The Problem and Promise of Coproduction:

Politics, History, and Autonomy

Abstract

Interest in coproduction has continued to grow since Elinor Ostrom introduced the concept to the development scholarship two decades ago. The idea that multiple actors often interact to coproduce public goods and services helped shift development thinking away from one-size-fits-all policy prescriptions based on free market principles to a more nuanced position that recognizes organizational and institutional diversity. However, while Ostrom's concept of coproduction provides a useful starting point to think about how states and societies interact to deliver public goods and services, it fails to capture the complexity and significance of the process. The diverse scholarship that has extended and critiqued her work has provided a fuller picture. Yet, important gaps remain. The principal aim of this article is to fill some of these gaps and expand the boundaries of coproduction research and analysis. Drawing on qualitative research on water services and management in Ecuador, it focuses on two interrelated issues that are overlooked or underdeveloped in the existing literature. The first relates to the history of coproduction. The article shows that coproduction is more deeply rooted in capitalist development than commonly believed, and historical events have a significant bearing on contemporary politics. The second concerns autonomy. The essay shows that coproduction simultaneously promotes engagement with and autonomy from the state, and that this tension generates political struggle and change. More broadly, the article casts fresh light on the politics of public goods and services in the Global South, especially on the political impact of collective social participation in the process.

Keywords: coproduction; autonomy; water; public services; Latin America; Ecuador

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1. Introduction

Two decades after Ostrom (1996) introduced coproduction to the development lexicon, interest in the concept and practice continues to grow. The simple idea that she posited – multiple actors often interact to coproduce public goods and services – challenged binary thinking about development and highlighted organizational and institutional diversity. This helped shift development thinking away from market fundamentalism to a more nuanced position that recognizes alternative ways of delivering public goods and services and the active role citizens perform in this process. Yet, her concept is vague and incomplete and fails to capture the complexity and significance of the process. Joshi and Moore (2004) address some of these shortfalls and provide a stronger conceptual framework to analyze coproduction. However, following Ostrom, they pay little attention to the political struggles and opportunities that emerge through the process. Mitlin (2008) was one of the first development scholars to move decisively in this direction, claiming coproduction can provide a platform for organized citizens to extend their social and political rights. Viewed from this angle, coproduction becomes a site of political struggle and opportunity rather than a technical process of public service delivery. More recent contributions have continued in this vein, providing further insight into the politics of coproduction (e.g. McMillan et al, 2014; Fieuw & Mitlin, 2018; Mitlin & Bartlett, 2018).

Over the last two decades, then, coproduction analysis has expanded to capture crucial dimensions missed in earlier studies. This has provided a clearer picture of how public goods and services are delivered in the Global South and the political struggles that revolve around them. Yet, while this has added depth and richness to coproduction analysis, important elements have been overlooked or underexplored. The main aim of this article is to highlight some of these missing dimensions and provide fresh insight into the politics of public goods and services in the Global South.

I will argue that two interrelated issues demand greater conceptual and practical attention. The first concerns the history of coproduction. Existing literature focuses on the coproduction of public goods and services during neoliberal capitalism. Hence, coproduction is typically associated with the reduction of public spending and state regulation. However, the process has long historical roots and has been evident across various phases of capitalist development, including periods of state retrenchment and expansion. I will argue that unearthing the history of coproduction is crucial for understanding contemporary processes and politics. The second area relates to the tensions that emerge around the autonomy of social organizations involved in coproduction. By actively engaging organized groups of citizens in the delivery of public goods and services, coproduction simultaneously promotes autonomy from and engagement with the state. While this can give organized sectors of society greater political power and create new political opportunities, it can also generate tensions as struggles emerge over the reach and authority of the state.

To demonstrate the salience of these issues, I will draw on qualitative empirical research on water services and management in Ecuador. The country provides fascinating terrain to investigate coproduction for several reasons. First, the country's constitutional and legal framework, which has been rewritten over the last decade, entrusts the management of water to the state and community and promotes the delivery of water services through public-community alliances. Hence, coproduction now has a strong constitutional and legal foundation. Second, the construction of a new water regime based on this constitutional and legal framework involved intense political struggle between the government, social movements and water associations. Thus, the politics of coproduction come to the fore, revealing important dimensions that are overlooked or underexplored in the existing scholarship. Third, this political struggle was primarily linked to the expansion rather than the retreat of the state. The case therefore illustrates the existence of coproduction outside the context of structural

adjustment and neoliberal reform. Indeed, the article shows that coproduction is deeply rooted in Ecuador's history, becoming increasingly common from the 1960s.

In the next section, I survey the existing scholarship on the coproduction of public goods and services in the Global South, focusing on scholars who take the organizations involved in the process as their main unit of analysis. I then turn to water coproduction in Ecuador, using the case to highlight issues connected to history and autonomy and offer new conceptual insights. I conclude by summarizing the main findings of the article and identifying future avenues of research and analysis.

2. Coproduction: origins, evolution and critique

Coproduction analysis has a long and convoluted history. Initial ideas emerged from collaborative research conducted in the 1970s on public policy in the United States (e.g. Ostrom, 1971, Ostrom, 1972). Researchers working in this group, including Vincent and Elinor Ostrom, showed that public goods and services were often delivered - or 'produced' - through complex interactions between multiple actors and organizations. Their findings challenged the prevailing orthodoxy which advocated public service provisioning through powerful centralized state bureaucracies. Their research was also at odds with orthodox public choice and neoclassical theorists who tended to favor pure market solutions. Early coproduction analysis therefore attempted to chart a course between the state and the market and stressed organizational and institutional plurality.

Since the 1970s, coproduction has branched out and the term has been employed in various contexts. Three main strands of coproduction analysis have emerged. The first relates to the coproduction of public goods and services (e.g. Joshi & Moore, 2004); the second concerns the coproduction of knowledge and social order (e.g. Jasanoff, 2004); and, the third relates to environmental governance and science (e.g. Wyborn, 2015). While these approaches are

distinct, they share at least one important feature: the desire to transcend binary categorizations and thinking.[1]

In this article, I focus on the first approach - the coproduction of public goods and services - which scholars have used to investigate a range of issues, including housing, water, sanitation, security and recycling. Below, I will critically review this diverse body of literature, focusing on scholars who analyze coproduction in the Global South and who take the organizations involved in the process as their main unit of analysis. Hence, I will make no attempt to synthesize alternative approaches to coproduction or provide a comprehensive review of the coproduction scholarship. My principal aims are to provide fresh critical insight into the coproduction of public goods and services literature and explain the conceptual and analytical gaps I seek to fill through the discussion of water coproduction in Ecuador.

The section will start by critically evaluating the influential conceptual approach to coproduction put forward by Ostrom (1996), before going on to discuss more recent studies, which develop and critique her work. I will identify two broad and overlapping strands of analysis: one that treats coproduction as a largely technical process of public service delivery and another that primarily characterizes it as a political process which generates political struggles and opportunities. I will argue that both branches of coproduction analysis offer valuable insights, but politics must be squarely integrated into the analysis.

2.1. Coproduction as technical process

Ostrom (1996) introduced coproduction to the development scholarship in a landmark special issue of *World Development* which aimed to transcend classic state-market public-private

[1] See Miller and Wyborn (2018) for a recent attempt to synthesise these three approaches. While their article provides new insight into coproduction analysis, it focuses on technical approaches to the coproduction of public goods and services, and therefore overlooks the political coproduction literature discussed in this article.

binaries and illustrate the importance of understanding how states and societies interact in the process of capitalist development.[2] In her article, she offers a definition of coproduction - 'process through which inputs used to produce a good or service are contributed by individuals who are not "in" the same organization' (1996: 1073) – which is simultaneously vague and revealing. Its vagueness suggests coproduction can include a plethora of actors, goods and services and a panoply of organizational and institutional arrangements. The focus Ostrom places on public agencies in her article and elsewhere suggests the state is directly involved. However, her definition leaves the door open to non-state actors coproducing goods and services without state involvement. It also reveals two important features of coproduction. First, it is a process and therefore involves dynamic interactions over time rather than discrete one-off events. Second, it requires inputs or contributions from at least two different sets of actors and thus creates new relations between individuals and organizations. Her conceptual framework also stresses citizen participation and human agency. Coproduction, she argues, 'implies that citizens can play an active role in producing public goods and services of consequence to them' (1996: 1073).

Ostrom employs orthodox microeconomic analysis to determine the degree of citizen participation, suggesting it will vary according to budget constraints, wage rates and opportunity costs. Coproduction opportunities exist when inputs from public officials and citizens are complementary rather than substitutable. Various combinations can produce the same level of output. The precise combination will depend on the budget constraint and the relationship between the wage rates of public officials and opportunity costs of citizens. Thus, Ostrom uses economic efficiency as grounds to gauge the potential for coproduction and the mix of inputs provided by public officials and citizens. She recognizes other dimensions of the process. For instance, the challenge of generating trust between bureaucrats and politicians and

[2] See Forsyth and Johnson (2014) for insightful reflections on Ostrom's work and legacy.

the need to create the right incentives for actors to participate and perform. She also recognizes that coproduction is not free of conflict or power imbalances (Miller & Wyborn, 2018). Still, Ostrom primarily conceptualizes coproduction as a technical process where the principal objective is to achieve the maximum output given a particular budget constraint.

Most scholars who have undertaken coproduction research and analysis follow this largely technical approach. However, within this group, alternative perspectives have emerged. One of the most influential contributions, especially in the development scholarship, comes from Joshi and Moore (2004). Criticizing the vagueness of Ostrom's formulation, the authors posit 'institutionalized coproduction' in its place. From this perspective, coproduction is understood as 'the provision of public services (broadly defined, to include regulation) through regular, long-term relationships between state agencies and organized groups of citizens, where both make substantial resource contributions' (2004: 40).

Their conceptual framework diverges from Ostrom's in four important respects. First, greater emphasis is placed on political and social organization, which shifts analytical attention away from relations between public officials and individual citizens towards interactions between state agencies and social organizations. Hence, the main unit of analysis moves from the individual to the collective.[3] Second, coproduction is limited to state-society interactions, which ensures the concept is not used to capture virtually any public service delivery process which involves more than one group of individuals. For example, using coproduction to explore interactions between businesses and citizens is precluded, which is important because the term

[3] Here, Joshi and Moore (2004) depart from the public administration literature which generally, though not universally, follows Ostrom and adopts a methodologically individualistic approach to coproduction analysis. For reflections on coproduction from a public administration perspective, see, for example, Brandsen and Pestoff (2006), Brandsen and Honingh (2015), and Loeffler and Bovaird (2016).

has been used to capture highly exploitative relationships between the two groups.[4] Third, more weight is given to the long-term character of coproduction and its durability as a mechanism of public service delivery. Fourth, the basis for social participation in coproduction is not explicitly limited to economic criteria, which opens the door to organized groups of citizens participating for reasons that transcend economic rationality.

