatives. It will show how the imperative to adapt to climate change actively reconfigures both urban infrastructures and politics in Bogotá.[5]

In what follows, "adaptive publics" will serve as a way to conceptualize the political constituency assembling around the problem of climate change in the city. Bogotá's recent experiments in urban climate governance will be situated within the politics of security in late-twentieth-century Colombia, whereby victimhood and vulnerability are both targets of governmental intervention and frames of political recognition. These innovative adaptation strategies will be shown to challenge notions of the "public" associated with the liberal democratic polities of North American and European cities. It will be argued that the politics of climate change in Bogotá aims to link a redistributive economic agenda to the technical project of adaptation in the service of a broad program of social inclusion. An analysis of interventions aimed at building social infrastructure throughout the city's hydrological systems will highlight a form of "metrological citizenship," whereby the inclusion of the urban poor within the political community of the city is predicated on (and enacted through)

practices of measurement. While urban politics in Latin America have long revolved around popular demands to be counted, this article will show climate change adaptation to be the most recent idiom in which claims to recognition-through-enumeration are being articulated. However, looking ahead to the future, the political uncertainty plaguing Bogotá's adaptation agenda parallels the ecological uncertainty to which it responds.

From Endangered City to Resilient City

Throughout the 2000s, crime and violence in Bogotá dramatically decreased and security steadily improved. Yet there was something paradoxical about this change. Although the general atmosphere is now more relaxed, Bogotá remains, to some degree, in the grip of Colombia's violent past. It continues to be understood as an endangered city—that is, as a threat-ridden place.[6] Though immediate dangers have declined, a more general sense of endangerment remains. Colombia's history of conflict, violence, and instability continues to orient both popular sentiments and political rationalities towards the ultimate pursuit of security. Governmental authority, national unity, and social order are framed primarily in these terms. The persistence of everyday concerns about insecurity has many implications. One is that democracy and security have been fused such that a number of rights and entitlements have been reconfigured by the imperative to protect life from threat (Rojas 2009; Zeiderman 2013; cf. Goldstein 2012). Another is that elected officials across the political spectrum must position themselves within the national security landscape, such that the moderate and radical Left seek to promote their own versions of security in order to prevent the Right from monopolizing this key political terrain (Villaveces Izquierdo 2002; Rivas Gamboa 2007; Llorente and Rivas 2004).

The constitutive relationship between politics and security has its parallel in the domain of urban politics and government, in the relationship between the state and the urban citizen, and in the formation of the city as a political community. Over the past two decades, a political consensus—a governing pact—has formed around the imperative to protect vulnerable populations from threats of both environmental and human origin.[7] Risk management is accepted across the political spectrum as a governmental framework that can encompass a range of objectives. Interventions throughout the urban periphery have focused on reducing vulnerability, mitigating risk, and protecting life in order to deal with problems as diverse as informality, criminality, and marginality (Zeiderman 2015). In risk management, a series of mayoral administrations with varying political commitments and different visions for the future of Bogotá have found an ostensibly neutral, "post-political" way to address the social and environmental problems of the urban periphery and to build a political constituency among the urban poor. This has enabled left-of-center administrations to articulate a progressive approach to security that insulates them from the conservative establishment's efforts to criminalize, persecute, or annihilate anything resembling radical ideology. The politics of security in late-twentieth-century Colombia have set the parameters by which urban life can be governed and lived.

Responses to climate change in contemporary Bogotá emerge out of this history. For it has shaped the terrain on which progressives like Petro now search for a viable political idiom in which to govern. Like disaster risk management before it, climate change adaptation is a platform from which to address a range of political objectives. Reverberations of longer histories of insecurity are also evidenced by the current emphasis on adaptation over mitigation.[8] Organized around categories of "victimhood" and "vulnerability" and the identification of threat and danger, security and adaptation share a common logic. The concept of "resilience," now firmly established in the lexicon of government in Bogotá, also makes intuitive sense in this context; if "endangerment" indexes the condition of existence

whereby threats of human and non-human origin are always looming, then "resilience" names the capacity to withstand them or to bounce back after they materialize. There are other reasons why adaptation and resilience are favored over mitigation at the present moment in Bogotá.[9] But this orientation is shaped fundamentally by the horizon of security and risk that structures politics and governs everyday life in Colombia. The endangered city slides easily into the resilient city.

That said, Petro and members of his administration often defy the adaptation/mitigation dichotomy by articulating the dual benefits of any single initiative. In scientific and policy discourses, there is a general shift toward recognizing the positive feedback loops that link mitigation and adaptation, and in Bogotá new urban policies are justified on similar grounds (Bulkeley 2013). Densification of the city center is one example: the goal of cutting emissions from motorized transport by moving people closer to their jobs is linked to the objective of reducing the number of people living in areas vulnerable to environmental hazards on the urban periphery.[10] In climate change, Petro has found a political discourse that can unify a broad range of policies and plans for urban development.

