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Decentralization, community participation, and improvement of water access in Mexico

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One of the most important responses to the decentralization process around the developing world over recent decades has been the call for community-based and participatory-based approaches to planning at the local level. Unfortunately, the results of these programs have often been disappointing, leading some scholars to call for more in-depth exploration of whether community participation can improve prospects for development. This paper explores the somewhat remarkable improvement in individuals' access to water in a low-income, indigenous community in one of the poorest states of Mexico, Oaxaca. The case study compares the community to others in Oaxaca and finds that the main distinguishing characteristic of the community is its history of collective action. The results suggest that the community's progress in the decentralized period is due to this advantage.

Keywords: community organizing; marginalized communities; rural community development; aboriginal/indigenous; water access

Introduction

One of the most important responses to the decentralization process around the developing world over recent decades has been the call for community-based and participatory-based approaches to planning at the local level (Chambers, 1997; Davis & Iyer, 2002; Narayan, Patel, Schafft, Rademacher, & Koch-Schulte, 2000). These approaches have led to a variety of initiatives aimed at increasing local participation in developing countries – lending for community development from the World Bank alone approached $7 billion in 2003 (Mansuri & Rao, 2004), and by 2012 had reached $30 billion (Wong, 2012). Unfortunately, however, the results of these programs have often been disappointing (Cleaver, 1999; Manikutty, 1997; Mansuri & Rao, 2011; Wampler, 2004).

It is likely that these negative results are due to a variety of factors, including the often criticized, relatively "shallow" conception of participation that is embodied in donor projects that try to create participatory governance. Indeed, when one takes a less project-oriented approach to participation and considers more sophisticated conceptions of community and participation, there are indeed some studies that suggest the benefits of community participation (Hickey & Mohan, 2005; Mason & Beard, 2008; Putnam, Leonardi, & Nannetti, 1993). For example, in their classic study of modern Italy, Putnam et al. (1993) showed that the capacity for local collective action was a key determinant of economic advancement for local communities. Nevertheless, especially

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in the context of the critique of participatory approaches, more empirical work is needed to demonstrate and explain how community participation can affect development outcomes.

In this context, this paper explores the somewhat remarkable improvement in individuals' access to water in a poor, indigenous community in one of the poorest states of Mexico, Oaxaca. In general, there is a negative correlation between the level of access to water in Mexican municipalities and the share of indigenous population in those municipalities (González Rivas, 2012). Nevertheless, this community has made significant strides, particularly in the decentralized period of Mexico's water governance. The case study compares the community to other communities in Oaxaca and finds that the main distinguishing characteristic of the community is its history of collective action, which is documented in detail. The results suggest that the community's progress in the decentralized period is due to this advantage.

The implications of such a link are potentially quite important, not only for understanding the potential of community participation, but also for understanding the effects of decentralization. Governments throughout the world have been decentralized over the past few decades, and decentralization of one form or another continues in many developing countries (Bardham & Mookherjee, 2006; Lago Peñas, Lago Peñas, & Martinez-Vazquez, 2011; Treisman, 2007). However, while the theoretical benefits behind this decentralization were supposedly clear, including more efficient public good provision and more representative governance (Inman & Rubinfeld, 1997; Oates, 1972; Tiebout, 1956), the results of the decentralization experiment have been less so. Indeed, even on a theoretical basis, the benefits claimed by decentralization's supporters have been questioned for almost as long as the reforms have been implemented (for early critiques see Bardham, 2002; Prud'homme, 1995; for more recent critiques, see Rodríguez-Pose & Bwire, 2004; Treisman, 2007). Empirical studies of the results of decentralization have, perhaps not surprisingly, come to a variety of conclusions.

If there is any consensus, it may be that the effects of decentralization depend on factors outside of the actual decentralization process, namely characteristics at the local level of government. Inherent to the decentralization process is a diminished ability (or willingness) of the central government to mediate inequalities among lower governmental units. At the same time, certain subnational units are likely to have advantages in the policy-making process (Bardham, 2002; Prud'homme, 1995; Rodríguez-Pose & Gill, 2005). These advantages may include, for example, having more influence than other units with regard to the central government, resulting in higher levels of federal transfers. Similarly, some subnational units may have less fiscal or technical capacity, so that certain governments are inherently better able to capture economic activity (Sirianni & Girourd, 2012).