Joshi and Moore also offer more insight into the forces behind coproduction, tentatively proposing two drivers: 'governance' and 'logistical' (2004: 41). The first relates to declines in government capacity at the national or local level. Coproduction emerges as a practical solution to the inability of states to continue to provide adequate public service provisioning. The second concerns the logistical challenges states face in providing public services, especially in rural areas. Collaboration between the state and society is required when significant geographic or demographic obstacles block public service delivery. While insightful, these drivers highlight a tension in this reading of coproduction. On the one hand, both drivers indicate state 'imperfections' or 'incompleteness', which suggests coproduction is unnecessary where states are strong and effective. On the other, coproduction is conceptualized as a long-term, institutionalized process, which suggests it will not fade away as states develop capacity. The next section will shed light on this tension through the analysis of water coproduction in Ecuador.

[4] Where, for example, 'poor people find themselves volunteering to shovel ditches to shore up the profits of multinational water companies' (McMillan et al, 2014: 203). More generally, excluding interactions between citizens and businesses prevents coproduction being conflated with corporate initiatives, like 'bottom of pyramid' or 'corporate social responsibility'. This does not imply, however, that the private sector is totally absent from coproduction. Stage agencies, local governments and development organizations frequently contract private firms to undertake work connected to the coproduction of public goods and services.

Further insights emerge through the empirical cases discussed by Joshi and Moore (2004: 34-43). The first discussed here concerns the coproduction of security in Karachi, Pakistan. The initiative was driven by local economic elites who collaborated with the police and government to monitor and tackle escalating crime and disorder in the city. The case reveals an important point that is largely overlooked in the existing literature in the Global South: coproduction stretches across social classes. The process is often seen as a way of bringing public goods and services to the poor. Indeed, it has been widely criticized on these grounds, for it demands that the poor organize to secure public goods and services, while the middle classes and elites gain access without participating directly in delivery. From this perspective, coproduction emerges as a 'second best' solution which exploits poor and informal communities and undermines notions of universal citizenship (Adams & Boateng, 2018; Cross, 2016; McMillan et al, 2014; Meagher, 2013; Mitlin & Bartlett, 2018). While these criticisms undoubtedly have foundation, the Karachi case shows that coproduction is not limited to collaborations between the state and the poor. Other social classes and groups participate which indicates its ubiquity in the Global South.

The second relates to the coproduction of irrigation.[5] Several important findings are reported. The first concerns the discretion and authority of the social organizations involved in coproduction. Better performance is observed when farmers have some control over the delivery of irrigation at the local level. Viewed through the lens I employ in this article, this suggests the autonomy of farmer irrigation organizations positively influences the outcomes of coproduction. The influence farmer organizations exert over the state also impacts performance. Improved outcomes are observed when farmers have institutional channels to influence policies and bureaucracies. Personal relations between farmers and bureaucrats are

[5] See also Lam (1996) and Perrault et al (2001).

also influential, with greater proximity between the two groups fostering trust and generating positive results. This supports Evans (1996) who claims coproduction requires 'embeddedness' to function properly. More precisely, he argues that 'complementarity creates a basis for productive interaction, but without embeddedness the potential for mutual gain is hard to realize' (1996: 1123).[6] Direct participation of politicians and bureaucrats is required to build trust and develop enduring relationships.

Evidence of this is reported elsewhere in the literature. For example, Navarrete-Hernandez and Navarrete-Hernandez (2018) claim that trust between state and social actors is a key factor that explains the high performance of the coproduction of waste collection and recycling in Santiago, Chile. Taking cooperatives as their main unit of analysis, the authors contend that coproduction is the most effective arrangement in terms of economic efficiency, poverty reduction, income inequality, and environmental protection (2018: 299-308). They conclude that 'predictions drawn from co-production theory have provided the most accurate theoretical framework for understanding the impact of municipal policies' (2018: 309).[7] More broadly, their findings show the merit of local governments and state agencies working with informal organizations rather than attempting to replace them with formal public or private organizations (Miraftab, 2004; Fahmi, 2005; Meagher, 2013).

2.2. Coproduction as political process

While the diverse of group of scholars who view coproduction as a largely technical exercise offer important insights, politics are largely absent from their analysis. Mitlin (2008) was one of the first scholars to recognize the political implications and potential of coproduction. She

[6] Embeddedness, for decades a core concept in economic sociology, has recently filtered into public administration and political science. See, for example, Pepinsky et al (2017).

[7] See also McGranahan (2014), Adams and Boateng (2018), Mangai and De Vries (2018) and Mitlin and Bartlett (2018).

claims that poor citizens not only use coproduction as a mechanism to gain access to public services but to renegotiate their relationship with the state and strengthen their social and political rights. Coproduction therefore has the potential to challenge and reconfigure power relations. She stresses the role social organizations perform in coproduction. Indeed, she argues that the cases of urban coproduction she analyzes prospered despite not because of the state (2008: 355).[8]

Yet, as Mitlin explains, the poor navigate tricky political terrain when participating in coproduction. She claims that the cases she explores are examples of 'self-organized co-production', as grassroots organizations engage with the state while maintaining a relatively high degree of autonomy over the delivery process (2008: 352). Crucially, their objective is not to build local services before handing them over to the state to manage, but to retain control over the long term. Hence, coproduction creates enduring ties between the state and society and establishes new relations of authority and autonomy. More broadly, Mitlin highlights a crucial point: coproduction not only produces public goods and services but new political subjects, relations, and institutions.

Further evidence of this comes from urban water committees – *mesas técnicas de agua* (MTAs) - in Caracas, Venezuela (McMillan et al, 2014). The authors stress the need to transcend the public-private binary and argue unorthodox solutions are often required to extend water and sanitation to poor and marginalized communities (Bakker, 2010). Taking aim at the technical strand of coproduction scholarship, they stress the emancipatory and radical potential of the process, arguing that collective participation 'creates the possibility of empowerment, because the committees engage citizens in a wider process of social change and promote a radical rethinking of the concept of citizenship' (2014: 202).

[8] See also Mitlin and Muller (2007), Fieuw and Mitlin (2018) and Mitlin and Bartlett (2018).

Integrating water committees into a wider political project was a vital part of this process in Venezuela. From the late 1990s, Hugo Chavez directed a process of radical political change that included creating new forms of political participation (Gott, 2005; Gabbert & Martinez, 2018). The MTAs, which predated his ascent to power but became more prevalent and powerful during his presidency, were part of a wider effort to increase space for local political participation and transcend liberal democratic institutions (McCarthy, 2012; Wilde, 2017). Under Chavez, the relationship between the MTAs and the national water company was transformed through the creation of a communal management model, while public investment in water infrastructure and management was significantly increased (2014: 205-7). The state also increased investment and participation in other community projects which created opportunities for coproduction in other spheres (McCarthy, 2012).

Collaboration between water bureaucrats and water associations provided opportunities for the exchange of knowledge to help improve water services in poor communities (McMillan et al, 2014). Residents mobilized to collect data on water provisioning and develop plans to improve coverage. McMillan et al argue that in addition to forcing state authorities to recognize informal settlements, the process also helped build 'the collective memory of the community and its history' (2014: 208). Meanwhile, the creation of a community water council provided a forum for members of water associations to discuss water provisioning with members of the public water company, creating a formal channel for the exchange of information, visions and plans.

Coproduction's potential to create new knowledge and reconfigure state-society relations is noted elsewhere in the literature (Banana et al, 2015; Llano-Arias, 2015; Miller & Wyborn, 2018; Mitlin & Bartlett, 2018). For example, Banana et al (2015), who also highlight the empowering potential of coproduction, stress the importance of knowledge exchange in the coproduction of sanitation in urban slums in Chinhoyi, Zimbabwe. The authors explain how

local residents were trained to collect data and map sanitation services and how mechanisms were created to allow the various actors involved in coproduction to understand local perceptions of sanitation problems (2015: 41-3). While these sorts of initiatives clearly have the potential to exploit the poor and create new mechanisms of social control, in this case, the exchange of knowledge and the collective involvement of residents seemingly enabled poor communities to renegotiate their relationship with the state and improve sanitation provisioning.

Thus, these studies show that strong ties between state and social actors can generate positive coproduction outcomes, echoing Evans (1996) and Joshi and Moore (2004). However, they also indicate the challenges of building and sustaining constructive relationships. Two crucial issues emerge from the case of water coproduction in Venezuela (McMillan et al, 2014). First, closer engagement with the state came with increased bureaucratization which reduced space for creativity and threatened the autonomy of water committees. Second, close association with a radical political project risked the long-term viability of coproduction. For instance, members of the water committees expressed concern over the future of the organizations if the right-wing opposition took power. By developing strong ties with political parties, community organizations also run the risk of being integrated into the political party machinery and losing control of decision-making at the local level (McCarthy, 2012). Thus, the Venezuelan case points toward some of the tensions highlighted by Mitlin (2008), especially the challenge that grassroots organizations and social movements face in increasing engagement with the state while protecting their autonomy.

To sum up, coproduction research and analysis has proliferated since Ostrom (1996) first introduced the concept to the development scholarship. Her insights provide a useful starting point to think about how states and societies interact to deliver public goods and services. However, her definition of coproduction is vague, and her analysis is focused on service

delivery. Moreover, she suggests coproduction is based on individual exchanges between rational economic actors, which masks the complexity and diversity of the process. While Joshi and Moore (2004) also follow a largely technical approach to coproduction, they provide a more useful conceptual framework. Their formulation limits coproduction to interactions between state and society, which precludes business-citizen interactions, and shifts analytical attention to the organizations involved in the process. The strong emphasis that it places on the contributions of the various actors involved in coproduction is also important. Their formulation therefore offers a useful overarching framework to explore coproduction. I will analyze water coproduction in Ecuador from this broad conceptual perspective while drawing and building on insights from Mitlin (2008) and other scholars who have emphasized the politics of coproduction. Hence, while I take inspiration from the original insights of Ostrom (1996), I follow an alternative approach which eschews orthodox economics and rational choice, and stresses collective over individual involvement in coproduction. This approach does not ignore individual actors but places the accent on collective organization, identity and struggle, and stresses the history and politics of coproduction.

3. Data and methods

The case of water coproduction discussed in the next section draws on qualitative research I have undertaken in Ecuador since 2015, connecting to preliminary investigations conducted in 2010 and 2011. I have completed five separate fieldwork trips since 2015, spending a total of eight months in Ecuador.