In 2013, I returned to Bogotá to find out more about this surge in climate change politics. A number of people I spoke with discussed Petro's concern for the risks associated with extreme weather events and his support for the relocation of families living in "zones of high risk." Around the same time, he issued a decree ordering 12,000 additional households to be resettled over three years. This was a dramatic increase both in the scale of the relocation program and in the housing subsidy the municipal government would provide to each family (now 45 million pesos, or about $25,000). Petro explained to the media that this decision was long overdue. Thanks to inaction on the part of previous administrations, he said, "thousands of families have settled in immitigable high-risk zones. Living in a *zona de alto riesgo* means an increased probability of death due to environmental risks…45 million [pesos] is the amount required to speed up the process of relocation and completely undo a decade of delay in the city of Bogotá." Petro was clearly committed to expanding the resettlement program in the self-built settlements of the urban periphery—to using techniques of risk management to respond to the precarious living conditions of those on the margins of Colombian society. But I wanted to hear directly from those managing this program how they understood City Hall's new enthusiasm for their work.

Ulises, the program director, confirmed what I had read in the papers: "The budget for relocation has quintupled under Petro! Initially we were in charge of relocating about 3,000 households annually, but this number has now increased to 15,000." I then asked Ulises why he thought Petro found this program so important. He told me: "As you know, the guiding principle behind our work is to save lives. This hasn't changed. Everything else follows that principle. Petro knows that every four months or so we're hit hard by heavy rains and landslides. He's got that clear. He says time and time again that he doesn't want to lose a single life in the *zonas de alto riesgo*." Until this point we were on familiar ground, and I told Ulises that each of his predecessors had said the same thing. "But," he retorted, "Petro understands what no previous mayor of Bogotá has: that climate change is absolutely real and serious, and that what we're doing here with the resettlement program could become the foundation for a citywide strategy of adaptation."

This can be understood as an expansion of established approaches to governing risk in Bogotá, whereby what began as a relatively limited experiment is on its way to becoming a generalized strategy of urban government. But the escalation of interventions in high-risk areas also signals a shift in the way these interventions are framed. What was once a way to protect poor and vulnerable populations from regularly occurring disasters has morphed into a citywide response to the potentially dire consequences of climate change. The problem is no longer the relatively constant periodicity of the rainy season in Colombia and its rather

predictable effects in the city's steep hillside settlements. Petro has recognized that global warming will increase the severity and frequency of extreme weather events, thereby intensifying pressure on urban infrastructure and housing. The compounded uncertainty inherent to climate change means that existing techniques for governing risk in Bogotá are necessary but insufficient.[11] This requires not only expanding the Caja's resettlement program throughout the self-built settlements of the urban periphery but also using this program as a guide for how to plan, build, and govern the city as a whole.

Between Victimhood and Vulnerability

I went back to Bogotá in August 2014 to see how the politics of climate change was playing out on the ground. My visit coincided with the Rio + 20 Summit, which followed the United Nations Conference on Sustainable Development that had taken place in 2012 in Brazil. For three days, Bogotá would play host to high-level dialogues between scientists, policymakers, and non-governmental organizations from around the world. The delegates were expected to share their knowledge and experience with climate change adaptation and mitigation. But the international visitors, who travelled from as far as Egypt and China, were allocated a small amount of time relative to their local hosts. Capitalizing on Bogotá's global reputation as a "success story" for its innovations in urban governance, the event's organizers positioned themselves as leaders in the field of climate change adaptation. As such, the summit was an opportunity for Petro's administration to showcase its agenda, perhaps even to mobilize international support for the revised master plan, which remained suspended.

I awoke early to get to the conference venue before the proceedings began. During the taxi ride, I noticed something not terribly unusual in Bogotá: a line of over fifty people waiting single-file outside a non-descript office building. Five blocks later I passed a similar scene, except this time the line stretched down the block and around the corner. I asked the taxi driver what was going on. It turned out that each building housed a *Centro Dignificar* (a literal translation is impossible; *dignificar* means simply "to dignify"). These were centers set up after the 2011 passage of the Law of Victims and Land Restitution to house representatives of the national and local government agencies responsible for protecting the rights of and providing reparations to victims of violence. Since the 1960s, Colombia's armed conflict has caused an inordinate amount of death, destruction, and displacement. Those lined up were hoping to register or advance their claims to land restitution. Waiting to be recognized as beneficiaries of a state that adjudicates rights on the basis of victimhood, they were subjects of what Didier Fassin and Richard Rechtman (2009) have called the "empire of trauma."

I arrived at the summit in time to catch the mayor's welcome address. His message was plain: climate change, as he put it, is "killing the poor."[12] Petro's speech was also an opportunity to take shots at national government's housing policy. President Juan Manuel Santos had recently declared his intention to build 100,000 new homes, mostly on the periphery of Colombian cities, and to give them away to members of the urban poor who were also victims of armed conflict (a benefit accessed at the centers I had just passed). The national government's housing policy conflicted directly with Petro's plan for densification. The mayor's goal was to build new housing in the city center for people currently living on the edges of the city, especially vulnerable populations at "high risk" for landslide and flood. What Petro did not emphasize in his opening remarks was the common ground he and the President shared. Despite their disagreement as to where, when, and how new housing should be built, both proposals forged a connection between plans for the city and the lives (and deaths) of the urban poor.

This unremarked congruence reveals the degree to which the politics of security sets the conditions of possibility for everything from climate change adaptation to housing policy. But there were two important differences between the competing visions. Santos's plan understood the poor as *actual* victims while Petro's alternative saw them as *potential* victims (in other words, as vulnerable); and while the former focused on the past threat of *armed conflict*, the latter targeted the future threat of *climate change*. These distinctions notwithstanding, both politicians—despite their professed opposition—emphasized threats to life and positioned the victim and the vulnerable as the unassailable moral subjects of Colombian politics and as the deserving recipient of the state's official beneficence. The categories of victimhood and vulnerability shape the field of governmental intervention for climate change adaptation in Bogotá.