This paper examines an additional factor likely to condition performance by subnational units in a decentralized setting: local participation and community organizing. In many ways, it may not be surprising that local participation should be linked to performance in a decentralized setting. Indeed, one of the fundamental logics of decentralization is that it moves governance to a level that is "closer to the people," so that citizens have a better opportunity to influence and monitor policy-making. However, as a variety of works have established, the ability for citizens to overcome their collective action problems and actually improve policy-making, as theories of decentralization assume, varies quite substantially (e.g. Beard & Dasgupta, 2006; Emery & Flora, 2006; Putnam et al., 1993). As a result, it seems likely that the areas that, for whatever reason, can

overcome collective action problems and organize as a community are likely to perform better in a decentralized setting.

If this is the case, it has interesting implications for the effect of decentralization on inequality. Since the various advantages that individual communities might have are likely to be highly correlated with one another (wealth, fiscal capacity, technical capacity, and so forth usually trend together), some scholars believe that the introduction of decentralization should result in increasing inequalities across regions in different countries (Ezcurra & Rodriguez-Posé, 2013; Rodríguez-Pose & Ezcurra, 2010) and especially in developing countries (Lessman, 2009). By contrast, capacity to organize is not necessarily correlated with wealth, as the case study in this paper demonstrates. As such, it may be possible for participatory capacity to offset the increases in inequality that have been found by scholars in decentralized developing countries (Mansuri & Rao, 2011).

To begin to examine these dynamics, the next section provides a brief overview of the evolution of water policy in Mexico, from a centralized system during which the federal government played the dominant role in the development of water infrastructure, to the decentralized system, under which state- and local-level governments are expected to make important contributions to water projects. The section highlights the role that local communities play in the decentralized system, opening the possibility for local collective action to play a role. Section three then discusses the experience of San Bartolomé Zoogocho and the surrounding area of Villa Alta District, which has made great progress in water services. As the evidence in that section suggests, it is difficult to explain this progress without reference to the community's historical ability to organize itself and produce community projects. The final section offers a conclusion.

Changes in water planning in Mexico

The decentralization of water policy (along with many other public services) took place in Mexico in the early 1980s and 1990s. This decentralization reform had limits – the federal government has been the major financier of water infrastructure projects during both the centralized and decentralized periods. However, marked changes have occurred with regard to the provision of water services, such as the approval of local projects and the administration and operation of local drinking water systems. This section describes how the locus of these activities has changed during the decentralized period, with implications for how levels of community participation will affect water provision.

Prior to decentralization, Mexico had long been a highly centralized state in which the federal government not only financed water infrastructure projects but also was in charge of approving, supervising, constructing, administering, and even operating local water projects (Collado, 2008).[1] Supposedly this dominance had its limits, especially as the Mexican Constitution stipulated that local governments bore responsibility for water and other services. For example, the water system was supposed to be administered by the federal government through the Secretariat of Hydraulic Resources (SRH) only until the costs of the investment had been recouped, at which time the administration of water system would shift to the local-level government. In addition, the 1972 Water Law stipulated that communities could make contributions toward water projects, for example by supplying labor for the project. In reality, however, this sort of shared responsibility and funding seldom materialized. Administration of the water system was usually kept at the federal government (Rodríguez Briseño, 2008), and the federal government (through the SRH) would usually bear, partially or in its entirety, the costs of materials and technical advice of the project.

As part of the decentralization reform in the early 1980s, the federal government transferred the responsibility for water projects and services to states and municipalities. However, even after decentralization, the federal government still contributes up to 48% of the financing of water infrastructure because the reform was not accompanied with a decentralization of public finances.[2] Nevertheless, while the federal government's National Water Commission occasionally implements its own projects directly, the predominant way of financing water infrastructure is through joint projects with states and municipalities. In particular, these joint projects require financial and organizational cooperation from the municipality, and this suggests that local-level characteristics matter more under a decentralized system. For example, in urban areas (defined as areas that have more than 2500 inhabitants), the water "operating body" (*organismo operador*) are responsible for water service provision (and sewer and water treatment operations), as well as the initial financing of operational and maintenance costs. They also need to be capable of financing any debt acquired to finance the costs of the expansion of water infrastructure.

In the case of rural municipalities, federal guidelines for investment projects require that a Regional Commission be formed, in charge of execution, control, and follow-up of programs of water provision (as well as sewer and water treatment). These commissions also have to solicit the project from the federal government, basically providing evidence that there is demand for the infrastructure. In addition, communities have to sign an act stating that they approve of the project (this act is called a "Community Acceptance Act," done through a community committee, Diario Oficial, 1999).