The overarching aims of this research are twofold. First, determine the roots of the political struggle over the construction of a new water regime in Ecuador during the presidency of Rafael Correa and explain its wider meaning and significance. Second, gauge the economic, social and political potential of the new regime, especially its capacity to strengthen community water management and distribute water equitably and sustainably.

Water coproduction is an important strand of this research and the coproduction literature has informed my research and analysis. Following a contextual conceptual approach, I designed the research to probe how communities, social movements, local governments, state agencies, public water companies and non-governmental organizations interact around water, placing particularly emphasis on water services and management. The bulk of this research was undertaken in the rural highland region, where coproduction is strongest. However, to gain a broader perspective, I also visited water systems, local governments and non-governmental organizations in the coastal region.

Rural water associations are the main unit of my analysis, including organizations that manage drinking and irrigation water. Small-scale agriculture is the main economic activity for most members; however, most households generate additional income through off farm activities, including employment in towns and cities. Hence, rural water associations are intimately connected to the urban economy. The social composition of most associations is heterogenous, including individuals and families from different social classes, ethnic groups and communities.

To obtain a broad panorama of water association activities, relations and histories, I conducted semi-structured interviews and extended discussions with representatives of 17 organizations in seven highland and two coastal provinces. I selected associations to ensure variation in size and sophistication, with the smallest having a few hundred members and the largest over 10,000. The interviews and discussions explored several themes: i) the history, structure and activities of water associations; ii) the distribution, management and meaning of water; iii) the construction and maintenance of hydraulic infrastructure; iv) relations with social movements, local governments, state agencies and non-governmental organizations; and, v) the new water regime and the struggle over its construction and implementation. I conducted

follow-up interviews with four water associations, which enabled me to track changes over time.

I gained further insight through informal meetings with representatives of water associations in public meetings in the central highland provinces, Tungurahua and Chimborazo, and through community water assembly meetings in the southern highland provinces, Azuay and Cañar. I also interviewed two local representatives of Roscgae, a national network of potable community water organizations, in the southern highlands. Interviews with representatives of indigenous and peasant movements provided additional insight into water associations and water politics. I interviewed leaders of the largest indigenous and peasant movements in Ecuador – Conaie, Ecuarunari and Fenocin – and representatives of local indigenous organizations in Cañar, Pichincha and Imbabura. Meetings with non-governmental organizations cast additional light. Extended discussions with the national representative of the *Foro de los Recursos Hidricos* in Quito and local representatives of *Central Ecuatoriana de Servicios Agricolas* in Cotopaxi and Chimborazo were particularly illuminating.

To gain insight into state perspectives, I interviewed local government officials involved in potable water services in Carchi, Chimborazo and Guayas, representatives of state water bureaucracies in Pichincha and Azuay, and a representative of the public water utility in the highland city Cuenca. Further, I interviewed two legislators involved in the drafting of new water legislation, one from the ruling party, Alianza Pais, and one from the opposition indigenous party, Pachakutik.

In total, I conducted 58 semi-structured interviews and extended discussions, all of which were undertaken in Spanish. Important additional insights were gleaned from multiple informal discussions with local water users in the highland and coastal regions, and through informal meetings with researchers, academics and activists in Ecuador.

To understand the legal foundations of coproduction, I collated historical water legislation from the 1930s and legislative and legal documentation related to the new water regime, which commenced in 2009. I drew on these sources to understand the relationship between water legislation and water coproduction and the political struggles over the new water regime. These materials were all sourced from the National Assembly in Quito.

Newspaper archives enabled me to piece together the history of water coproduction and gain further insight into contemporary processes and struggles.[9] Reading newspapers also helped me contextualize water events and establish connections with wider social, political and economic changes. My primary source was the daily newspaper, *El Comercio*, which offers national news coverage but places greater emphasis on the highlands, and therefore complements the geographic focus of my research. I consulted various editions between 1955 and 2010. The local newspaper, *El Espectador*, provided additional insights, especially in the central highland province, Chimborazo. I read multiple editions between 1972 and 1989. To follow the first and most important wave of protests against the new water law, I read various editions of the national daily newspaper, *Hoy*, between August 2009 and June 2010. Information derived from a close reading of this newspaper complemented the data I extracted from *El Comercio* during the same period. I consulted these materials at municipal library archives in Riobamba and Quito. In addition, I also consulted online coverage of water issues in *El Comercio*, *El Universo*, *El Mercurio* and *El Telégrafo* from 2010 onwards.

I selected 1955 as the start point for this archival research as the water literature, historical accounts, and interviews indicate water coproduction started to become increasingly commonplace and institutionalized in the 1960s (the historical context and literature are discussed in the next section). By looking at press coverage in the 1950s, I was able to identify

[9] See Benavides (2004) for important critical reflections on the Ecuadorian printed media.

continuities and ruptures in the 1960s. The rationale for selecting particular editions from 1955 was based largely on the timing of important water events, such as legislative debates in the early 1970s and late 2000s, although I also selected some editions at random. The *El Espectador* archive was only available for certain years which restricted my choice.

In addition to these three main sources (interviews and discussions, legal documentation and newspaper archives), I collated documents and audiovisual materials published by local governments, state agencies, non-governmental organizations and water associations. These sources provided useful additional information about water coproduction, including details about water distribution, management and infrastructure. The extensive secondary literature on water management and services in Ecuador provided further insights, particularly on local cases and histories.

Excerpts of interviews, newspaper articles and legal documents reproduced in this article are my own translations from Spanish.

4. Coproducing water in Ecuador: strains, tensions, and possibilities

Water associations perform a crucial role in managing and distributing water in Ecuador. They are estimated to supply drinking water and sanitation to over 30 percent of the population – or over 4.5 million people (FRH, 2013). Meanwhile, over 80 percent of farmers with access to irrigation are estimated to secure water through water associations (FRH, 2011). Past and present members of water associations have performed a lead role in developing and sustaining potable and irrigation water systems. Yet, the state and other actors have also made important contributions. Thus, water is coproduced in Ecuador, with several organized actors providing contributions over the long run.

In this section, I will not seek to provide a detailed account of this process, including a discussion of the considerable variation at the local level and a detailed analysis of the legal and bureaucratic framework. Rather, I will draw out broad patterns from the case to highlight

important issues that are underdeveloped or overlooked in the existing coproduction literature. The section will focus on two interrelated dimensions: i) history and ii) autonomy.

4.1. History

While the intellectual roots of coproduction stretch back to the early 1970s, the concept has been mainly used to analyze public good and service provisioning during the neoliberal phase of capitalism. Hence, the historical roots of coproduction have been largely overlooked. This is problematic because coproduction is generally portrayed as a response to government cutbacks in the 1980s and 1990s when it is actually a more fundamental feature of capitalist development in the Global South. I will demonstrate this below by tracing the history of water coproduction in Ecuador, showing that it was well underway before structural adjustment and neoliberal reform reduced the state's capacity to deliver water services in the 1980s and 1990s. Failing to pay attention to the history of coproduction is also problematic because historical factors have a considerable bearing on contemporary processes and politics. I will illustrate this below by showing that today water coproduction is effectively enshrined in the constitution and law in Ecuador, reflecting a historical process that started to accelerate in the 1960s and 1970s. I will build on this analysis in the next section by discussing the political struggle over the construction and implementation of the new water regime in Ecuador, a struggle that is deeply connected to the historical evolution of water coproduction.

While isolated cases of water coproduction occurred earlier in the twentieth century, the process started to accelerate in the 1960s and 1970s as military and civilian governments introduced a series of reforms which promoted state-society interactions around water (Korovkin, 2001; Armijos, 2012; FRH, 2013; Hoogesteger, 2015; Boelens et al, 2015).[10] In

[10] For earlier glimpses of water coproduction in Ecuador, see, for example, 'Se proyecta construcción de canal de riego utilizando aguas de rios Pilzhum y Dudas', April 11 1955, *El Comercio*, p. 2, 'Un proyecto piloto de

1965, the *Instituto Ecuatoriano de Obras Sanitarias* was formed to deliver potable water and sanitation to rural and urban communities, replacing the *Servicio Cooperativo Interamericano de Salud Publica*, which was established in the 1940s and part funded by the United States government. The *Instituto Ecuatoriano de Recursos Hídráulicos* was then established in 1966 to regulate water on a national scale. The creation of these two agencies established a platform for greater state involvement in water management and services. Meanwhile, public investment in water infrastructure and services accelerated as tax reforms, overseas loans, and oil revenues boosted the state's fiscal capacity (Conaghan, 1988; Armijos, 2012). Modern potable water systems were constructed or extended in towns and cities and public investment was increased in drinking and irrigation systems in the countryside (Swyngedouw, 1997; Armijos, 2012; Hoogester et al, 2017).[11]

Yet, while state bureaucracies strengthened and public investment increased in the 1960s and 1970s, public water agencies experienced significant funding and operational problems, and the reach of potable and irrigation systems remained limited (Armijos, 2012; Hoogesteger, 2013, 2015). Hence, households and communities were often required to mobilize to secure water, especially in rural areas where water services were highly circumscribed (Korovkin, 2001; Armijos, 2012).[12] Land reform, which started in 1964 and ended in 1994, supported this

saneamiento ambiental se va a realizar en la Parroquia de San Antonio de Pichincha', June 13 1956, *El Comercio*, p. 6, and 'Minga para trabajo de una acequia', September 17 1958, *El Comercio*, p. 19.

[11] See, for example, 'Portoviejo contará en breve con moderna planta de agua potable', June 27 1965, *El Comercio*, p. 14 and 'Se ha proyectado hasta 1973 provisión de agua potable para 15 ciudades', December 9 1968, *El Comercio*, pp. 1 and 5.