Adaptive Publics

The rest of the Rio + 20 Summit was a platform for the Petro administration to showcase its climate change agenda. Details of that agenda will be discussed shortly. The overarching message communicated to the audience was the goal of assembling a political constituency through the imperative of adaptation. Everyone I heard speak on stage, everyone I talked to face-to-face, seemed to agree: the city government's guiding mission, and in particular that of IDIGER, the newly created risk management and climate change agency, was to build a public around the goal of adapting to a decidedly unpredictable and potentially violent urban ecological future.

That said, the term *público* did not figure prominently in these discussions. This fact should not be overlooked. Better yet, it should be cause to consider some of the problems involved in focusing the lens of "publics" on the politics of climate change in Bogotá. A critical approach to such concepts is surely necessary when dealing with what postcolonial scholars have shown to be societies perpetually divided between those who belong to the imagined collectives of liberal democracy and those who do not (Chatterjee 2011; Chakrabarty 2000). In Latin American cities, categories like the "citizenry," the "public," and the "commons" have often competed with other notions of the body politic, and have long been internally stratified along lines of race, ethnicity, gender, education, language, sexuality, class, and religion (Sabato 2001; de la Cadena 2000). A similar point can be made about the linear privatization narratives central to critiques of neoliberalism, and their supposed reversal in a "post-neoliberal" era (Yates and Bakker 2013; Bakker 2013). Again, the category of "public" often occludes more than it reveals.

Caution is even more warranted when we recognize that for those on the margins of civil society, liberal democratic institutions and ideals are often circumscribed by and subordinated to other rationalities of rule (Chatterjee 2004). Many uses of "publics" as an analytical frame begin with a rather taken-for-granted notion of democracy. One example would be science studies scholars, who sometimes commit this error even as they rethink democracy in order to make room for nonhuman things.[13] For they often fail to engage with histories and geographies of "disjunctive democracy," as Teresa Caldeira and James Holston call it, "where the development of citizenship is never cumulative, linear, or evenly distributed for all citizens, but is always a mix of progressive and regressive elements, uneven, unbalanced, and heterogeneous" (1999:692). Automatically resorting to notions like "publics" limits our ability to think through the politics of climate change in decidedly illiberal or non-democratic circumstances. This is no doubt the case in places like Colombia, where political liberalism has always been contested and incomplete. Perhaps the same concern applies even to "advanced" liberal democracies of Europe and North America.

If not in the idiom of "publics," how is the imperative to create a political constituency around climate change adaptation imagined and discussed in Bogotá? More prevalent are collective categories such as *la gente* (the people), *la comunidad* (the community), *la población* (the population), and *lo popular* (the popular). These categories are often foregrounded in political discourse, pointing to the populist orientation of climate change adaptation in Bogotá. If the "public" is invoked, it's when Petro and other members of his party talk about *la alianza público-popular* (the public-popular alliance). Here the state is synonymous with the "public" and the political constituency it seeks to mobilize is the "popular." It's tempting to understand climate change politics in Bogotá as populist—that is, as a politics based on the will of "the people" as the "rightful source of sovereign authority" (Samet 2013:526).

Nevertheless, there are good reasons to adopt "publics" as an analytical lens while recognizing the potential problems involved in doing so. Central to Petro's adaptation agenda is the goal of addressing a fragmented and somewhat privatized urban infrastructure. For example, the city's water supply, sewage, and drainage systems are run by a public agency, but that agency contracts out much of the construction and management of infrastructure to private firms, who maintain it unevenly across the city. Starting with drainage (or garbage, actually, but that's another story), Petro wants the city's vital systems brought back fully under public management, or rather into an arrangement whereby the city government partners with neighborhood associations (here again, the "public-popular alliance" is invoked). Thinking through "publics" highlights the degree to which adaptation in Bogotá aims to reorient spaces of urban collective life around the common good.

This, in turn, directs our attention to questions of rights and citizenship. On many occasions in Bogotá (and on Twitter), I encountered the slogan: *El cambio climático es un hecho, adaptación es un derecho!* "Climate change is a fact, adaptation is a right!" What a few years ago might have been framed as the "right to the city" is now expressed as the right to a city adapted to future (climate) uncertainty. "Citizenship" (in this securitized form) is the idiom within which the rights and responsibilities of adaptation are discussed.

Another reason to conceptualize the politics of climate change in Bogotá through the lens of "publics" has to do with the boundaries of political discourse in Colombia. As Robert Samet observes, "the term *populism* has decidedly negative overtones. To call someone a 'populist' is to accuse him or her of pandering to 'the masses,' whipping up anti-institutional fervor, and using social unrest for personal political gain" (2013:526). "Populist" is a damning word in Colombian political discourse regardless of whatever analytical neutrality it may have for social scientists, and is automatically how Petro's opponents characterize his initiatives. It immediately draws connections to clientalism, patronage, and corruption, delegitimizing its participants as delusional masses irrationally following a charismatic leader (cf. Samet 2013). The analytical category of "publics," on the other hand, is less freighted.