In sum, the decentralization reform in Mexico has put much more responsibility on *local* planning and action in water projects than was present in the centralized system. Though the reform has not effectively devolved the financing aspects of water infrastructure, and communities participated in water projects during the centralized period (by contributing labor, for example), in the decentralized system water policy requires increased coordination of governments at the federal, state, and municipality levels. To access federal funds, most municipalities need to make proposals to their states for projects, usually accompanied by promises of their own resources (in-kind contributions or labor) that will be dedicated toward the project. State governments then decide which of their municipalities qualify for particular federal programs and make decisions based on eligibility criteria and technical feasibility studies.[3]

The key implication under the current system is that local characteristics matter. Because the decentralized system requires proposals and financing from municipalities, municipal characteristics should have a great effect on whether or not those municipalities are able to make progress on water access. The implication is that inequality may arise because municipalities with better financial and technical capacity will be able to put together and finance better project proposals. As mentioned in the introduction, this has been argued in the existing literature on decentralization (Bardham, 2002; Prud'homme, 1995). And indeed, we observe these vast differences in Mexico across the municipal water operating bodies. Richer states tend to have operating bodies with better technology and capital than those of poorer states (Censo de Organismos Operadores de Agua, various years; Instituto Nacional de Estadísticay Geografía [INEGI], 2004).

It may also be the case, as discussed in the Introduction, that municipalities with better collective action capacity will tend to do better, as they will be better able to put together effective proposals to request government funds. The process of putting together proposals is not only highly complex, but can also present challenges for communities to act collectively. Applications to receive federal government funds go

through the state governments, which are in charge of approving and validating the different studies that municipalities carry out: feasibility, quality of water, water source availability, social feasibility, work plan, etc. In all of these, the state government makes sure eligibility criteria are in place when selecting the places (localities) that will be the beneficiaries of investments. At the local level, a Community Acceptance Act (through a community committee) is required. This can be challenging for communities because sometimes, due to financial caps, proposals have to prioritize some aspects of the project over others, initially benefiting some areas of the town more than others. This implies benefiting some groups before others. Communities with high collective capacity could see this as one phase of a longer term project, but in places where there are lower levels of trust groups might not be able to come to agreement.

To examine the effect of community characteristics on this process, the next section turns to a case study of certain municipalities in the southern state of Oaxaca.

The experience of Villa Alta

The discussion in the previous section showed that one of the key implications of the decentralization of water planning and policy from the central to the municipal level is that municipal characteristics are likely to matter more in terms of progress in water access than they used to. In general, municipalities with better financial and technical capacity will tend to benefit more from the new rules and regulations. One would expect, therefore, that municipalities that have been for the most part marginalized in the past may even fall farther behind under the current system. Certainly this seems to be true in general for indigenous municipalities, which have historically had quite low levels of water access (González Rivas, 2014).

Nevertheless, given the importance of local collective action in producing proposals for water projects in the decentralized period, it is also possible that communities with higher levels of community participation will be able to produce better improvements in water access than one would expect, even in poor and marginalized indigenous communities. In order to illustrate this dynamic, this section describes the case of San Bartolomé Zoogocho, an indigenous municipality in the southern state of Oaxaca. The analysis synthesizes information from various sources, including field research in Oaxaca City and San Bartolomé Zoogocho (henceforth SBZ) during the summer of 2010, where interviews with members of the community, municipal authorities (past and present), and academics were conducted. The analysis also includes fieldwork that took place in Los Angeles, California, in the summer of 2011, during which members of the community that have migrated from SBZ were interviewed. In addition, the analysis draws on archival information from the Water Historical Archive in Mexico City, academic scholarship, and personal diaries from members of the town.

San Bartolomé Zoogocho is a Zapotec indigenous community of approximately 400 people, located in the Northern mountainous regions of Oaxaca (in the center of Sierra Norte), in the District of Villa Alta (see Figure 1). The Villa Alta District in Oaxaca is composed of 25 small, rural municipalities, mostly ranging from a few hundred to twelve hundred people, of which most are indigenous people.[4] The area is predominantly agricultural, consisting of small-scale production of maize and beans. The district has difficult terrain (a large share of the area is forest) and is prone to flooding and severe mudslides during the rainy season. Until relatively recently (about 40 years ago), it had been largely isolated due to the little communication to other parts of the state. Not surprisingly, the region's municipalities have low levels of income.