[12] For instance, only 8% of the rural population was estimated to have access to safe drinking water in 1975. Community mobilization and public investment helped increase coverage to 20% by the end of the decade. Coverage for the urban population was estimated to have increased from 67% to 79% during the same period (Armijos, 2012: 131).

process by rupturing the traditional hacienda complex and reducing landowning elite control over the local political economy (Guerrero, 1984; Lefeber, 1985; Barsky, 1988; Sanchez-Parga, 1989; Hoogesteger, 2013, 2015; Goodwin, 2017). Increasing numbers of indigenous and mestizo peasants secured legal title to land and established formal communities (Zamosc, 1995; Korovkin, 2001; Martínez, 2002; Yashar, 2006).[13] From this territorial base, indigenous and peasant communities started to mobilize to improve access to water, including turning to the state for support (Boelens & Doornbos 2001; Perrault et al, 2001; Korovkin, 2001; Armijos, 2012; Hoogesteger, 2014, 2015).[14] Indigenous and peasant social movements also strengthened, which provided a broader platform for rural communities to pressure the state and strengthen water rights (Meisch, 1992; Becker, 2008; Sanchez-Parga, 2010; Andolina, 2012; Goodwin, 2017). Water legislation introduced during this period supported communal organization around water, especially the *Ley de Aguas* (1972) and *Ley de Juntas Administradoras de Agua Potable y Alcantarillado* (1979).[15] Hence, the legal and bureaucratic

[13] Zamosc reports that the number of formal rural highland communities increased by 360 between 1964 and 1973, more than double the amount established in the decade before land reform (1995: 90-4). To achieve formal status, rural communities were expected to conform to *Ley de Comunas* (1937), but generally organized according to local practices and customs.

[14] Interviews: Indigenous leader, Tixan, August 23 2017; Indigenous leader, Riobamba, December 13 2018; President, Tucayta, Cañar, August 3 2016; and, Representative, Foro de los Recursos Hídricos, Quito, July 28 2015, September 9 2016, September 1 2017.

[15] While legislation introduced in the 1970s provided a stronger legal foundation for community water management, water associations have a longer history in Ecuador. For example, the association that operates the Mocha-Huachi irrigation network in the central highland province, Tungurahua, emerged in the late 1930s. Interview: President, Junta de Mocha Huachi, Cevallos, August 26 2016. See also 'Acción Cívica construye óvalos para repartir aguas de Mocha-Huachi', June 28 1965, *El Comercio*, p. 12 and Tamayo (2015).

framework that emerged in the 1960s and 1970s promoted organized citizen participation in water management and services and, in so doing, formed new political subjects and relations.

Water coproduction started to spread during this period as communities came into closer contact with local governments and state agencies, especially in the rural highlands where communal organization was strongest. The timing and detail varied from case to case, but a general pattern started to emerge: communities and associations contributed labor and finance while state agencies and local governments provided raw materials, technical assistance and funding.

A report in the local highland newspaper, *El Espectador*, gives a glimpse of this process in the early 1970s:

> Community members of Ilapo are holding a *minga* to build a canal to hold pipes for a potable water system that will benefit more than 10,000 inhabitants…thirteen communities have organized a consortium…each family within the consortium is contributing a total of 300 sucres, paid in instalments, to develop this project which will provide drinking water for the inhabitants of Ilapo…and will cost approximately 3 million sucres…the provincial government has provided materials to connect to the water sources.[16]

The report highlights the centrality of the *minga* to water coproduction in Ecuador. This collective labor practice, which is deeply rooted in Andean culture, is fundamental to highland water associations.[17] *Mingas* are held to construct, maintain and develop hydraulic

[16] 'Familias aportan con 300 sucres para construcción de un sistema de agua potable', June 17 1972, *El Espectador*, pp. 1-6.

[17] *Mingas* are far less common in the coastal region where wage labour dominates. Interviews: Representatives, Junta General de Usuarios Sistema de Riego Milagro-Mariscal Sucre, Milagro, July 25 2017; Regional representative, Foro de los Recursos Hidricos, Tosagua, July 28 2017; President, Junta Administradora de Agua

infrastructure, lasting from a few hours to several years. Labor is not remunerated in cash, but food, drink and festivities are frequently provided.[18] Water rights are often established and maintained through participation in *mingas*, and the practice performs a central role in sustaining communal relations, creating collective memories, and sharing knowledge (Boelens & Doornbos, 2001; Korovkin, 2001; Boelens & Vos, 2014; Hoogesteger, 2013, 2015).[19] The practice, as explained in the next section, also has important political effects (Armijos, 2013). Hence, the process as well as the outcome of *mingas* are important and the practice transcends its material impact on hydraulic infrastructure.

Notably, the article reports that communities and government were not the only actors involved in the project. *Caritas*, an international non-government organization linked to the Catholic Church, provided pipes and accessories, while *Misión Andina*, a non-governmental organization connected to the United Nations and other multilateral institutions, supplied technical support, transport, and materials.[20] Hence, in this case, potable water was coproduced through interactions between communities, local government and international non-governmental organizations.

Potable de Cooperativa de Vivienda Carlos Ruiz Burneo, Santo Domingo, August 29 2018; President, Junta de Agua Potable y Saneamiento de Julio Moreno, Santo Domingo, August 29 2018.

[18] In some cases, *mingas* have approached wage labor as water association members can opt out if they pay a penalty or hire a replacement. Interviews: President, Juntas de Agua Potable y Riego de la Parroquia de Güel, Sigsig, July 22 2016; President, Junta Regional de Agua Potable Cojitambo, Azogues, July 25 2016.

[19] Interviews: President, Tucayta, Cañar, August 3 2016; Representative, Codemia, Cayambe, August 29 2016.

[20] *Misión Andina* was heavily involved in the development of potable water systems in the highlands from the mid-1950s to the early 1970s. The model depicted in the above case was replicated in other areas of the highlands, especially in regions with large indigenous populations. See, for example, 'Misión Andina dará servicio de agua a 20.000 campesinos', December 13 1968, *El Comercio*, p. 20. For critical reflections on *Misión Andina* operations in Ecuador, see Bretón (2001) and Armijos (2012, 2013).

The newspaper reports that the communities were to manage the water system after it was constructed, which was the common pattern in the highland region.[21] Communities therefore not only performed important roles in constructing water systems but in developing the organizational capacity to manage and sustain them. However, while the water associations that emerged through this process generally operated with a high degree of autonomy, they remained reliant on periodic contributions from local governments, state agencies, non-governmental organizations and overseas development agencies.

In the 1980s and 1990s, structural adjustment and neoliberal reform reduced the state's capacity to support existing water associations and contribute to the construction of new potable and irrigation water systems. Public investment in hydraulic infrastructure plunged and state water agencies and public water companies went into serious decline (Swyngedouw, 1997; Boelens et al, 2015; Hoogesteger et al, 2017).[22] The centralized water bureaucracy constructed in the 1960s and 1970s was dissolved and a more fragmented institutional structure was erected in its place (Armijos, 2012; Hoogesteger, 2014; Boelens et al, 2015). Meanwhile, efforts intensified to privatize water service delivery and expand the role of the market in distributing water, even if wholesale legal changes were blocked through mass mobilizations (Pacari, 1998; Boelens & Zwarteveen, 2005; Bakker, 2010, 2013; Andolina, 2012; Boelens et al, 2015).

[21] When I visited Ilapo, Chimborazo in August 2018 and interviewed members of the local government and spoke to local residents, the potable water system was operated by a water association with the support of the local government and international non-governmental organization. Thus, the basic coproduction pattern established in the 1970s remained intact.

[22] See, for example, 'Las obras de regadío están en bancarrota', June 15 1982, *El Comercio*, p. 1 and 'Solo el 50% tiene servicio de agua', July 12 1988, *El Comercio*, B-8.

Water associations proliferated as state support for drinking water systems declined and state-operated irrigation systems were transferred to farmers to manage, following the general trend in the Global South (Mosse, 1997; FRH, 2011; Andolina, 2012; Boelens et al, 2015).[23] With limited access to public funds, communities and associations increasingly turned to multilateral organizations, overseas development agencies and non-governmental organizations to help construct or improve water systems (Perrault et al, 2001; Andolina, 2012; Boelens et al, 2015; Hoogesteger, 2014).[24] Water associations continued to provide major contributions through labor, finance and management. However, this diverse set of national and international actors supplied important inputs, including finance, materials and technical assistance. The state was not absent from this process. Water legislation, while only loosely enforced, continued to support the establishment of water associations, while state bureaucracies, however enfeebled and chaotic, continued to regulate water use and distribution. Moreover, state agencies and local governments worked directly with communities to construct and develop water systems, despite the lack of funds (Armijos, 2012; Hoogesteger, 2013, 2014,

[23] Interviews: Representative, Foro de los Recursos Hídricos, Quito, July 28 2015, September 9 2016, September 1 2017; President, Junta General de Usuarios Sistema de Riego Milagro-Mariscal Sucre, Milagro, July 25 2017; Administrator, Junta de Riego El Pisque, Cayambe, September 4 2018; President, Tucayta, Cañar, August 3 2016.

[24] Interviews: Representative, Protos, Cuenca, July 14 2016; President, Junta Regantes de Chambo-Guano, Riobamba, August 1 2016; President, Cenagrap, Cañar, August 14 2018; President, Junta de Riego Mocha Huachi, Cevallos, August 26 2016; President, Junta Regional de Agua Potable Cojitambo, Cañar, July 25 2016; Representative, Foro de los Recursos Hídricos, Quito, July 28 2015, September 9 2016, September 1 2017.

2015).[25] Public water companies also provided important contributions in some cases.[26] Yet, the composition of coproduction changed in the 1980s and 1990s, with the state making fewer contributions and non-state actors taking a more prominent role.

Coproduction dynamics changed in the 2000s and 2010s when Rafael Correa came to power and initiated a state-directed capitalist development project which broke with the neoliberal orthodoxy (Becker, 2012; Correa, 2012; Martínez Novo, 2014; Conaghan, 2015).[27] Public spending on water management, infrastructure and services increased, albeit from a low base, and a new constitution was introduced, which contained several important declarations on water, including proscribing privatization, entrusting water management to the state and community, and promoting public-community alliances to deliver water services (Hoogesteger, 2014; Hoogesteger et al, 2017).[28] Following the introduction of the new constitution and a protracted political struggle, a comprehensive new water law - *Ley Orgánica de Recursos Hídricos, Usos y Aprovechamiento del Agua* (2014) – was promulgated, which replaced existing water legislation and laid the foundations for a new water regime (Armijos, 2013; Boelens et al, 2015; Dupuits, 2018; Harris & Roa-Garcia, 2013).[29] By entrusting water

[25] Numerous examples of water coproduction in the 1980s and 1990s are offered in local and national newspaper archives. See, for example, 'Abastecimiento de agua de consumo de inauguró en Miraflores Cochapamba', August 4 1981, *El Espectador*, p. 7, 'Minga para dotar de agua a comunidades de Salcedo', July 2 1982, *El Comercio*, p. B-10, 'Agua potable para tres comunidades campesinas', June 11 1988, *El Comercio*, p. A-8.

[26] Interview: Representative, ETAPA, Cuenca, August 13 2018.

[27] For insight into efforts to reform water policies and institutions in the early 2000s, see Cremers et al (2005).

[28] The 2008 constitution (Art. 318) declares: 'Water management will be exclusively public or communal…The state will strengthen…community initiatives around water management and public service delivery by encouraging public and community alliances.'