Finally, "publics" facilitate comparison, not in the sense of searching for equivalence but rather thinking across difference. Approaching issues of adaptation in Bogotá through this lens offers points of connection with cities elsewhere, both North and South. In the following sections, "adaptive publics" refers to the hybrid collectives assembling around the problem of climate change adaptation in the city, and the technical and political projects they are pursuing, or that are being pursued in their name. I'll now discuss some of Bogotá's new adaptation initiatives, highlighting the key conceptual and practical issues they present. Each, I argue, contributes to the creation of a new political constituency, an "adaptive public." But the public assembled around the problem of climate change, in contrast to the public of liberal democratic theory, is predicated on threats to life, stratified by categories of vulnerability and victimhood, and summoned by promises of protection.

Social Infrastructure

Since Petro was elected mayor, one of City Hall's key objectives has been to foster "social infrastructure" in the self-built settlements of the urban periphery. Special priority has been given to areas adjacent to hydrological features, such as wetlands, canals, rivers, drains, and ravines. The stated goal is to reduce concentrated vulnerability among the urban poor by strengthening their collective capacity to manage the risks associated with climate change. *Participación popular*, or "popular participation," is its guiding principle.

In late 2013, I attended a launch event for the Red Social de Gestión de Riesgo, or the Social Network of Risk Management. The event was held at Bogotá's main convention center and hosted by IDIGER. Present were voluntary associations of all sorts, some of which were Juntas de Acción Comunal (the lowest level in the city's governance structure, hereafter Juntas) while others were neighborhood organizations focused on the environment, culture, or security. Over a thousand people took part, most of them inhabitants of the self-built settlements of Bogotá's urban periphery. The day began with a general assembly, in which IDIGER's director, Javier Pava, outlined the program. A series of workshops followed on themes ranging from participatory risk management and community-based vulnerability assessment to grassroots environmental education and bottom-up solid waste reduction. Group leaders spoke about organizing in their neighborhoods around issues related to risk, working in both partnership with and resistance to IDIGER, and what others could learn from their experiences. These were the self-appointed spokespeople for the adaptive public. Though they did not speak with one voice—in fact, disagreements arose over how best to manage risk and reduce vulnerability—they consistently took a critical but collaborative stance relative to the municipal government's adaptation agenda.

The overarching themes of the event were popular participation and *auto-gestión* (self-governance). These values sat in tension with the fact that most of the participants (even some children accompanying their parents) were wearing jackets, hats, and bandanas emblazoned with IDIGER's name and logo. However, this did not stop many neighborhood leaders from denouncing the city government's relocation program for households in "zones of high risk" or from proposing their own alternatives. Again, the members of the adaptive public participating in this event positioned themselves as both belonging to and critical of the official adaptation program. Even when disparaging IDIGER, they were applauded vigorously by invited participants and government officials alike. As the day progressed and strategies were shared, contact information exchanged, and potential collaborations discussed, calling this a "social network" of risk management began to make sense. Compared to the heavily technocratic approach to governing risk I had seen a few years before, the objective of creating a political constituency around climate change—an adaptive public—stood out.

The Rio + 20 Summit took place nearly a year after this launch. One of my reasons for attending the later event was to see whether anything initiated at the earlier one had materialized. To find out what had become of the "social network" of risk management, I sat down with Priscilla, one of the creators of IDIGER's Community Initiatives Program. She explained to me that the program began in 2012 as "a way to work directly with the *comunidades de base* (grassroots), to encourage participation from the bottom up. The objective is to *convocarlos a todos* (bring together, or summon, everyone) to do something about risk." She told me, "adaptation is impossible without the communities. They can organize themselves and make their own decisions, but they also require close accompaniment to organize in an adequate—that is, an adaptive—manner."

The Community Initiatives team, Priscilla said, supports this approach. It works to find synergies between the activities of existing social organizations adjacent to waterways

and the broader goal of climate change adaptation. Her team starts by offering training in capacity-building before getting into exercises designed to identify threats, risks, and vulnerabilities. An IDIGER representative eventually discloses a budget set aside for the group (somewhere around 200 million pesos, or about $80,000) to conduct remediation works. The organization has to contribute about $6,000, but in-kind donations are encouraged (use of a meeting room, for example). Throughout the process, IDIGER staff members help the group to formulate a plan, allocate the budget, and contract workers—that is, to become an adaptive public.

"What sort of concrete initiatives have been done thus far?," I asked. Priscilla responded: "Since climate change is upon us, we have to make sure the streams and canals are in the best possible condition. So we clear out and reforest areas surrounding water bodies, working with communities so they don't go back and put more solid waste or rubble into the system." She then went on to define infrastructure as a socio-technical system: "The canal is not just a physical thing—it's also made up of people, and with a bit of support we find that the community organizes around it to monitor the water level, to clear out debris, to work together on these sorts of problems but also on others that have less to do with the canal, with infrastructure, or with adaptation." The maxim "people as infrastructure" (Simone 2004) was implicit.

Priscilla was describing a process by which the ideas introduced at the 2013 event—social networks, social infrastructures—were put into practice. Implicit was the fact that IDIGER's training sessions communicated to community groups the need to organize around the collective condition of vulnerability and the overarching imperative of climate change adaptation. By doing so, these groups could enter into partnerships with municipal government, making them subcontractors rather than simply beneficiaries. Responsibility was devolved to individuals, households, and communities. Yet it was also through this process that people on the margins of society could belong to a political constituency. In return, they benefited from a novel form of distribution-via-adaptation, whereby public funds designated for climate change responses are put directly in the hands of those at the lowest level of the political system and the social order (cf. Ferguson 2015).

