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# Do Stronger Collective Property Rights Improve Household Welfare? Evidence from a Field Study in Fiji

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**Summary.** — Extensive previous work has analyzed the functioning of collective ownership institutions, arguing that such institutions can better govern common pool resources under some conditions than private or state ownership. However, empirical research regarding the impact of stronger collective ownership rights on household welfare is limited. Exploiting a natural experiment, this article uses a unique dataset to examine the impact of collective fisheries ownership on household income and food consumption in Fiji. Strengthening collective ownership rights improves household welfare as indicated by food consumption, but does not increase monetary income. Income improvements are instead attributable to Nongovernmental organization (NGO) project support.

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**Key words** — property rights, economic development, institutions, common pool resources, collective, ownership, Fiji

## 1. INTRODUCTION

A vast multitude of previous studies have examined the structure and functioning of successful and long-enduring institutions for collective ownership of common pool resources<sup>1</sup> (e.g., Acheson, 1998, 2003; Agrawal, 1994, 2000, 2001; Baland & Platteau, 1996, 2003; Cox, Arnold, & Tomás, 2010; Gordon, 1954; Govan, Tawake, & Tabunakawai, 2006; McCarthy, Dutilly-Diane, & Drabo, 2002; Ostrom, 1990, 2005; Ostrom & Nagendra, 2010; Ostrom, Schroeder, & Wynne, 1993; Wade, 1988, *etc.*), but, surprisingly, to date no study has used quantitative data to identify the impact on household welfare of stronger collective ownership rights. The long term viability of collective ownership institutions depends on whether community members benefit, as it is the benefits that accrue to local owners that create the incentive for internal rule monitoring and enforcement—so the impact of stronger collective ownership rights on household livelihoods is a critical question. Exploiting a natural experiment—in which some villages were exogenously<sup>2</sup> included in a provincial level government initiative to strengthen collective ownership rights over fisheries, while villages in a neighboring province were excluded—this study examines the impact on household income and food consumption of stronger state government support for collective fishery ownership rights.

There is a common but mistaken perception that collective ownership is equivalent to the absence of property rights. This is not the case. There are three fundamentally different types of property rights regimes: open access, collective property, and private property (Baland & Platteau, 1996, 2003; Ostrom & Hess, 2010). Private property vests a bundle of rights in a single owner. On the other end of the spectrum, open access is equivalent to a no-property or *res nullius* regime, where no one has superior rights to a resource than anyone else. Collective ownership, in contrast, is characterized by defined boundaries, clarity regarding the identity of those individuals who have a right to exercise resource claims, community-level collective choice arrangements to determine resource use rules, and internal monitoring of rule compliance and enforcement of rule violations by and against community members (Baland & Platteau, 1996, 2003; Ostrom, 1990).

Common pool resources (CPRs) consist of both an underlying stock, such as healthy reef ecosystems and fish populations, as well as a harvested flow like fish or irrigation water (Lueck, 1995; Ostrom, 1990). This dual nature of CPRs means that both provision and protection of the resource stock and utilization of the resource flow are potentially subject to collective action failures. Fisheries are a quintessential common pool resource, and therefore pose a common conjuncture of challenges in terms of fostering efficient and sustainable resource use (Béné *et al.*, 2003; Clark, 1980; Wyman, 2008).

Institutions for common pool resource governance are central to reducing poverty, sustaining ecosystem services, and mitigating natural resource conflicts. Globally, over 300 million members of an estimated 6000 indigenous groups hold land and other resources communally, in accordance with “customary law”<sup>3</sup> (Stavenhagen, 2004; UN Permanent Forum on Indigenous Issues [UNPFII], 2009). Understanding whether stronger collective ownership rights can improve livelihoods and raise living standards of the poor is critical for evaluating what kinds of institutional reforms effectively reduce poverty (Bardhan, 2005a; Conning & Robinson, 2007; Gradstein, 2004; Markussen, 2008; North, 1990; Singh, 1986; Unruh, 2002). Lessons learned regarding effective institutions for common pool resource governance are also applicable to sustaining a wide array of ecosystem services and promoting environmental conservation (Baland & Platteau, 1996; Berkes, 1989; Govan, 2009; Larson & Bromley, 1990; Loehman & Becker, 2006; McCarthy *et al.*, 2002; Moser, 2004; Oses-Erasoa & Viladrich-Grau, 2007; Sano, 2008). Finally, natural resource governance failures that lead to resource depletion may trigger violent conflict caused by scarcity (Bardhan, 2005b; Cruz,