[29] The 2014 law (Arts. 56 and 83) restates and extends the constitutional commitment to promoting public-community alliances to deliver water services and also creates some space for water associations to influence

management to the state and community and promoting public-community alliances to deliver water services, the new regime effectively formalized water coproduction, integrating water associations, local governments and state agencies into a formal framework, while leaving the precise contributions and roles of the various actors involved largely undefined. Hence, it retained some of the essential features of the historical process of water coproduction but placed it within a more clearly defined legal and regulatory framework. Importantly, the state was given a central role within the new regime and decision-making power was concentrated in new state bureaucracies, the *Secretaría Nacional de Agua* and the *Agencia de Regulación y Control de Agua*.

Overseas development agencies, multilateral institutions and non-governmental organizations continued to provide important contributions to coproduction (Hoogesteger, 2014, 2016; Hoogesteger et al 2017).[30] However, their influence waned because of the Correa government's opposition to the involvement of international agencies in national development and the shifting funding priorities of international non-governmental organizations and overseas development agencies. The composition of water coproduction therefore changed once again, with the state becoming a more prominent actor, especially in the bureaucratic and regulatory domain, but also in terms of financial and technical assistance (Boelens et al, 2015). Meanwhile, communities and associations continued to perform a lead role in constructing,

water policies at the local and national level. However, as explained in greater depth in the next section, the bureaucratic framework it establishes concentrates power in state agencies and limits genuine social participation. Contrary to the constitution, the law also opens the door to private sector involvement in water service delivery (Art.7).

[30] Interviews: Representative, Foro de los Recursos Hídricos, Quito, July 28 2015, September 9 2016, September 1 2017; Representatives, CESA, Riobamba, August 21 2017; Representative, CESA, Saqusilí, August 17 2018; Representative, PROTOS, Cuenca, July 14 2016.

managing and maintaining potable and irrigation water systems, but within a clearer legal and regulatory framework.[31]

Taking a longer-term view of water coproduction in Ecuador shows that the process was well underway in the decades before structural adjustment and neoliberal reform, and the basic pattern that emerged in the 1960s and 1970s was replicated in the decades that followed. During this period, the constant feature of coproduction has been the active involvement of communities and associations in constructing, maintaining and operating drinking and irrigation water systems, while the variable component has been the contributions from state agencies, local governments, public water companies, multilateral organizations, overseas development agencies and non-governmental organizations. Hence, while the composition of actors has shifted, water coproduction has exhibited basic continuity over the last six decades and occurred during episodes of state retreat and expansion.

Historicizing coproduction also offers fresh insight into the drivers of coproduction. The two factors Joshi and Moore (2004) tentatively posit – 'logistical' and 'governance' – have both been apparent in Ecuador. The basic challenge of providing drinking and irrigation water to rural and peri-urban households has encouraged the state to promote coproduction. Yet, while logistical challenges are considerable in some cases, they are not extreme by regional or global standards. Meanwhile, structural adjustment and neoliberal reform significantly reduced the state's capacity to bring water to urban and rural communities, showing the salience of governance – and ideological - drivers. However, coproduction was already firmly established by that stage, demonstrating that it was not simply a reaction to declines in state capacity but a

[31] Numerous examples of recent water coproduction initiatives are offered in the local press. See, for instance, 'Con iniciativa logran mejor acceso al agua', August 26 2017, *El Universo* and 'Las Nieves y La Chonta mejorarán sistema de agua', December 21 2018, *El Tiempo*.

response to more fundamental political factors.[32] The history of coproduction in Ecuador also shows that the two drivers posited by Joshi and Moore (2004) are too centered on the state and underestimate the central role social actors perform in driving the process (Mitlin, 2008; Mitlin & Bartlett, 2018). From the 1960s onwards, rural communities and associations propelled coproduction forward, harnessing collective practices and relations to improve access to potable and irrigation water (Boelens & Doornbos 2001; Armijos, 2012, 2013; Hoogesteger 2013, 2014). While this was related to state weakness and neglect, it was rooted in the basic desire of rural communities to improve their living conditions and take greater control of their lives. The historical analysis presented in this section also indicates that more attention should be paid to macro political-economic drivers. For example, the transformation of the agrarian economy in the 1960s and 1970s promoted state-society interactions around water services, showing how the weakening of traditional practices and institutions can create conditions for the emergence and diffusion of coproduction.

Placing coproduction in historical perspective provides another important insight. The heavy involvement of multilateral organizations, overseas development agencies and non-governmental organizations in water coproduction from the 1960s suggests the Joshi and Moore (2004) formulation of coproduction is too restrictive. While limiting the process to interactions between state agencies and organized citizens is analytically appealing, the case suggests the concept should be expanded to include this diverse set of actors. Following this approach allows for a fuller analysis of the interplay between the different organizations involved in coproduction and the political implications of these dynamic interactions.

[32] Joshi and Moore (2004: 41) describe the governance driver as followers: 'Government no longer provides certain services very effectively, and as a result, organised groups of citizens with something at stake move in to help shore them up'. This suggests services were already in place, which was generally not the case in Ecuador. For the most part, coproduction was required to *create* rather than *support* water services.

The next section will build on this analysis and explain how the historical evolution of coproduction influences contemporary politics, concentrating on the tension between engagement with and autonomy from the state.

4.2. Autonomy

Coproduction reconfigures state-society relations and creates new political subjects, relations and institutions. In doing so, it generates political tensions and opportunities, both at the national and local level. The reason for this lies partly in its tendency to promote engagement with and autonomy from the state. While Mitlin (2008) pointed toward this feature of coproduction a decade ago, its characteristics and implications have not been fully explored. In this section, I will seek to highlight the importance and complexity of this issue and illuminate several aspects that warrant closer inspection.

The first is related to the form, quantity and frequency of contributions to coproduction. Here, the active role associations and communities have performed in developing and maintaining potable and irrigation water systems is crucial. The general process – as described above – involves communities and associations contributing labor and finance to the construction, maintenance and management of water systems. Thus, communities and associations have made significant contributions over the long-run which has given them a strong sense of ownership and control.

The struggle over the construction and implementation of the new water regime outlined in the previous section illustrates the political salience of this feature of water coproduction. The series of new regulations that the regime imposed on water associations was one of the main sources of tension. Faced with greater state regulation and control, water associations resisted, partly because of the way water systems were constructed and managed historically (Armijos, 2013; Boelens et al, 2015). Yaku Perez Guartambel, the leader of a coalition of community

water systems in the southern highlands and president of the highland indigenous movement, *Ecuarunari*, makes this point forcefully:

> Was it the Correa government or the Secretary of Water or the hundreds and thousands of *mingueros* who organized through water to construct community systems? [33]

While Perez overlooks the contributions of state agencies and local governments, there is considerable evidence to support his claim that communities have performed the lead role in developing water systems. Several examples are documented in the literature. For instance, Boelens and Doornbos (2001) explain how indigenous communities in Ceceles, Chimborazo labored collectively to construct a new irrigation canal platform in the early 1990s. Community members worked in *mingas* 'under extremely difficult conditions' for more than a year to build the platform and improve access to irrigation water (2001: 347-9).

The representatives of the majority of the highland water organizations I interviewed also stressed the centrality of *mingas*, providing vivid accounts of the efforts and sacrifices past and present community members have made to construct, manage and maintain water systems. For example, the president of a small water association in the central highland province, Chimborazo explained how its members recently constructed a new irrigation system:

> We used our own labor power…we organized a *minga* with the participation of men, women and children…to build the system. We carried gravel, sand and cement on our backs and sometimes on animals…this process lasted three years, all of it based on participation in the *minga.*[34]

[33] 'Cuestionan instructivo sobre los sistemas comunitarios de agua', July 06 2016, *El Mercurio*, p. 3-A. *Mingueros* refers to people who participate in the collective labor practice *minga* (see above).

[34] Interview: President, Junta de Riego Palmira, Palmira, August 22 2017.

Newspaper archives, as indicated in the previous section, provide additional evidence. For example, *El Comercio* reports in the early 1970s:

> Five hundred and twenty-nine kilometers of irrigation channels and eighty-three kilometers of access routes have been constructed in the country through the unpaid system of communitarian work called the *minga.*[35]

These sources highlight the considerable collective labor power that communities have invested in hydraulic infrastructure across generations. Through these physical endeavors, collective identities, memories and practices have emerged which have generated a strong sense of ownership and control and created a platform for organization and mobilization (Boelens & Doornbos, 2001; Armijos, 2012, 2013; Boelens & Vos, 2015; Hoogesteger 2013, 2015). Hence, the form as well the amount of contributions to coproduction matter. The case also shows that the frequency of contributions is important, with communities and associations being actively involved in the construction, maintenance and management of water systems over the long-run.

Together, these factors have generated a strong basis for autonomy. The practice and meaning of autonomy vary between water associations. In some cases, it is a rejection of state power and authority, which complicates but does not preclude coproduction. In others, it is better understood as a response to state neglect or incompetence. Regardless of its specific origins and forms, autonomy provides water associations with the capacity to take decisions over various aspects of water management and services at the local level, including water distribution, organizational structures, water tariffs, and investment (Boelens & Doornbos, 2001; Cremers, et al 2005; Hoogesteger 2013, 2015). The *minga* supports this by enabling associations to construct and maintain infrastructure, reducing reliance on the state and

[35] '529 kms de canales de riego construidos mediante mingas', February 28 1972, *El Comercio*, pp. 1 and 12.

strengthening communal relations. However, it is not a precondition for autonomy and some associations, especially in the coastal region, operate with a high level of operational autonomy without using the practice.[36] Water association autonomy is gradational, with some associations having greater autonomous capacity than others, and scalar, insofar as it operates at different levels, with some associations integrating smaller organizations which retain a relatively high degree of autonomous control over water at the local or community level. In these cases, autonomy is negotiated within the association as well as between the association and the state. While autonomy is a key feature of water service delivery, it certainly cannot be reduced to this domain. The practice has enabled communities and associations to carve out space for the control of local resources, protect and extend water rights, maintain and develop alternative forms of organization, and renegotiate their relationship with the state (Boelens & Doornbos 2001; Armijos, 2013; Dinerstein, 2015; Esteva, 2015).[37] Hence, autonomy is a heterogenous and multifaceted political practice, which reconfigures power and authority and creates new social and political relations.

While it is outside the scope of this article to provide a detailed analysis of these practices and relations, it is crucial that coproduction research recognizes autonomy's multiple dimensions, and explores how it has evolved historically. In doing so, it is necessary to consider changes in the composition of coproduction since this has a significant bearing on the issue. In

[36] Interview: Representatives, Junta General de Usuarios Sistema de Riego Milagro-Mariscal Sucre, Milagro, July 25 2017.