Metrological Citizenship

To better understand this process, I accompanied the Community Initiatives team on a number of *recorridos* (tours or rounds). One cold, rainy Saturday morning, we travelled to a low-income neighborhood called Nueva Delhi on Bogotá's far southeastern edge. We were greeted by the head of the local Junta, who welcomed everyone with a round of coffee from the corner bakery. The purpose of today's exercise, he announced, was to unite those committed to organizing an intervention in the adjacent *quebrada* (ravine).[14] He introduced Tomás from IDIGER. After providing some background on his agency's coordinating role within the city's climate change adaptation efforts, Tomás got down to business. He went around the room, appointing each person a category of object to measure or count (square meters of stream edges to be reinforced, cubic meters of garbage to be removed, number of trees to be felled). Once duties were assigned, the group took off on foot. We ascended until the sidewalks turned to dirt tracks and the houses gave way to dense thickets of alpine scrub.

We spent the rest of the day—close to eight hours total—traversing the *quebrada* from top to bottom (see fig. 1). Dropping nearly a thousand feet in elevation, the group paused every few minutes to measure an area of erosion, count leaking water supply tubes, or register an illegal dumpsite. The team worked tirelessly to construct a systematic inventory, which they carefully recorded in their Social Network of Risk Management notebooks. The

data gathered would eventually be incorporated within the official adaptation strategy for the area and guide the distribution of resources for specific projects.

[Insert Figure 1]

These acts of measurement can be understood as acts of citizenship, as the collection of data is also the assembly of a certain kind of public. Tomás assigned responsibility to each person to count something, and it was through these counts that those counting could themselves be counted as members of a political constituency—in this case, one organized around the imperative of climate change adaptation. Expanding upon Andrew Barry's (2011) "metrological regimes," this is an expression of something we might call "metrological citizenship," whereby political recognition and entitlement are predicated on (and enacted through) performances of enumeration, quantification, calculation, and measurement (cf. Appadurai 2012; Townsend 2015). Barry insists that metrology is not antithetical to politics: "Measurement and calculation do not only have anti-political effects" (2011:274). After all, being counted as a member of the public is one of the basic procedures of liberal democracy. But there is nothing necessarily liberal about the politics of metrology (cf. von Schnitzler 2008). The constitutive relationship between recognition and measurement in metrological regimes (whether liberal or illiberal, democratic or populist) sets the boundaries of the body politic and shapes struggles over inclusion and exclusion.

The Quebrada and its Public

During these *recorridos*, new political ecologies came to life. The groups gathered together were united by the *quebrada*. Their participants were not from the same Junta or even the same neighborhood, but from opposite sides of the ravine, from different Juntas, from a range of community organizations. Stopping frequently, the group snowballed as it descended, doubling in size by the end of the day. The *quebrada* was assembling a political constituency that differed from any that existed before the exercise began.[15]

Yet hard political work was still to come. Before an intervention could begin, the group had to designate one organization legally responsible. Difficult questions arose about how best to organize, socially and politically, in order to execute the project: Who speaks on behalf of the group? Who is in and who is out? Does the *quebrada* itself have any say? If not, who should adjudicate the rights and resources now attached to it? The gender imbalances endemic to neighborhood-level politics in Bogotá were front and center. The Junta leaders were predominantly men, whereas the women present mainly represented voluntary, issue-based organizations. When Gladys, the spokeswoman for an environmental group, challenged Don Orlando, the President of the Junta, in his bid for the leadership role, she was told: "Why don't you just participate as an individual, as a citizen, as a member of the community adjacent to the *quebrada*? There's no need for your whole organization to get involved." Glayds would not be sidelined. Her questioning persisted until the group agreed that Don Orlando's Junta would be named on the paperwork, but all decisions would be made collectively and horizontally.

At the center of these negotiations was the *quebrada*. Due to its unconventional political geography—it conformed neither to an existing jurisdiction nor to an established institutional form—the *quebraba* disrupted customary forms of authority and reconfigured familiar territorial arrangements. Without ascribing autonomous, intentional agency to the nonhuman world, we can nevertheless say that the *quebrada* politicized people and place in new ways. Its ability to assemble a public was enhanced, of course, by the fact that money was involved. But there was an affective dimension to the action the *quebrada* inspired.

In some cities, like Medellín, *quebradas* are spaces of conflict and danger. Separating one neighborhood from another, they have often served as battlefields for warring

paramilitary groups or drug cartels. Clashes flare up, shootouts go down, and bodies are dumped there. People have learned to fear and avoid them. Bogotá's *quebradas* have never had quite the same stigma, but people still approach them with caution. They are believed to shelter drug addicts, thieves, the homeless, and others on the urban margins.

But as security in urban Colombia has improved, people in the hillside settlements abutting *quebradas* have begun to see these "no-go zones" in a different light. Feeling safe to traverse them again—albeit always accompanied and only during daylight hours—residents of the urban periphery have started imagining new relationships with the waterways bisecting their neighborhoods. They are also attuned to shifts in governmental priorities and the openings and opportunities that accompany them. And many have first-hand experience with *quebradas'* potential to overflow and cause damage if not properly maintained. As a result, Bogotá's *quebradas* are matters of concern around which a public has begun to assemble.

