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The Influence of Legitimacy Perceptions on Cooperation – A Framed Field Experiment

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Summary. — Decentralization of irrigation management is claimed to improve performance by enhancing legitimacy and, thus, increasing cooperation. We test this hypothesis by collecting information about water users' legitimacy perceptions and assessing the impact of these perceptions on irrigation charge payments and behavior in a framed field experiment. Our results show that legitimacy perceptions differ between communities and between water users association members and non-members but that these differences do not explain charge payments nor behavior in the irrigation treatment of the game. We conclude that decentralization may enhance legitimacy perceptions but that this does not necessarily increase cooperation in irrigation management.

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Key words — framed field experiment, public goods game, irrigation management, legitimacy, water users association

1. INTRODUCTION

Decentralization of public services is claimed to improve performance (Bardhan, 2002). The literature points to two main reasons for this claim. First, service users have a direct stake in better functioning public systems and possess better information about who is failing to contribute and what the problems in public service delivery are (Bardhan, 2002; Mansuri & Rao, 2004). This gives them an advantage over more distant government agencies, traditional examples of community-based management indicating that users are well capable of managing public goods and services effectively themselves (Meinzen-Dick, Raju, & Gulati, 2002; Ostrom, 1990; Wade, 1988). Second, decentralization implies that users obtain partial authority to collect contributions, allocate services, and make decisions regarding the maintenance of the public good. This obtained authority is claimed to increase the legitimacy of public good management and to make users more willing to cooperate in public good maintenance because “when people regard an authority as legitimate they feel they ought to defer to decisions and rules, following them voluntarily out of obligation rather than out of fear of punishment or anticipation of reward” (Tyler, 2006).

This paper considers the second argument, that decentralization improves legitimacy and thus enhances cooperation, in the context of irrigation management in India. The objective of the paper is to assess whether different perceptions of the legitimacy of irrigation management have real impacts in terms of people's cooperation in irrigation management, cooperation measured in terms of charge payments, and contributions in a field experiment.

The claim that decentralization increases legitimacy, and thus enhances cooperation, is not uncontested (cf. Cochran

& Ray, 2009). A recent special issue in this journal covered the many ways in which decentralization can influence governance arrangements (e.g., Faguet, 2014), which may either increase or reduce legitimacy. Also, the claim that increased legitimacy improves cooperation is not uncontested, empirical analysis of common pool resource management suggesting that the perceived legitimacy of institutional arrangements is only one out of many factors that play a role in this respect (Agrawal & Chhatre, 2006; Baland, Bardhan, Das, & Mookherjee, 2010). Still, legitimacy is regarded to be an important factor when considering people's willingness to cooperate, at least when considering irrigation management. For example, Mollinga (2000) argues that the reduced legitimacy of top-down irrigation management in India has been an explicit reason to decentralize irrigation management to water users associations (WUAs) and Gorton *et al.* (2009) find that improved legitimacy because of decentralized management was the main reason for better irrigation system performance in Macedonia.

Although cooperation may take many forms, like control of water theft (Ray & Williams, 2002; Wade, 1982) or regulation

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and monitoring of water allocation (Bardhan, 1993, 2000), in this paper we limit ourselves to water users' willingness to cooperate in charge payment. We focus our analysis on five villages located at the head-end of an irrigation system in rural Maharashtra, India. In two of these villages, the irrigation department is in charge of irrigation management, while in the three remaining villages, this task has been decentralized to WUAs. Given that villages (and villagers) self-select into forming a WUA, we cannot determine the causal relationships between decentralization, WUA membership, and legitimacy perceptions. We can, however, compare legitimacy perceptions between WUA members and non-members, and assess whether differences in legitimacy perceptions affect the willingness of water users to cooperate in irrigation management.

In order to understand why legitimacy perceptions may differ between water users it is important to understand how decentralization may influence perceptions of legitimacy. Weber (1968) distinguishes between legitimacy based upon deterrence to customs and values (shared values and norms), legitimacy based upon devotion to actions or character of an authority (shared vision), and legitimacy linked to the process of rule implementation and interpretation (procedural justice). Given that decentralization of irrigation management implies a change in rule implementation and interpretation, i.e., devolving decision-making power from the irrigation department to the WUA, we expect to see differences in perceived procedural justice between WUA and non-WUA villages. We expect this to influence cooperation levels in line with the work of Dayton-Johnson (2000) who found that differences in perceived representation in decision-making and rule establishment influence cooperation in irrigation management. Whereas Dayton-Johnson focused on how socio-economic heterogeneity influences cooperation through perceived representation in decision-making, in our analysis we take socio-economic heterogeneity as given (i.e., we assume this does not change as a result of decentralization) and instead focus on how decentralization as such influences legitimacy perceptions of irrigation management. Clearly, there may be an additional influence of socio-economic heterogeneity on perceived legitimacy, which we account for in the analysis and reflect on in the discussion of results.