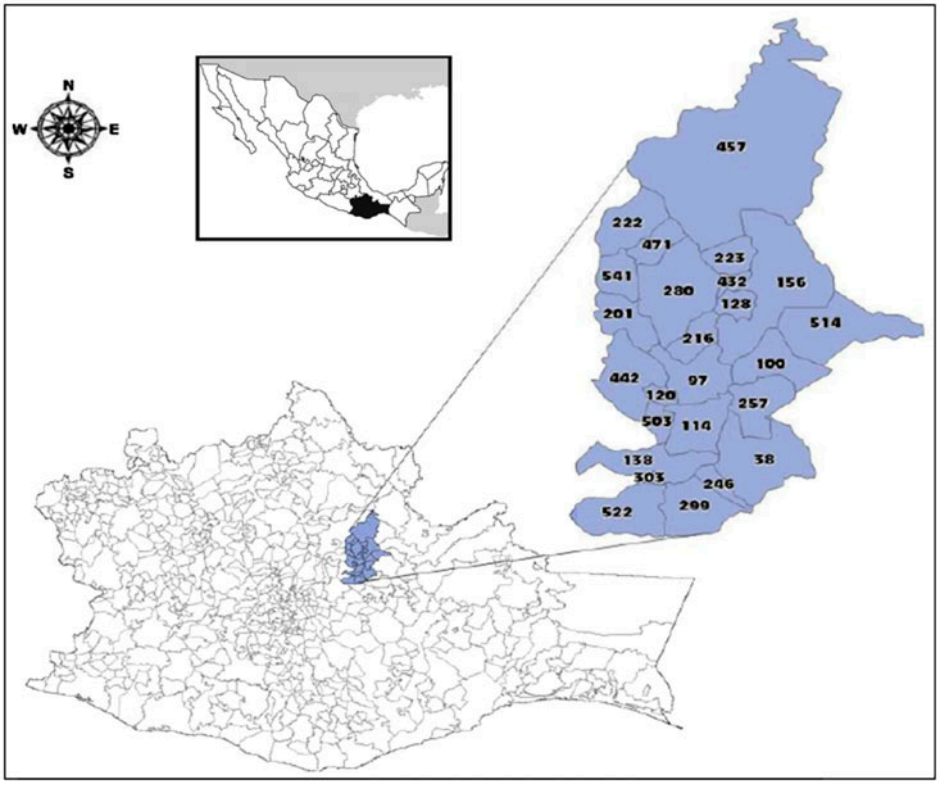

Figure 1. Map of Villa Alta District, Oaxaca, Mexico.
Source: State Office for Rural Development, Map of Villa Alta District.

For the purposes of this paper, what distinguishes this community is the rapid progress it has made in water access in the decentralized period, reaching close to full coverage in terms of housing connected to the water network, as Figure 2 shows. In

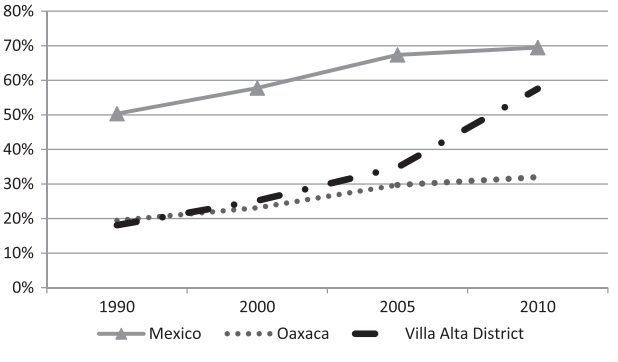

Figure 2. Evolution of average water access in Mexico, Oaxaca and Villa Alta District, 1990–2010.
Source: Own calculation with data from INEGI (1990, 2000, 2010) Population and Housing Census; INEGI (2005) Population Survey.

2010, the average water coverage in Mexico was 69%, and the average for Oaxaca was 32%; the average for the Villa Alta District was closer to the national mean than it was to the Oaxaca mean.

Very little about the Villa Alta District, or specifically SBZ, would lead one to predict this sort of achievement in a decentralized setting as it has neither the wealth nor the technical or fiscal capacity that has been associated with progress in the literature. As Figure 3 shows, Villa Alta District has lower levels of wealth – as reflected in the share of housing units with dirt floors – than other municipalities in the state and the country. The District has not been in general a big recipient of federal transfers[5] compared to other municipalities (see Figure 4) and its literacy rates similarly do not distinguish it in any way, as reflected in Figure 5. Table 1 compares the socioeconomic characteristics of Villa Alta District with the state and nation for 2000.

If Villa Alta did not have greater technical or financial capacity, what can explain its progress in water access? Though the evidence presented here is only suggestive, it seems possible to attribute some of this progress to the community's ability to work together for the good of the district. The community is known in the region for this ability. As one observer put it, "In the state, they are famous for being organized."[6]

Some of the projects for which the community has worked collectively include the following[7]:

- *Building infrastructure for basic services.* From 1946 to 1951, the community built the elementary school, and then in 1967 the community built the first basketball court, which was rebuilt in 2009 with collaboration between the community, migrant associations, and federal government funding. In 1971 and 1972, the buildings for the telegraph office, post office, and municipal government offices were finished respectively. In 1977, the area of the market was built, improving its functioning and storage capacity. SBZ gained the permanent status of holding the only weekly market in the region since 1807, which several thousand people have attended every week since then. It historically has constituted the largest weekly market of Villa Alta District (Lewis, 1974). In 1980, another community building was finished for public bathrooms.

