Water conflict, social pressures, and management in Mexico City

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Introduction

Social pressure and protests have increased in practice as a response to environment and water related issues in Mexico City since the 1980s (Castro, 2004). Motivations to protest vary spatially by water issue and how decisions are made. In our study, we seek to understand the role of social pressure in decision-making to reduce vulnerability to water issues.

Hypothesis

We expected to see an evolution of causes of conflict from traditional issues like infrastructure failure to distribution and use (Kloster 2014). We also expected to see protests to be concentrated in periurban areas.

Causes of protest

Traditional and emerging causes

Water Scarcity Lack access to water necessary for basic needs, due to availability, quality of reliability of supply	Infrastructure failure Deterioration or collapse	Water Price Problems Water supply or provision is out of accessible price range
Problems with Distribution Deviation of water supply to another region or population	New Construction Construction of new buildings (apartments or commercial businesses) or new infrastructure (pipes)	

Methods

We used media reports of protest and conflict interactions between residents their targets (government and private businesses) from 2011-2015. We coded 43 articles covering 41 different events from *La Jornada* for location, causes of conflict, and any allegations of corruption or illicit behavior.

Objective 1

- Identified main causes of conflict and calculated their frequency over the 5 year period
- Displayed frequency relative to each cause

Objective 2

- Identified and coded location of event
- Analyzed spatial distribution

The poster is part of the larger MEGADAPT project whose purpose is to understand socio-ecological urban water systems. We seek to understand if and how social pressure and conflict initiate feedbacks within the socio-institutional system.

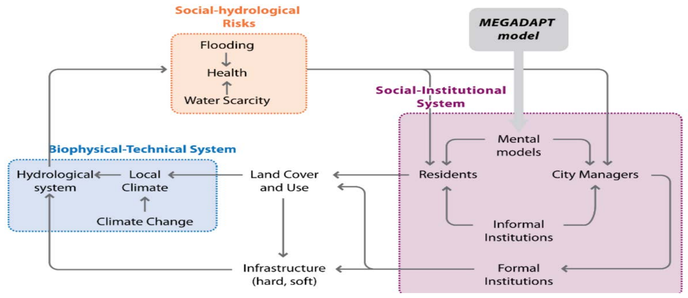

Image 1. MEGADAPT model and urban water system

Objective 1. What kinds of problems motivate protest?

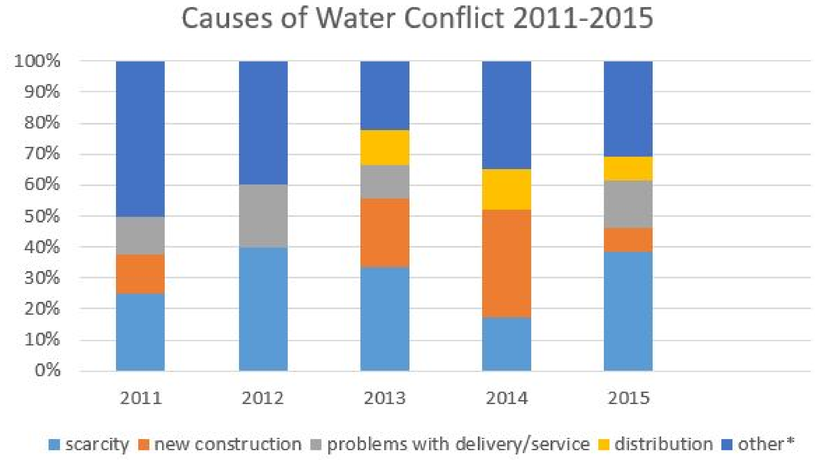

Figure 1. Relative frequency of causes of water conflict

Objective 2. Within which municipalities are protests occurring?

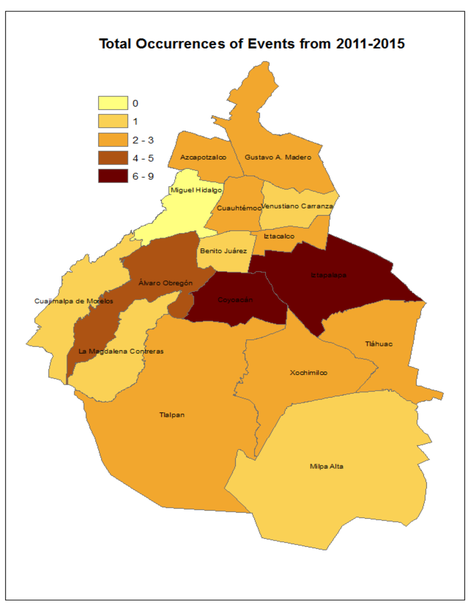

Figure 2. Location, 16 delegations of Mexico City, more protests occur in high density areas in the periurban region

Study Area: "Ciudad de México" (CDMEX)

CDMEX's has always suffered from the twin challenges of water scarcity and flooding. Our parameters are limited to the 16 delegations of Mexico City

Findings

Water scarcity has been a leading cause of protests in the five year period 2011-2015. New constructions also emerged as a frequent causes. Causes also tend to be co-associated. Two-thirds of protests about new constructions correlated with a lack of water either as a) demand for improved infrastructure or b) fear that a new construction would divert water from a community. Over the last few years, Mexico City has been pursuing a policy of "densification", which has been controversial in terms of housing prices, congestion and infrastructure capacities.

According to the map, protests occurred more frequently in the central and eastern periphery. We speculate this is a result of urbanization occurring in areas of already dense and impoverished populations with poor water services. These areas are consistent with Castro's findings (2004).

Just over 28% of protests were associated with allegations of corruption or improper public sector action. We speculate that social class and political party affiliation affect the effectiveness of social pressure in terms of the investment in water management in response to protests. Nevertheless, the data source was insufficient to provide evidence of protest effectiveness.

Next steps

We seek to understand how and if social pressure influences decision-making to reduce vulnerability to water issues; we will do this through agent-based modelling.

Citations

Kloster, K.B. 2014. La disputa por el territorio político del agua en México: 1990-2000-2010. *Tercer Congreso Red de Investigadores Sociales Sobre Agua*.

Castro, J. E. (2004). Urban water and the politics of citizenship: the case of the Mexico City Metropolitan Area during the 1980s and 1990s. *Environment and Planning A*, *36*(2), 327-346.