[37] Interviews: President, Ecuarunari, Cuenca, July 16 2016 and July 17 2017; President, Tucayta, Cañar, August 3 2016; President, Codemia, Cayambe August 17 2010; Representative, Pueblo Kayambi, Cayambe, August 29 2017; President, Junta Regantes de Chambo-Guano, Riobamba, August 1 2016; President, Junta Regional de Agua Potable Cojitambo, Cañar, July 25 2016; President, Junta de Mocha Huachi, Cevallos, August 26 2016; Representative, Foro de los Recursos Hídricos, Quito, July 28 2015, September 9 2016, September 1 2017.

Ecuador, the participation of overseas development agencies, multilateral institutions and non-government organizations reduced the reliance of water associations on the state and increased space for them to develop autonomous organizational capacity, especially during the 1980s and 1990s (Boelens et al, 2015; Hoogesteger et al, 2017). With cash-strapped state agencies and local governments contributing less funding, materials and technical support, water associations reduced their engagement with the state and strengthened their ties with non-state actors. The state's bureaucratic and regulatory capacity also diminished, which reduced interactions between water associations and state agencies and limited the application of existing water legislation. When the Correa government attempted to increase state control of water in the 2000s and 2010s its plans were met with fierce opposition from water associations which sought to protect the autonomous spaces they had constructed during earlier phases of coproduction. Thus, tracing historical changes in the composition of coproduction provides insight into contemporary processes and politics.

When exploring autonomy through a coproduction lens it is also important to investigate how the tension between engagement and autonomy is mediated through formal state institutions and how it generates political struggle and change. The legislative process behind the construction of the new water regime in Ecuador offers a window into these issues. The 2008 constitution, which was approved through a national referendum after being rewritten in a Constituent Assembly, declared that a new water law must be introduced within twelve months. Five years later, following a series of protests and a nation-wide consultation, the new water law - *Ley Orgánica de Recursos Hídricos, Usos y Aprovechamiento de Agua* (2014) - was finally introduced. While the final version of the law accommodated some water association and social movement demands, it remained within the spirit of the original

government proposal, particularly in relation to the centralization of power within state agencies.[38]

A cursory look at the two legislative proposals that were introduced to initiate the legislative process in late 2009 illustrates this point and provides insight into coproduction politics. One proposal came from the executive branch of the Correa government - *Proyecto de Ley Orgánica de los Recursos Hídricos, Uso y Aprovechamiento del Agua* – and the other from the indigenous movement - *Proyecto de Ley que Regula los Recursos Hídricos, Usos y Aprovechamiento del Agua*.[39] The two proposals, which provided the foundation for subsequent debates within the legislature, offered alternative visions of water management and services.[40] Whereas the government proposal sought to centralize decision making within state agencies, the indigenous proposal aimed to protect and strengthen water association autonomy and carve out space for broad social participation in the management and distribution of water at the national and local level. The divergence between the two proposals and the threat the government's plans posed to water association autonomy were important factors behind the wave of protests that swept across Ecuador in 2009 and 2010, culminating in the suspension of voting on the law in the National Assembly and the announcement of national consultation on the legislation.[41]

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[38] Virtually all of the water association, social movement and non-governmental organization representatives I interviewed said that the consultation had a negligible impact on the final version of the law. See Isch and Zambrano (2017) for brief analysis of the consultation process.

[39] The indigenous movement proposal was primarily developed by the *Confederación de Nacionalidades Indigenas del Ecuador* (CONAIE) and submitted to the National Assembly by a coalition of leftist political parties, including the indigenous political party, Pachakutik.

[40] Interviews: Legislator, Pachakutik, Riobamba, August 6 2015; Legislator, Alianza Pais, Quito, August 17 2017.

[41] See, for example, 'Las juntas, en alerta por la Ley de Aguas', *El Comercio*, September 2 2009, p. 3; 'Indígenas y campesinos del austro protestaron contra la Ley de Aguas', *El Comercio*, September 12 2009, p. 4; 'Campesinos

The tension between engagement and autonomy was central to this struggle. Viewed through a coproduction lens, the indigenous proposal provided a framework to assuage it by giving water associations and social movements the institutional space to exert meaningful influence over the legal and bureaucratic process while protecting water association autonomy. Meanwhile, the government initiative threatened to exacerbate it by attempting to limit the autonomous capacity of water associations, and incorporate them into a centralized, state-centric bureaucratic and regulatory framework, over which they would have no direct influence. It was this proposal that provided the blueprint for the final law, which instilled coproduction with fresh tensions as water associations were left without direct influence over water management at the national level and threatened with the reduction of autonomous control over water systems at the local level (Armijos, 2013; Boelens et al, 2015). For example, the law sought to standardize and bureaucratize water associations and therefore limit their ability to maintain or construct their own organizational structures and norms.[42] Hence, water associations in Ecuador under Correa faced a similar threat to the one posed to water committees in Venezuela under Chavez (McMillan et al, 2014). The lack of direct influence water associations and social movements were able to exert within the new regime exacerbated these concerns as technocrats and bureaucrats were given authority to take key decisions over

alertas por el debate en la Asamblea', *El Comercio*, May 6 2010, p. 1; 'Ley de Aguas: ¿centralización o participación democrática?', *Hoy*, May 11 2010, p. 1;

[42] Interviews: President, Ecuarunari, Cuenca, July 16 2016 and July 17 2017; President, Tucayta, Cañar, August 3 2016; President, Codemia, Cayambe August 17 2010; Representative, Codemia, Cayambe, August 29 2016; Representative, Foro de los Recursos Hídricos, Quito, July 28 2015, September 9 2016, September 1 2017; Legislator, Pachakutik, Riobamba, August 6 2015; President, Juntas de Agua Potable y Riego de la Parroquia de Güel, Sigsig, July 22 2016.

water management and services. This gave rise to the widespread belief that the new regime was being imposed unilaterally rather than constructed collectively.

Concerns over the threats the new regime posed to water association autonomy were heightened by Correa's efforts to repress and weaken organized sectors of society that were not fully aligned to his political project (Conaghan, 2015). Water association and social movement activism against mining highlights this tendency. Once in power, Correa saw the mining sector as an important source of government revenues and formed alliances with multinational corporations to develop medium and large-scale mines in the highlands and subtropical lowlands (Bebbington, 2012; Dupuits, 2018; Vela-Almeida et al, 2018). With mining presenting a serious threat to water supplies, water associations, along with indigenous and environmental movements, mobilized to prevent their development, bringing them into direct confrontation with the state.[43] This complicated coproduction as communities and associations became wary of working with state agencies and local governments for fear of being coopted and manipulated. From this angle, state regulation appeared more a mechanism to silence water associations than to improve water service delivery. Within these settings, the kind of synergistic state-society relations reported elsewhere in the coproduction literature are incredibly hard to establish (Evans, 1996; Joshi & Moore, 2004; Navarrete-Hernandez & Navarrete-Hernandez, 2018).

The case therefore highlights some of the dilemmas social organizations confront when engaging in coproduction. However, it also points towards the limits of autonomous organization and the need for some form of coproduction. While water associations have been

[43] Interviews: Legislator, Pachakutik, Riobamba, August 6 2015; President, Ecuarunari, Cuenca, July 16 2016 and July 17 2017.

instrumental in expanding access to potable and irrigation water, they have also faced multiple challenges managing and delivering water.

Maintaining hydraulic infrastructure has been a particularly pressing problem. The material constituent parts of water systems – tubes, pipes, canals, switches, reservoirs, storage tanks, treatment plants – have long lives, but require maintenance and, ultimately, replacement. Water associations have reduced infrastructure costs by harnessing local knowledge, acquiring technical skills, and holding *mingas*. Collecting tariffs for water use has also given some associations the capacity to make substantial investments in infrastructure (Hoogesteger, 2014). However, the level of tariffs and the ability of members to pay them are constrained by economic conditions and structures. Challenges are particularly acute in rural areas where opportunities for small-scale farmers to generate reliable income streams are highly circumscribed.[44] The crisis of small-scale agriculture has accelerated migration which sometimes brings financial flows back to rural communities, but threatens the long-term viability of water associations as migrants reduce or cease their participation in community and association activities. The challenges of maintaining hydraulic infrastructure are particularly acute for small water associations which lack the financial capacity to make significant investments. In some cases, associations and communities have reduced these constraints by building large and powerful organizations.[45] However, the potential for scaling-up is limited

[44] The crisis of small-scale agriculture in Ecuador was stressed in all the interviews I conducted with water associations in the highland and coastal regions and in the public meetings I attended across the country. Farmers cited numerous factors, including low prices for agricultural goods in local and international markets, intense competition, land and water inequality, and insufficient state support. On the challenges of small-scale agriculture in Ecuador, see, for example, Rubio et al (2008) and Berry et al (2014).

[45] Interviews: President, Junta Regantes de Chambo-Guano, Riobamba, August 1 2016; President, Cenagrap, Cañar, August 14 2018; President, Tucayta, Cañar, August 3 2016; Representative, Foro de los Recursos Hídricos, Quito, July 28 2015, September 9 2016, September 1 2017.

by multiple factors, including tensions and divisions within and between communities and associations (Boelens & Doornbos, 2001; Hoogesteger, 2013, 2015). Moreover, even the best organized and most sophisticated associations face limits over the long-run. Coverage of irrigation and potable water is often limited due to financial and infrastructure constraints, and the availability of water is frequently reduced because of insufficient resources to repair or replace ageing equipment. The difficulties water associations have experienced maintaining and developing infrastructure were evident during my fieldwork. For example, in a public meeting of local communities and associations, state agencies and the local government in Guamote, Chimborazo several association representatives expressed their concern over the condition of their drinking water systems, with some noting that pipes and tanks were ten or fifteen years older than their usual lifespan.[46] In some cases, the challenge of maintaining water systems has proved too great and communities have lost access to potable or irrigation water.[47]

The difficulties water associations have faced in Ecuador demonstrate the need to take seriously claims that coproduction can allow states to avoid their responsibility to provide good quality public services and transfer the burden to communities and grassroots organizations (McCarthy, 2012; Meagher, 2013; McMillan et al, 2014; Adams & Boateng, 2018; Moretto et al, 2018; Al'Afghani et al, 2019). However, while coproduction has required communities and associations to shoulder the burden of water service delivery, it has also enabled them to develop autonomous capacity and create new spaces for political action. Hence, coproduction not only rest on its ability to deliver public good and services but on its capacity to create political opportunities and generate alternative forms of citizenship and political practice.