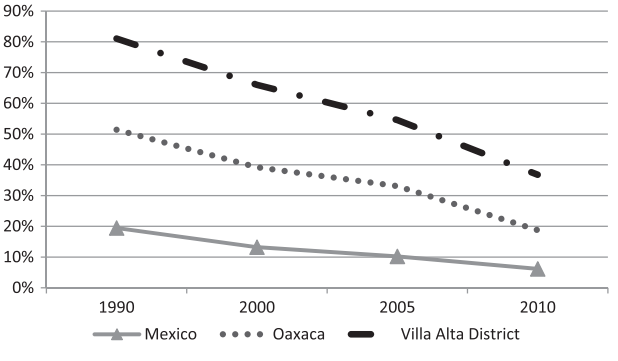

Figure 3. Evolution of the share of housing units with dirt floor.
Source: Own calculation with data from INEGI (1990, 2000, 2010) Population and Housing Census; INEGI (2005) Population Survey.

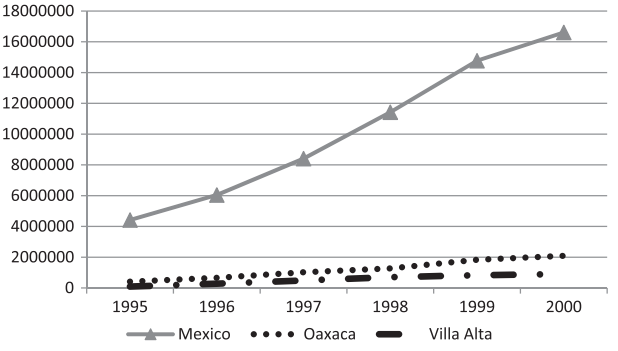

Figure 4. Evolution of average non ear-marked federal transfers (*participaciones*) to municipalities, 1995–2000.
Source: Own calculation with data from INEGI (1990, 2000, 2010) Population and Housing Census; INEGI (2005) Population Survey.

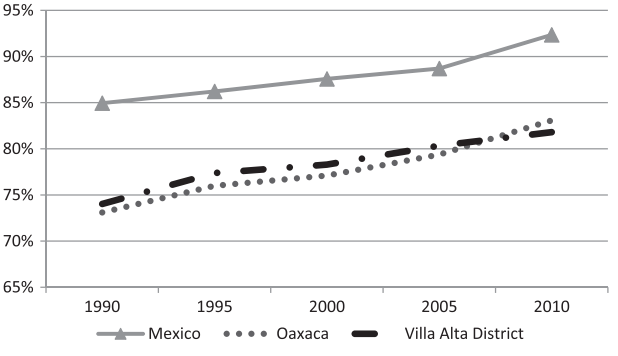

Figure 5. Evolution of the municipalities share of people 5 years and older that is literate.
Source: Own calculation with data from INEGI (1990, 2000, 2010) Population and Housing Census; INEGI (2005) Population Survey.

- *Building transportation infrastructure.* In 1948, the community worked on the trail to connect to the main road to Ixtlan that goes to Oaxaca City, finishing it in 1951 (Beltrán Morales, 1982). In 1984, the first dirt road was finished, and by 1996 it was finally paved, these last two through a combination of state financing and community work.
- *Arranging/negotiating to obtain public services from government investment.* In 1970, the public lighting project was inaugurated in the town; in 1999, the town obtained a rural telephone line, and in 2002 domestic telephone lines. In 2004, the Commission for Indigenous Development carried out the town's sewer system project, with support by state government, the migrants' association, and community labor or *tequio* (see Appendix 1 for a discussion on community governance).
- *Regional Boarding School of Music*. In 1952, the school was relocated to SBZ, when the buildings were finished (only a few such schools exist in the state, and hosting it is a prestige for the community). In 1967, ex-president Lázaro Cárdenas inaugurated it, and in 2009 it was reconstructed by the community with the help of various private foundations.

Table 1. Municipalities average of various socio-economic indicators for Villa Alta District, Oaxaca, and Mexico as a whole.