Alternatively, subjects may differ in their visions with regard to the desirability of decentralization: WUA members voted in favor of decentralization and may view the WUA as more legitimate than non-members. This would be a more political interpretation of perceived representation and legitimacy, with a focus on (strategic) voting and heterogeneous tastes (see for example Besley & Coate, 1997).

In the following we will use both definitions of legitimacy, i.e., based on perceived procedural justice and based on shared vision. We will not address legitimacy based on shared values and norms since we do not expect norms to change because of decentralization.

To assess the impact of legitimacy perceptions on cooperation we consider three outcomes, each of which partly reflects the willingness of water users to cooperate and contribute to irrigation management: (1) water users' self-reported charge payments, (2) WUA-reported charge payments, and (3) water users' behavior in a field experiment that was framed in terms of irrigation management. We expect contributions in the game to reflect water users' willingness to contribute to irrigation management because we frame the game: half of the respondents is told that the game is about irrigation management ("the irrigation treatment") and fills in a survey about

the perceived legitimacy of irrigation management before playing the game, whereas the other half is told that the game is about contributions to the village festival (the "festival treatment") and fills in the survey afterward. Note that we apply *label framing* rather than *valence framing* where, apart from the wording, also the incentive structure of the game is changed (see Andreoni, 1995).

Elliott, Hayward, and Canon (1998) were one of the first to show that label framing significantly influences behavior in experimental games. Since then, the debate on the causes of these framing effects is ongoing. Dufwenberg, Gächter, and Hennig-Schmidt (2011) suggest that framing influences game behavior by giving subjects a cue about a comparable social situation, thus triggering beliefs about other subjects' behavior and beliefs. Ellingsen, Johannesson, Mollerstrom, and Munkhammar (2012) compare the role of preferences and beliefs in game behavior and conclude that framing does not trigger subjects' preferences but beliefs. In both papers, however, subjects are homogeneous, the games being played with Western undergraduate students in the lab. Harrison and List (2004) rank these types of experiments as the most hypothetical, since contextual factors basically play no role in the decisions made. With heterogeneous subjects, framing may have differential impacts, an issue which we further elaborate in Ansink and Bouma (2013). Although we cannot explicitly control for beliefs and preferences in our analysis we will control for subject heterogeneity and assess whether framing influences subject behavior in the game.

We analyze the impact of water users' legitimacy perceptions on (self)-reported and revealed contributions while controlling for factors that may directly influence contribution levels (Bardhan, 2000), like landholding size, income status, caste membership, education, and gender, as well as general trust and fairness perceptions. We assess legitimacy based on perceived procedural justice with the help of a legitimacy survey, and legitimacy based on shared vision by accounting for WUA membership.

Our results show that legitimacy perceptions differ, both between the two types of villages as well as between WUA members and non-members, but that these differences do not explain game behavior nor respondents' (self-reported or WUA-reported) charge payments. Non-members do contribute significantly *less* under the irrigation frame as compared to WUA members. We show that this effect is not caused by differences in perceived procedural justice, but may be caused by differences in shared vision. Game behavior, however, is not correlated with (self-reported or WUA-reported) charge payments which raises questions on its external validity, e.g., the extent to which game behavior can be generalized to a non-game setting. To explain the different results we argue that, in line with Ruttan (2008), our indicators of cooperation are measuring different aspects of cooperation, e.g., game behavior measuring a "willingness to collaborate" and charge payments a "willingness to invest". In this case, our results suggest that perceptions of irrigation management legitimacy generate a "willingness to collaborate" (at least; for part of the water users), but have no impact on the "willingness to invest" as reflected in charge payment behavior.

The remainder of this paper is structured as follows. In the next section we introduce the decentralization of irrigation management in the Warana-Chandoli irrigation system in Maharashtra, India. In Section 3 we present our methodological approach and in Section 4 our main results. In Section 5 we discuss our findings and in Section 6 we conclude.

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