[46] Public meeting, Guamote, Chimborazo, December 18 2018.

[47] Of course, losing access to water is not unique to coproduction. Both private and public operated potable systems have demonstrated their capacity to reduce and remove access to water over time, especially to poor and informal households. See, for example, Anand (2017).

5. Conclusion

Coproduction spread in the Global South as states reduced their direct role in public good and service provisioning during structural adjustment and neoliberal reform. Yet, as I have demonstrated in this article, it is more deeply rooted, with water coproduction in Ecuador becoming increasingly commonplace from the 1960s and 1970s. Hence, while it expanded in the 1980s and 1990s, it was already well established by that stage, showing that coproduction does simply respond to dwindling state capacity, as suggested by Joshi and Moore (2004), but is a more fundamental feature of capitalist development in the Global South.

Not only is this insight important for understanding the historical drivers of coproduction but for comprehending contemporary coproduction processes and politics. I have demonstrated this by showing how water coproduction became enshrined in the constitution and law in Ecuador and how the historical evolution of water coproduction influenced political struggles over the construction and implementation of the new water regime. While this regime is based on collaboration between the state and community, it concentrates power within state agencies and threatens the autonomy of water associations. Faced with greater state regulation and control, water associations mobilized to defend the autonomous spaces they created during earlier phases of coproduction. The collective labor communities and associations invested into hydraulic infrastructure was central to this struggle. Through these physical endeavors, most clearly expressed in *mingas*, communities and associations generated a strong sense of collective ownership and control which created a powerful platform to resist state regulation and control. Hence, the form of contributions to coproduction has important political effects.

The composition of actors involved in coproduction is also influential. The closer relationships water associations formed with non-governmental organizations and overseas development agencies reduced their reliance on the state and enabled them to develop their autonomous capacity, especially in the 1980s and 1990s. More generally, the article has shown

that coproduction not only produces public goods and services but new political subjects, relations, and institutions. Recognizing this provides further evidence of coproduction's tendency to create multiple 'products' insofar as it is never restricted to a single dimension of the social world (Miller & Wyborn, 2018).

Several new lines of inquiry emerge out of this analysis. Unearthing the history of coproduction is essential as it has been largely ignored in the existing literature and has a significant bearing on contemporary issues. Not only will this offer valuable insights into the history of public good and service provisioning in the Global South, but also into fundamental political issues, including citizenship and state-building (Migdal, 2001; Holston, 2008; Centeno et al, 2017). More research is also required on the historical factors that shape coproduction. Here, the range of historical analysis could be usefully extended into the (pre) colonial past (Mosse, 1999). The centrality of the *minga* to water coproduction in Ecuador shows that practices that have deep histories can exert considerable influence over contemporary coproduction processes and have important political effects.

How the tension between engagement with and autonomy from the state plays out at different scales and between different actors is another issue that warrants further investigation. The practice and meaning of autonomy vary between water associations in Ecuador which implies alternative relationships with the state. Coproduction is more complicated when associations have a more radical form of autonomy which challenges state power and authority. But in these cases, tensions can be assuaged at the local level when there are strong personal and ideological ties between water associations and local governments. Local electoral politics therefore influences the tension between engagement and autonomy (Fieuw & Mitlin, 2018). Exploring variation in the engagement-autonomy relation at different scales and between different actors offers the prospect of generating new empirical and theoretical insights into coproduction. More broadly, further research is required into how communities, grassroots

organizations and social movements negotiate autonomy while participating in coproduction. Here, critical attention should not only be paid to the state but to non-governmental organizations, overseas development agencies, and multilateral institutions. In Ecuador, water associations tended to strengthen their autonomous capacity by forging alliances with this diverse group of actors. However, in some cases, the price paid for receiving funding, materials and technical assistance was the adoption of organizational and normative frameworks that diverged from existing practices and institutions and reflected neoliberal principles and objectives (Andolina, 2012; Hoogesteger, 2015). Hence, in these cases, a key pillar of autonomy, the capacity to develop and maintain appropriate, vernacular forms of organizational, was undermined.

Macroeconomic structures and processes, which have been largely ignored in the existing coproduction literature, also demand greater scholarly attention. I have indicated some links between the macroeconomy and coproduction in this essay. First, large-scale mining has instilled water coproduction with significant tension as state-society relations have deteriorated and trust has eroded between state and social actors. Second, economic structures, processes and conditions have limited the resources rural water associations generate through tariffs which has reduced their investment in infrastructure and threatened their autonomy and viability. Both of these issues are connected to Ecuador's insertion into the global economy, especially its role as an exporter of primary goods. Hence, the national and world economy has a significant bearing on water coproduction in Ecuador, and the influence macroeconomic structures and processes exert over coproduction warrant more critical attention elsewhere in the Global South.

Exploring these issues offers the prospect of developing a fuller understanding of the political opportunities that are opened and closed through coproduction and the potential of the process to reshape politics in the Global South.

References

Adams, E.A. & Boateng, G.O. (2018). Are Urban Informal Communities Capable of Co-production? The Influence of Community–Public Partnerships on Water access in Lilongwe, Malawi. *Environment and Urbanization*. Vol. 30 (2): 461-480

Al'Afghani, M.M.; Kohlitz, J. & Willetts, J. (2019). Not Built to Last: Improving Legal and Institutional Arrangements for Community-based Water and Sanitation Service Delivery in Indonesia. *Water Alternatives*. 12 (1): 285-303

Anand, N. (2017). *Hydraulic City: Water and the Infrastructures of Citizenship in Mumbai*. Durham: Duke University Press

Andolina, R. (2012). The Values of Water: Development Cultures and Indigenous Cultures in Highland Ecuador. *Latin American Research Review*. 47 (2): 3-26

Armijos, M.T. (2012). Negotiating Citizenship Through Communal Water Management in Highland Ecuador. PhD Thesis, University of Sussex

Armijos, M.T. (2013). They Cannot Come and Impose on Us: Indigenous Autonomy and Resource Control Through Collective Water Management in Highland Ecuador. *Radical History Review.* 116: 86-103

Bakker, K. (2010). *Privatizing Water: Governance Failure and the World's Urban Water Crisis*. Ithaca and London: Cornell University Press

Bakker, K. (2013). Neoliberal versus Postneoliberal Water: Geographies of Privatization and Resistance. *Annals of the Association of American Geographers*. 103 (2): 253-60

Banana, E., Chitekwe-Biti, B. & Walnycki, A. (2015). Co-Producing Inclusive City-Wide Sanitation Strategies: Lessons from Chinhoyi, Zimbabwe. *Environment and Urbanization*. 27 (1): 35-54

Barsky, O. (1988). *La reforma agraria ecuatoriana*. Quito: Corporación Editora Nacional

Bebbington, A.J. (ed.) (2012). *Social Conflict, Economic Development and Extractive Industry: Evidence from South America*. Abingdon: Routledge

Becker, M. (2008). *Indians and Leftists in the Making of Ecuador's Modern Indigenous Movement*. Durham, NC: Duke University Press.

Becker, M. (2012). Building a Plurinational Ecuador: Complications and Contradictions. *Socialism and Democracy*. 26 (3): 72-92

Benavides, O.H. (2004). *Making Ecuadorian Histories: Four Centuries of Defining Power*. Austin: University of Texas Press

Berry, A. et al. (2014). *La concentración de la tierra: un problema prioritario en el Ecuador contemporáneo*, Quito: Abya-Yala

Boelens, R. (2009). The Politics of Disciplining Water Rights. *Development and Change*. 40 (2): 307-331

Boelens, R. & Doornbos, B. (2001). The Battlefield of Water Rights. Rule-making Amidst Conflicting Normative Frameworks in the Ecuadorian Highlands. *Human Organization*. 60 (4): 343-355.

Boelens, R., Hoogesteger, J. & Baud, M. (2015). Water Reform Governmentality in Ecuador: Neoliberalism, Centralization and the Restraining of Polycentric Authority and Community Rule-Making. *Geoforum*. 64: 281-91

Boelens, R. & Vos, J. (2014). Legal Pluralism, Hydraulic Property Creation and Sustainability: The Materialized Nature of Water Rights in User-Managed Systems. *Current Opinion in Environmental Sustainability*. 11: 55-62.

Boelens, R. & Zwarteveen, M. (2005). Prices and Politics in Andean Water Reforms. *Development and Change*. 36 (4): 735-758

Brandsen, T. & Pestoff, V. (2006). Co-Production, the Third Sector and the Delivery of Public Services. *Public Management Review*. 8 (4): 493-501

Brandsen, T. & Honingh, M. (2015). Distinguishing Different Types of Co-Production: A Conceptual Analysis Based on Classical Definitions. *Public Administration Review*. 76 (3): 427-35

Breton, V. (2001). *Cooperación al desarrollo y demandas étnicas en los andes ecuatorianos: Ensayos sobre indigenismo, desarrollo rural y neoindigenismo*. Quito: FLACSO

Centeno, M., Kohli, A. & Yashar, D. (2017). *States in the Developing World*. Cambridge: Cambridge University Press

Conaghan, C.M. (1988). *Restructuring Domination: Industrialists and the State in Ecuador*. Pittsburgh: University of Pittsburgh Press

Conaghan, C.M. (2015). Surveil and Sanction: The Return of the State and Societal Regulation in Ecuador. *European Review of Latin and Caribbean Studies*. 98: 7-27

Correa, R. (2012). Ecuador's Path. *New Left Review*. Sept/Oct, Vol. 77: 88-104

Cremers, L., Ooijevaar, M. & Boelens, R. (2005). Institutional reform in the Andean irrigation sector: Enabling policies for strengthening local rights and water management. *Natural Resources Forum*. 29 (1): 37-50.

Cross, C. (2016). Ulinzi Shirikishi: Popular Experiences of Hybrid Security Governance in Tanzania. *Development and Change*. 47 (5): 1102-1124

Dinerstein, A.C. (2015). *The Politics of Autonomy in Latin America: The Art of Organising Hope*. London and New York: Palgrave-MacMillan

Dupuits, E. (2018). From Multi-level Governance to Scalar Politics: Water Community Networks Challenging Neo-Extractivist Governmental Institutions in Ecuador. C. Bréthaut &

R. Schweizer (eds.) (2018). *A Critical Approach to International Water Management Trends*. London: Palgrave Macmillan

Esteva, G. (2015). The Hour of Autonomy. *Latin American and Caribbean Ethnic Studies*.10 (1): 134-145.