	Mexico	Oaxaca	Villa Alta
Total population	97,483,412	3,438,765	31,812
Share of population 15 years and older that is illiterate	9%	21%	22%
Share of population 15 years and older that have not completed elementary school	28%	46%	56%
Share of people in occupied housing units without drainage services and private toilet	10%	18%	19%
Share of people in occupied housing units without electricity	5%	13%	6%
Share of people in occupied housing units without access to piped water	11%	27%	3%
Share of housing units with some level of crowding	46%	60%	50%
Share of people in occupied housing units with dirt floors	15%	42%	66%
Share of total population living in places smaller than 5000 people	31%	64%	100%
Share of employed people living on income of up to two minimum wages a day	51%	72%	92%

Source: CONAPO, Índice de marginación por municipio (marginality index by municipality), 2000.

It is important to note that the projects mentioned above have all been carried out through community work or *tequio*, as well as with financial cooperation from people of the town and from associations formed by people that have emigrated to Mexico City and Los Angeles. Even when the federal and state governments have participated in many of these projects – providing financial, material, or technical assistance – it has been the result of the communities' work via formal application and negotiation for that assistance.

Each major project is generally the result of a community consultation process guided by the municipal administration. Each administration lasts only one year and has a narrowly defined agenda – basically focusing efforts and resources on a particular infrastructure project. The nature of the project depends on two main factors. The first is the decision made by the community in an assembly at the beginning of the term (usually held in January), in which the new administration makes several proposals, each with a detailed account of the money required to execute it. The community decides which project to undertake. The second factor is the amount of resources that are gathered by the community to execute the project. Resources for community projects have sometimes come from the government – after the community groups conduct the necessary paperwork and negotiations – but the migrant associations of the town have consistently contributed to the execution of these projects.[8] Migrant associations also hold meetings, and after discussing the proposed project members vote and decide how much to contribute, continuing their participatory tradition. Projects are then completed through *Tequio* or community labor (see Appendix 1 on community governance).

The projects listed above reflect essential skills that the community possesses, which has also been reflected in their work on water. The first water hydrant was established in the main plaza of SBZ in 1914, with the aim to provide water to the merchants of the town. It was not until 1963 that the then-Municipal President and his collaborators formed a Pro-Water Introduction Committee, which was in charge of filing the paperwork required to get federal government assistance in the construction of the water network. It took them several months, due to the lack of knowledge about the process

of submitting proposals to the relevant authority, which then was the Papaloapan Commission.[9]

In September 1963, they received an official answer from the Commission, followed by engineers visiting the town, first to observe the water springs and then build water tanks through 1966. The project was to build a network from the center of the town, to which individual households would connect. According to the official record of the project, the community assumed 42% of the total costs.[10] The town contributed financially and also covered 15% of their share with contributions from the migrant association in Mexico City.[11] In addition, much of the labor used in the construction of the project was done by the community. One of the interviewees remembers that "the water pipes were carried on the backs of people from Las Maravillas (a nearby town) to the water spring in the mountain."[12]

In 1977, the National Institute for Indigenous Affairs convoked a meeting in SBZ and neighboring towns to ask permission to use the water of one of the nearby creeks to supply water to some of the towns in the area that still had no direct access. In the meeting, all towns accepted the new project, as well as their contribution (in-kind labor and financial contributions). In Zoogocho, the waterworks needed to be replaced because the original network, built in 1963, had been built with asbestos pipes. The new project would use galvanized tubes and a new water source, and it would be a larger system to include nearby towns. In 1978, community work (*tequio)* was used to clear the path for the new water system, which was finished in 1979, and households began to connect to it. However, it was in 1986 that new water pipes were set in the mountain to connect to other parts of SBZ which had not been reached yet; these new water pipes really made the difference in the expansion of the services to the majority of the households in the town. Once again, the labor was carried out through *tequio*, or community work. Table 2 shows the evolution of water access in SBZ.

According to the different interviewees, since approximately the late 1980s, most housing units have been connected to the water network. Thus, it is not surprising that more recent efforts related to the water system have been mainly focused on cleaning the water pipes that from time to time (every two years or so) would get filled with mud. Cleaning of the water pipes is also done through *tequio,* or community work.[13] Other recent efforts related to the water system are about improving the quality of water. In 2010, the municipal president requested help from a local health sector office with the treatment of water from the source to make sure the water the town consumed was clean and drinkable.[14]

Community collective action remains strong in the town, as the town has kept the pace of working toward community infrastructure projects beyond water infrastructure (the community has basically achieved universal connection of water services within the

Table 2. Evolution of water access in San Bartolomé Zoogocho, 1960–2010.