Although adaptation is actively reconfiguring the politics of the urban periphery, this is not a smooth, fast, or seamless process. After all, when concrete entitlements are at stake, metrological politics often involves contentious debates over who and what should be counted. The adaptive public is heterogeneous and fragmented. There are tensions between competing metrics—disputes over how, when, and where measurements should be done. On one survey, some participants fixated on recently built shacks perched on the edge of the ravine. They marked down the location of the shacks, noted that they were discharging sewage directly into the stream, and began to inquire about their occupants, who were identified as recent arrivals of modest means and unknown pedigrees. Implied was the need to relocate, or perhaps evict, them. A faction within the group objected on the grounds that they should be consulted, not displaced. Ultimately, these households were counted, but as part of the problem rather than as part of the political constituency empower to solve it. The politics of metrology can assemble a participatory, democratic public; it can also slide in the direction of illiberal, vigilante justice.

Early Warnings

Metrological citizenship was deepened during IDIGER workshops in which residents were trained to participate in the city's early warning systems. These workshops began with a conceptual discussion of the verb *prevenir*, which combines elements of anticipation, foresight, warning, and prevention. They quickly got technical, covering rainfall meters, stream flow gauges, river level sensors, and weather monitoring stations. The immediate objective was to educate neighborhood groups on the city's meteorological instruments, and how their measurements are communicated via text message. Using examples, the trainers focused on how to interpret these alerts, when to take them seriously, and how to warn others. The ultimate goal was to strengthen collective resilience by making those living alongside waterways integral to the function of the city's early warning system. At stake were issues of vulnerability and responsibility, both central to the formation of an adaptive public.

Álvaro, an IDIGER technician, instructed the group: "You have to learn how to read these alerts and know when they require serious action on your part…we're not going to tell you that." He gave an example: "You know that it's been raining heavily for the past few weeks and that the *quebradas* are filling up with garbage and rubble, so you can assume that there's a risk of flooding. It could be a quick, heavy rain (5 millimeters over 10 minutes) or a slow, light one (10 millimeters over 3 hours), but since you know the *quebrada*, you know both are potentially problematic." After this lesson in vulnerability, Álvaro moved to responsibility: "This is when you have to alert others in the community and start taking preventive measures. We're not always going to be able to come and save you. Every citizen of Bogotá has to do his part."

Like the practices of enumeration discussed above, these measurements belong to the domain of political metrology. Fluency in the technical idiom of early warning systems is necessary for establishing one's level of vulnerability and knowing how to act accordingly. These are membership criteria for belonging to the public assembled around climate change adaptation. When rights and responsibilities are predicated on such information, entitlements depend on proficiency in meteorological measurement and monitoring.

Equipped with such data and the ability to interpret it, residents are presumed by IDIGER to share the responsibility of preparing for or responding to emergencies. Incorporating people into the function of the early warning system recognized the importance of intuitive, non-calculative knowledge for the anticipation of threat and the management of infrastructure. But this also enables them to make demands on or wage critiques of the government, for the data can be used to hold authorities accountable for actual or potential climatic events. Metrological citizenship implies the ability to mobilize measurements in order to call for the construction or repair of infrastructure in preparation for the next storm. It involves pushing to be recognized as vulnerable in order to access the opportunities made available by adaptation.

Much of what we know about enumeration and urban politics comes from commentary on the benefits and dangers of "smart cities" in the global North (Kitchin 2014; Greenfield 2013). Intelligent technologies, infrastructures, and buildings are seen to require a population willing to relinquish ownership of sensitive personal information and to acquiesce to behaviors and values embedded with the design of the devices themselves. Individual privacy and freedom are opposed to government surveillance and corporate control. When city dwellers enter the equation, it is as "hackers" or "citizen scientists" independently collecting data to demand public or private accountability (Townsend 2015). These analyses sit in tension with the politics of metrology in Latin America, where urbanization and democratization have long depended on popular demands to be counted by the state. For inhabitants of the informal, self-built settlements of the urban periphery, political incorporation has been predicated on enumeration and measurement. By demanding inclusion in official surveys, maps, and plans, and eventually street addresses, bus routes, and land titles, they have fought to join the political community of the city.

In Bogotá, climate change adaptation is the most recent idiom in which claims to recognition-through-enumeration are being articulated. In the 1970s and 80s, inclusion was sought in terms of development, modernization, legalization, and formalization. In the 1990s and 2000s, imperatives such as security, sustainability, and disaster risk management took center stage. With the rise of climate change politics, struggles for urban citizenship now mobilize metrics associated with adaptation, vulnerability, and resilience.

Budgeting Adaptation

With trainings completed, inventories conducted, and agreements signed, the allocation of resources could begin. This is where the data collected during the surveys described above would begin to guide the distribution of funds for specific interventions. To this end, IDIGER organized participatory budgeting workshops in community meeting houses throughout neighborhoods adjacent to *quebradas*. One took place in a single-room storefront with a roll-up metal door. Since the interior space was too limited for the forty-odd attendees, plastic chairs spilled out onto the sidewalk.