Evans, P. (1996). Government Action, Social Capital and Development: Reviewing the Evidence on Synergy. *World Development*. 24 (6): 1119-32

Fahmi, W.S. (2005). The Impact of Privatization of Solid Waste Management on the Zabaleen Garbage Collectors of Cairo. *Environment and Urbanization*. 17 (2): 155-170

Fieuw, W. & Mitlin, D. (2018). What the Experiences of South Africa's Mass Housing Programme Teach Us About Civil Society Contribution to Policy and Programme Reform. *Environment and Urbanization*. 30 (1): 215-232

Forsyth, T. & Johnson, C. (2014). Elinor Ostrom's Legacy: Governing the Commons and the Rational Choice Controversy. *Development and Change*. 45 (5): 1093-1010

FRH (2011). *Transferencia de competencias de riego para el desarrollo*. Quito: Foro de los Recursos Hídricos

FRH (2013). *La gestión comunitaria del agua para el consumo humano y el saneamiento en el Ecuador: diagnóstico y propuestas*. Quito: Foro de los Recursos Hídricos

Gabbert, K. & Martínez, A. (eds) (2018). *Venezuela desde adentro: ocho investigaciones para un debate necesario*. Quito: Fundación Rosa Luxemburg

Goodwin, G. (2017). The Quest to Bring Land under Social and Political Control: Land Reform Struggles of the Past and Present in Ecuador', *Journal of Agrarian Change*. 17 (3): 571-93

Gott, R. (2005). *Hugo Chavez and the Bolivarian Revolution*. London: Verso

Guerrero, A. (1984). *Haciendas, capital y lucha de clases Andina: disolución de la hacienda serrana y lucha política en los años 1960-1964*. Quito: El Conejo

Harris, L.M. & Roa-Garcia, M.C. (2013). Recent Waves of Water Governance: Constitutional Reform and Resistance to Neoliberalization in Latin America (1990-2012). *Geoforum*, 50: 20-30

Holston, J. (2008). *Insurgent Citizenship: Disjunctions of Democracy and Modernity in Brazil*. Princeton and Oxford: Princeton University Press

Hoogesteger, J. (2013). Trans-forming social capital around water: Water user organizations, water rights, and nongovernmental organizations in Cangahua, the Ecuadorian Andes. *Society and Natural Resources*. 26 (1): 60-74.

Hoogesteger, J. (2014). *Los nuevos sujetos del agua: organización social y la democratización del agua en los Andes*. Quito: Abya-Yala

Hoogesteger, J. (2015). Normative Structures, Collaboration and Conflict in Irrigation; a Case Study of the Pillaro North Canal Irrigation System, Ecuadorian Highlands. *International Journal of the Commons*. 9 (1): 398-415.

Hoogesteger, J. (2016). NGOs and the Democratization of Ecuadorian Water Governance: Insights from the Multi-Stakeholder Platform el Foro de los Recursos Hídricos. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 27 (1): 166-86

Hoogesteger, J., Tiaguaro-Rea, Y., Rap, E. & Hidalgo, J. P. (2017). Scalar Politics in Sectoral Reforms: Negotiating the Implementation of Water Policies in Ecuador (1990-2008). *World Development.* 98: 300-309.

Isch López, E. & Zambrano, A. (2017). En torno a los resultados de la consulta prelegislativa sobre la Ley de Recursos Hidricos in Arroyo Castillo, A. & Isch López, E. (eds.) (2017). *Los caminos del agua*. Quito: Abya-Yala

Jasanoff, S. (ed.) (2004). *States of Knowledge: The Co-production of Science and Social Order*. Abingdon: Routledge

Joshi, A. & Moore, M. (2004). Institutionalised Co-Production: Unorthodox Public Service Delivery in Challenging Environments. *Journal of Development Studies*. 40 (4): 31-49

Korovkin, T. (2001). Reinventing the Communal Tradition: Indigenous Peoples, Civil Society, and Democratization in Andean Ecuador. *Latin American Research Review*. 36 (3): 37-67

Lam, W.F. (1996). Institutional Design of Public Agencies and Coproduction: A Study of Irrigation Associations in Taiwan. *World Development*, 24 (6): 1039-54

Lefeber, L. (ed.) (1985). *La economía política del Ecuador: campo, región, nación*. Quito: Corporación Editora Nacional

Llano-Arias, V. (2015). Community Knowledge Sharing and Co-Production of Water Services: Two Cases of Community Aqueduct Associations in Colombia. *Water Alternatives*. 8 (2): 77-98

Loeffler, E. & Bovaird, T. (2016). User and Community Co-Production of Public Services: What Does the Evidence Tell Us? *International Journal of Public Administration*. 39 (13): 1006-19

Mangai, M. S. & De Vries, M. S. (2018). Co-production as Deep Engagement: Improving and Sustaining Access to Clean Water in Ghana and Nigeria. *International Journal of Public Sector Management*. 31: 181–96

Martínez, L. (2002). *Economía política de las comunidades indígenas*. Quito: Abya-Yala

Martínez Novo, C. (2014). Managing Diversity in Postneoliberal Ecuador. *The Journal of Latin American and Caribbean Anthropology*. 19 (1): 103

McCarthy, M.M. (2012). The Possibilities and Limits of Politicized Participation: Community Councils, Coproduction, and Poder Popular in Chávez's Venezuela in Cameroon, M.A., Hershberg, E., & Sharpe, K.E. (eds). *New Institutions for Participatory Democracy in Latin America: Voice and Consequence*. Basingstoke: Palgrave McMillan

McGranahan, G. (2014). Realizing the Right to Sanitation in Deprived Urban Communities: Meeting the Challenges of Collective Action, Coproduction, Affordability, and Housing Tenure. *World Development*. 68: 242-53

McMillan, R., Spronk, S. & Caswell, C. (2014). Popular Participation, Equity and Co-Production of Water and Sanitation Services in Caracas, Venezuela'. *Water International*, 39 (2): 201-15

Meagher, K. (2013). Unlocking the Informal Economy: A Literature Review on Linkages Between Formal and Informal Economies in Developing Countries. WIEGO Working Paper No. 27, April 2013

Meisch, L.A. (1992). We Will Not Dance on the Tomb of Our Grandparents: 500 Years of Resistance in Ecuador. *The Latin American Anthropology Review*. 4 (2): 55-72

Migdal, J. (2001). *State in Society: Studying How States and Societies Transform and Constitute One Another*. Cambridge: Cambridge University Press

Miller, C.A. & Wyborn, C. (2018). Co-Production in Global Sustainability: Histories and Theories. *Environmental Science and Policy* (in press)

Miraftab, F. (2004). Neoliberalism and the Casualization of Public Sector Services: The Case of Waste Collection Services in Cape Town, South Africa. *International Journal of Urban and Regional Research*. 28 (4): 874-92

Mitlin, D. (2008). With and Beyond the State: Co-Production as a Route to Political Influence, Power and Transformation for Grassroots Organizations. *Environment and Urbanization*. 20 (2): 339-360

Mitlin, D. & Bartlett, S. (2018). Editorial: Co-production – Key Ideas. *Environment and Urbanization*. 30 (2): 355-366.

Moretto, L., Faldi, G., Ranzato, M., Rosati, F.N, Boozi, P.I., & Teller, J. (2018). Challenges of Water and Sanitation Service Co-production in the Global South. *Environment and Urbanization*. 30 (2)

Mosse, D. (1997). The Symbolic Making of a Common Property Resource: History, Ecology and Locality in a Tank-Irrigated Landscape in South India. *Development and Change*. 28: 467-504

Mosse, D. (1999). Colonial and Contemporary Ideologies of "Communal Management": The Case of Tank Irrigation Development in South India. *Modern Asian Studies*. 33 (2): 303-338

Navarrete-Hernández, P. & Navarrete-Hernández, N. (2018). Unleashing Waste-Pickers' Potential: Supporting Recycling Cooperatives in Santiago de Chile. *World Development*. 101: 293-310

Ostrom, E. (1972). Metropolitan Reform: Propositions Derived from Two Traditions. *Social Science Quarterly.* 53 (3): 474-93

Ostrom, E. (1996). Crossing the Great Divide: Coproduction, Synergy and Development. *World Development.* 24 (6): 1073-87

Ostrom, V. (1971). Institutional Arrangements for Water Resource Development. Technical Report, National Water Commission, Virginia

Pacari, N. (1998). Ecuadorian Water Legislation Analyzed from the Indigenous-Peasant Point of View. Boelens, R. & Davila, G. (1998). *Searching for Equity: Conceptions of Justice and Equity in Peasant Irrigation*. Amsterdam: Van Corcum

Pepinsky T.B., Perskalla J.H., & Sacks, A. (2017). Bureaucracy and Service Delivery, *Annual Review of Political Science*. 20:249-68

Perrault, T., Bebbington, A.J. & Carroll, T.F. (2001). *Organizaciones de riego y formación de capital social: el caso de Cayambe*. Bebbington, A.J & Torres (2001). *Capital social en los Andes*. H.V, Quito: Abya-Yala

Rubio, B., Larrea, F. & Campana, F. (2008). *Formas de explotación y condiciones de reproducción de las economías campesinas en el Ecuador*. Quito: Heifer International

Sánchez-Parga, J. (1989). *Faccionalismo, organización y proyecto étnico en los Andes*. Quito: CAAP

Sánchez-Parga, J. (2010). *El movimiento indígena ecuatoriano*. Quito: Abya-Yala

Swyngedouw, E. (1997). Power, Nature, and the City. The Conquest of Water and the Political Ecology of Urbanization in Guayaquil, Ecuador: 1880-1999. *Environment and Planning A*, 29: 311-332

Tamayo, C. (2015). *La acequia Mocha Huachi haciendo historia: proceso organizativo desde las bases*. Quito: Universidad Central del Ecuador

Vela-Almeida, D., Kolinjivadi, V. & Kosoy, N. (2018). The Building of Mining Discourses and the Politics of Scale in Ecuador. *World Development*. 103: 188-198

Wilde, M. (2017). Utopian Disjunctures: Popular Democracy and the Communal State in Urban Venezuela. *Critique of Anthropology*. 37 (2): 47-66

Wyborn, C. (2015). Co-productive Governance: A Relational Framework for Adaptive Governance. *Global Environmental Change*. 30: 56-67

Yashar, D. (2006). Ethnic Politics and Political Instability in the Andes. Drake, P.W. & Hershberg, E. (eds.) (2006). *State and Society in Conflict: Comparative Perspectives on Andean Crisis*. Pittsburgh: University of Pittsburgh Press

Zamosc, L. (1995). *Estadísticas de las áreas de predominio étnico de la sierra ecuatoriana*. Quito: Abya-Yala