Classification of water access	1960	1970	1980	1990	1995	2000	2005	2010
Total number of housing units	179	393	248	155	154	125	125	131
With water access in the housing context (inside and outside building)	2	8	33	117	144	120	118	128
Share with water access in the housing context	1%	3%	13%	75%	94%	96%	94%	98%

Source: Own calculation with data from INEGI (1960, 1970, 1980, 1990, 2000, 2010) Population and Housing Census. INEGI (2005, 2010) Population Survey.

context of households). One of the most recent projects was a major building in the center of the town, which includes a community assembly room where the town holds their community meetings and other gatherings, as well as a covered (roofed) basketball court in the center of the town.

The long tradition of community collective action in SBZ over the years has resulted in material gains for the community, and now the local government is quite familiar with the process of accessing funds and resources from the federal and state government. It seems plausible that this long history of community participation has given it a particular advantage in the decentralized policy-making system that has characterized Mexico for the past several decades. As discussed above, SBZ's experience is reflective of the broader Villa Alta region, and although Villa Alta District's direct access to water is well below the national average its level is well above the average of the state. In this context, SBZ's achievement of almost full water coverage is truly remarkable; notably, this progress has mainly been made in the decentralized era.

Conclusion

As discussed in the introduction, the goal of this paper has been to revisit some of the arguments relating participation to better development outcomes, in the context of skepticism about whether community participation can make a difference. The paper has provided an explanation of the decentralization process with regard to water in Mexico and demonstrated that the new system should give great advantages to municipalities with strong skills in community action. It then described the case of San Bartolomé Zoogocho, a community in Oaxaca whose success in the provision of water is difficult to explain other than with reference to its strong history in community organizing.

It is important to note that I am not arguing that all is well in San Bartolomé Zoogocho. While the community remains very active in organizing for producing common outcomes, the structural conditions in the region surrounding the town have not changed in order to prevent out-migration, which has been taking place since the 1940s. Interestingly, out-migration seems to have strengthened the community action in the town, through remittances, knowledge, and information.[15] However, SBZ faces a major challenge in that most of the community is living outside the town (in Oaxaca City, Mexico City, and Los Angeles, California). Even though the community remains closely connected to the town and facilitates public good provision, its members have little chance of returning home, due to the lack of economic opportunities. In fact, one of the interviewees stated that it was ironic that "now that the town has more financial resources, the problem is that there are no people."[16]

Nevertheless, SBZ and its surrounding region have performed much better than the rest of Oaxaca in recent decades, arguably as a result of its community organization capacity. There are a variety of theoretical reasons why this makes sense, as discussed above, but empirical studies have had a difficult time demonstrating these sorts of results. It is hoped that this paper will therefore be seen as a contribution to the empirical literature attempting to re-link participation to development outcomes.

Notes

1. The Federal Waters Law of 1972 concentrated into one piece of legislation all existing laws and regulations related to water, including all aspects related to the drinking water network. This law stated that the federal government was in charge of the planning, execution, and operation of infrastructure for drinking water.

2. Federal financing depends on the level of marginalization of the municipality, for details see page 54 of Diario Oficial (1999).
3. One key aspect of the rules of operation of 2003 is the emphasis on each level of government financing (as opposed to the centralization period). The 2003 rules of operation state that in those municipal governments that do not contribute their share in projects, federal resources will be reallocated to other states (Diario Oficial, 2003).
4. In the Villa Alta District the average share of municipal population that speaks an indigenous language is 88%, whereas that for the entire state is 40%.
5. Figure 4 shows the evolution of general federal transfers that are not specific to a particular spending sector, or *participaciones*.
6. Phone Interview, Dr Jorge Hernández, 10 June 2010.
7. This section is based on Beltrán Morales (1982) as well as information from various interviews conducted in the town in the summer 2010, including the Maestro Pedro Ríos Hernandez, Samuel Terezo, and Flavio Robles.
8. The lack of economic opportunities gave rise to migration from the town, which started during the 1940s when people migrated to Oaxaca City, then Mexico City, and later on to Los Angeles, California. The first migrant association of the town was created in 1951 in Mexico City (called *La Union Fraternal Zoogochense*), and the association in Los Angeles was created in 1969 (called *La Union Social Zoogochense*). The contributions of the migrant associations have been a crucial aspect of the capacity to carry on the development projects of the town.
9. The response in 1963 of the Papaloapan Commission was the consequence of the efforts of many SBZ authorities that had requested the services before. In 1963, Felipe Robles and Teacher Román Cervantes y Cristóbal were advised on how to do the paper work to initiate the water project. Phone interview Prof. Claudio Ríos, Municipal President 2011.
10. Archivo Histórico del Agua, Fondo Documental de la Comisión del Papaloapan, Caja 92, Expediente 1201. Memoria descriptiva de las obras de introducción de agua potable al pueblo Zoogocho.
11. Based on the personal record of Flavio Robles.
12. Interview with Salomón Ríos Guzmán, Municipal President in 2009 and who had a low-level cargo of duty in 1963.
13. Several of the interviewees had been part of these efforts at least once; for example, Eduardo Santibañez.
14. Interview with Salomón Ríos Gúzman, 10 August 2010. The municipal president was expecting people from the office of health sector from Tlacolula on 16 August 2010.
15. It is important to note that this paper does not state that migration has not been a burden to the community itself. The fact that people have to migrate in search of economic opportunities represents itself a huge cost for individuals and the community. For example, Ramos Pioquinto (1991, 2008) argues that migration challenges the Cargo system. Thus, it is important to not underestimate the costs of migration. Also, Ove Trans describes the sacrifices of the migrants, Trans (2009).
16. Interview with Prof. Donato Ramos Pioquinto in Oaxaca City, 9 August 2010. Dr Donato was Municipal President in 2009.