Equipped with laptop and projector, two IDIGER representatives, Álvaro and Camila, introduced the exercise. A spreadsheet prepared specially for the workshop was beamed onto a blank white wall. The spreadsheet contained a column of key roles, such as "general coordinator" and "accountant," and one of sample interventions: pruning bushes, fixing

stream margins, extracting fallen trees, fixing plumbing leakages, and so on. Further down the list were cultural and educational activities, such as inauguration and closing celebrations, outreach events, and mural painting workdays. Álvaro explained: "The question is: Which risks do you want to invest in mitigating, and which are most likely to cause problems in the future?" He then encouraged the group by predicting that they would be more careful and effective with their intervention than a hired contractor. "This is why City Hall wants to work directly with you," he stressed. "If we start from your ideas, adaptation is more likely to succeed. The best way to reduce vulnerability is by building knowledge and then converting it into practice."

Guided by Álvaro, the group traversed the spreadsheet cell by cell. Consulting the inventories recorded during their surveys, they called out measurements of the amount of work needed in each category. Estimated costs for each line item were tallied automatically. As totals accumulated at the bottom of the spreadsheet, the exercise took on a more serious tone. Álvaro then unveiled the overall budget: "We have allocated 214,790,014 pesos (about $80,000) for this *quebrada*." The adaptive public assembled now had to decide on the specific interventions on which these funds would be spent.

But the group also had to agree who among them was going to be hired to perform the work. Tensions flared between those who spoke in the name of redistribution and those concerned about issues of accountability. Some argued that everyone present should get their fare share. A few expressed concern about the Junta leadership distributing funds in exchange for political loyalty. Others wanted assurances that the work would truly get done. Álvaro finally intervened: "There will be full transparency and zero corruption." Using a term that means to regulate, inspect, control, and supervise all at once, he said: "You can be sure that we are going to *fiscalizar*."

In the truck on the way back to IDIGER headquarters, Álvaro and Camila elaborated this point with candor. They told me that these initiatives, which are still in their infancy, will undoubtedly be barraged by allegations of populism, clientelism, and corruption. Camila foresaw members of the opposition demanding investigations by the Contraloría, Colombia's Government Accountability Office. But, Álvaro stressed, "there are just as many if not more thieves in private companies with government contracts than among the community. Better to put a small amount of resources in the hands of people whose lives are effected by the problem," he says, "than to put a large sum in the pockets of contractors who have no stake in it whatsoever." Regulating the process was necessary not only to ensure results, but also to buffer adaptation initiatives from the opposition's attempts to undo them.

Among those present, an irony was lost on no one: it was Petro himself, as Senator, who scrutinized and eventually uncovered extensive corruption in the city government. His predecessor, Samuel Moreno, was ultimately jailed for his illegal relationships and backroom deals with private contractors. By increasing public awareness of corruption, Petro was partly responsible for creating the climate of suspicion that now surrounded his administration. This adds another dimension to the politics of vulnerability in Bogotá. Petro's adaptation initiatives are organized around the imperative to protect vulnerable lives, but are themselves vulnerable to being overturned by his political opponents.

An Uncertain Future

Bogotá is clearly the site of an innovative climate change adaptation agenda. But that agenda faces serious challenges as it moves forward. The vision for the future of Bogotá expressed by Petro's administration foregrounds adaptation within nearly all sectors of urban governance, planning, and development: from densification of the city center and alternative transportation networks to social housing schemes and water management systems. It does so

not only to prepare the city for a future of ecological uncertainty, but also to transform the institutional structures that will lead to a more resilient Bogotá. As Daniel, a top-level IDIGER coordinator, explained, "resilience" for Petro is "a new paradigm of governance that strengthens public instructions, reduces the influence of the private sector, and challenges the tyranny of the market." This upends academic critiques that treat resilience and neoliberalism as homologous (Walker and Cooper 2011). Here the logic is reversed: resilience is used to confront neoliberalism and the paradigm of market order on which it rests.[16] Whether Petro succeeds is another matter. What's significant is that, in Bogotá, resilience is linked to a broad program of social inclusion that seeks to bring essential urban services under public management and to redistribute resources to the urban poor (cf. Ferguson 2010). This is not to say that adaptation is simply a means to a different end—a social agenda in an ecological disguise—but that we must pay attention to what it comes to mean and do at specific conjunctures. Indeed, adaptation can be harnessed to a program of socio-environmental change that refuses such dichotomies altogether.

What this emerging politics of climate change will ultimately mean for Bogotá depends on whether the broader political program underpinning it will have longevity. The adaptation initiatives discussed above may be ephemeral if Petro's administration is blocked from implementing its revised master plan or its ability to govern is further compromised by legal battles in the courts and political skirmishes with the City Council. Would it all disappear into thin air if Petro were to be permanently removed from office or to lose the next election? The political future of these adaptation initiatives is as uncertain as the ecological future they confront.

However, the fact that the politics of disaster risk management of the 1990s and 2000s enjoyed relative stability under a handful of different mayors, even some with quite different approaches to governing the city, suggests that something similar could be expected here. This seems all the more likely if we consider the historical conjuncture in which the politics of adaptation has taken root in Bogotá. Whether in the hands of Petro or a successor, climate change will remain a strategic way of governing the urban poor and building a political constituency that responds both to international pressures and priorities and to the politics of security on a national level.