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Appendix 1. Traditional governance system in San Bartolomé Zoogocho

SBZ is governed by a traditional *Sistema de Cargos,* or *Cargos System,* and *Tequio,* which are communal assistance arrangements under which all community members are expected to contribute or help. In SBZ, there are no formal institutions but there are a set of informal rules and traditions that are closely followed. These rules and traditions incorporate all aspects of life – economic, social, cultural, recreation, religious, administrative – not just political.

Cargos are public positions that all citizens are expected to fill. In reality, in many communities it is only adult males who fill these cargos, as in SBZ. The Cargo System includes a series of hierarchical ordered public positions devoted to a whole array of aspects of the community life, etc. –each cargo lasting one year. The hierarchy of duties or cargos basically orders the cargos by level of commitment and complexity of each of the cargo. It is argued that the hierarchy of the cargos is also a way for the man to become familiar with the system and context, as well as for the community to get to know the individual. The basic cargos do not give authority to the individual and are

mainly service-oriented, such as participating in commissions like cleaning roads, cleaning the water system pipes, and other small projects. Cargos with more authority (and responsibility) are those like municipal president, treasurer, or secretary. Thus, the system of cargos is based on indigenous culture of community service (no position receives a salary) "in exchange for individual prestige and status inside the community" (Ramos Pioquinto, 1991, p. 316).

The cargo system works under the *Usos y Costumbres,* which is another indigenous tradition. *Usos y Costumbres* is the selection of local leaders via customary rule or traditional election practices (as opposed to the selection through multiparty systems and secret ballots). Under this system each community selects local officials according to traditions and culture, ranging from inclusionary community assemblies where community members participate, to more exclusionary selection processes like council of elders meetings, as is the case of SBZ.

The *Consejo de Ancianos,* or Council of Elders, in SBZ, is composed of a group of leaders of the town considered honorable men; they propose the people that will take the duties or cargos in the second Assembly (in August).

The cargo system is obligatory for every member of the community. In SBZ, only male members of the community can fill cargos, and there are consequences for those that do not follow through, which range from social punishment to actual dispossession of land in the town. However, in SBZ this has never happened (according to the interviewers), and most people accept the cargo, and those that do not basically suffer the social isolation of the community. Women participate indirectly by bearing the burden of household responsibilities while men are filling cargos. Eisenstadt (2007) discusses that in general, the role of women in these traditional governance systems is mostly taking care of household chores and family care, and it is valued in the community. For the specific case of SBZ, Beltrán Morales (1982, p. 32) and Ramos Pioquinto (1991, p. 316) state that the role of women in some cases, like single women, divorced, or widowers, support community projects, helping the men who are working in *Tequio* (collective work) for community projects by providing materials (cement), food, or contributing financially.

The exclusion of women from directly participating in traditional governance structures has been one of the key criticisms against these systems.[17] However, in SBZ, although the participation process is not ideal (as women do not attend or vote in the assemblies) the community participation process is more inclusive, because in one way or another all members of the community participate in the projects, and the rules are transparent. This is a key point, as the town has a reputation of being free of corruption scandals. Projects that are started get finished, and as the community has achieved results through time, it has let them to a path of success, allowing them to replicate results through time.

[17]See for example, Fox, 2007 and Eisenstadt, 2007 who argue that these systems are far from inclusive to all members of the community, as often women, young people, and communities not living in the center of municipalities have been excluded from participating in assemblies and voting. In addition, the lack of transparency of rules and their discretionary changes have often benefited those holding power.