Even if these adaptation initiatives are soon disavowed or discarded, they nevertheless offer an important lesson about contemporary climate politics. In recent years, philosophers and social theorists have declared the arrival of two new periods: the "post-political" and the "anthropocene." Some have argued that they are interconnected, and that climate change is one of the key domains in which the post-political condition is produced and sustained (Swyngedouw 2010). It is easy to find evidence to support this argument. However, we must not foreclose the possibility that another climate politics is possible—one that identifies strategies for radically reconfiguring the unequal social and economic relations underpinning the ecological crisis confronting the present.[17]

The politics of adaptation in Bogotá has such potential. There are currents of thought within it that seek to respond to the dire consequences of climate change with ambitious and transformative strategies of social transformation, for example: reducing entrenched marginality and widespread economic inequality, strengthening social infrastructure and collective resilience among vulnerable communities, opening spaces of political debate and participation for previously excluded sectors of society, making vital infrastructures work in the interest of people rather than profit, and promoting democratic values of transparency, justice, and accountability. While powerful forces seek to derail these initiatives, what is perhaps more difficult to suppress is the potential for the adaptation agenda in Bogotá to stimulate progressive climate politics elsewhere.

Figure 1: A *quebrada* cutting through a hillside on Bogotá's southern periphery. Photograph by author, 2013.

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[1] The Plan de Ordenamiento Territorial (POT) is the set of rules and regulations that determines much of what can and cannot be done within the municipal boundaries. At least in theory, the POT designates areas in which the city can expand, identifies zones to be protected, dictates the relationship between the city and the surrounding region, controls the use of land by different sectors, and establishes guidelines for public transportation, parks, utilities, schools, and hospitals.

[2] Eduardo Behrentz, "Concejo debe hundir el POT," *El Tiempo*, May 28, 2013.

[3] For a review of climate change adaptation and mitigation policies before Petro took office, see Lampis (2013a).

[4] Gustavo Petro, Address at the Bogotá Summit on "Cities and Climate Change," November 2012.

[5] Over a twenty-month period from August 2008 to April 2010, I conducted both ethnographic and archival research in Bogotá on the politics of security and the government of risk. My specific focus was the field of disaster risk management; in particular, a municipal government program working to relocate households from what in the early 2000s had been designated *zonas de alto riesgo*, or "zones of high risk." I returned for follow-up visits of between one and two months in January 2012, December 2013, and August 2014. My objective during these visits was to understand how techniques of disaster risk management had since merged with the imperative of climate change adaptation. All informants' names have been changed to protect their anonymity.

[6] Further elaboration on the concept of "endangerment" and on the relationship between histories of security in Colombia and contemporary urban politics and government in Bogotá can be found in my book, *Endangered City: The Politics of Security and Risk in Bogotá* (forthcoming, Duke University Press).

[7] There is academic and political debate in Colombia over the right definition and measurement of "vulnerability" (see Lampis 2013b for a review of these debates in the context of climate change adaptation).

[8] It is important to note that, before Petro took office, climate change policy on the national and municipal levels was focused almost exclusively on mitigation (Lampis 2013a).

[9] Scientific consensus around the irreversibility of climate change is one reason governments cite for emphasizing adaptation over mitigation. Another is the moral argument that mitigation should be the responsibility of the largest contributors to greenhouse gas emissions. Economic justifications also support the decision to spend limited resources on initiatives that will save lives or prevent disasters at home rather than those that will help the planet as a whole. The political expediency of adaptation over mitigation is always an important factor. For a broader review of these issues, see Wamsler (2014).

[10] Various mitigation goals have also been announced recently, such as the progressive reduction of carbon emissions by 2020, 2038, and 2050 and the intention to increase the amount of the city's energy supply from alternative sources to 25 percent over the next 35 years. "Bogotá fija metas para reducir 20% de emisiones de carbono, al 2020," *El Tiempo*, March 25, 2013.

[11] There is not space here to comment on the distinction between "risk" and "uncertainty" or on the claim that there has been a global shift from the former to the latter in the domain of urban and environmental governance. These are topics I have analyzed extensively elsewhere.

[12] "Se instaló e inauguró cumbre Río+20 en Bogotá," *Caracol Radio*, August 10, 2014.

[13] Bruce Braun and Sarah Whatmore note that science studies scholars could benefit from greater precision in their political analyses: "citizenship, democracy, representation, and politics are constantly invoked in [the STS] literature," they argue, "[yet] it is not always clear to what these terms refer, which traditions in political theory inform them, or where these traditions might need revision" (2010:xiv). Noortje Marres's (2012) work is an example of recent attempts to deepen the exchange between STS and political theory by inquiring further into the role of materiality in politics and democracy.

[14] *Quebradas* are essentially "ravines," but due to Bogotá's rainfall patterns they are rarely (if ever) dry. Since the local usage of the term implies a waterbody as much as a landform, I will mostly retain the Spanish name.

[15] Recent work in science and technology studies is helpful for understanding such processes. In the introduction to a particularly generative set of articles, Marres and Lezaun outline an approach to the study of politics that "queries how objects, devices, settings and materials, not just subjects, acquire explicit political capacities, capacities that are themselves the object of public struggle and contestation, and serve to enact distinctive ideals of citizenship and participation" (2011:491).

[16] A similar point has been made by Stephen J. Collier and Andrew Lakoff (2014) in their genealogy of "vital systems security." They, too, suggest an alternative view of the emergence of "resilience" and its political implications relative to neoliberalism.

[17] Matthew Gandy has observed that the "politics of inevitability" associated with the rise of neoliberalism today looks less predetermined: "A more polarized landscape is emerging in which some cities have successfully won control back from underperforming private-sector providers and even developed new models of public participation in technological politics" (2014:16).