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1986; Haller, 2002; Homer-Dixon, 2001; Hotte, 2001; Moyo, 2005; Puppim de Oliveira, 2008; Reuveny, 2000).

Using a unique dataset generated from household surveys of three neighboring villages, this study examines the impact on household income and food consumption of institutional reforms to strengthen collective ownership rights over fisheries in Fiji. The study focuses specifically on the relationship between institutional reforms and livelihoods, putting aside the related issues of ecosystem services and natural resource conflicts, because welfare improvements are the linchpin for the internal incentives that ensure collective ownership institutions succeed and endure (see discussion in Section 2). Findings indicate that while strengthening collective ownership rights in Fiji improves household welfare by increasing the consumption of fresh seafood and reducing the consumption of inferior canned food substitutes, there is no impact on household monetary income absent implementation support from outside Nongovernmental organizations (NGOs). Stronger state protection of collective ownership rights against encroachment by outsiders allows communities to enjoy the full benefits of their fishing area and internalize gains from improvements in resource management that foster sustainable resource use.

## 2. BACKGROUND

A large body of recent property rights research posits that in some circumstances collective ownership of common pool resources is more conducive to sustainable and efficient resource use, and more effectively accrues benefits to the resource owners, than either private or state ownership (e.g., Agrawal, 1994, 2001; Baland & Platteau, 1996; Berkes, 1992; Cox *et al.*, 2010; Ostrom, 1990, 2005; Ostrom & Nagendra, 2010; Poteete & Ostrom, 2008; Veitayaki, 2006; Wade, 1988). This research on collective ownership comes as a sharp riposte to both (a) the significant body of legal and economic scholarship arguing that well-enforced *private* property rights are necessary for trade, credit access, and sustainable levels of resource use and investment; and (b) the notion that state rather than private provision is required for public goods with total social benefits greater than the gains enjoyed by any single individual investor or user.

Property rights theory and research has long suggested that secure private property rights are necessary to create incentives for efficient levels of investment and resource use because the users/investors are able to internalize all costs and benefits (Demsetz, 1967; Hardin, 1968); facilitate market exchange since transaction costs are lower with a single owner than with multiple owners (Coase, 1960); and expand credit access because the underlying asset can serve as collateral, thus making repayment commitments more enforceable (De Soto, 2003; Field & Torero, 2006). However, for common pool resources such as fisheries, the transaction costs of privatization—allocating and enforcing rights, and monitoring and punishing encroachment (Anderson & Hill, 1975)—are high; in the case of fisheries and common pool resources generally, complete privatization is *de facto* impossible<sup>4</sup> (Smith, 2008). At the same time, it is widely recognized that even with strong protections for private property rights, voluntary markets will fail to provide socially optimal levels of public goods (Olson, 1965). Public goods are difficult or impossible to prevent non-payers from utilizing, and are characterized by high fixed and low or non-existent marginal costs—therefore, because an individual only voluntarily contributes the amount of a good up to the point where her marginal cost equals her marginal benefit, coercive institutions are the only apparent solution to public

goods provision (Chamberlin, 1974; Frohlich & Oppenheimer, 1970; Olson, 1965; Pecorino, 1999).

Yet state regulation is inefficient and ineffective in preventing overexploitation of common pool resources if the costs of monitoring resource use and enforcing resource restrictions are high, or when monitoring and enforcement is plagued by significant principal-agent problems (Grafton, 2000; Ostrom, 1990). Principal agent problems can arise under conditions of asymmetric information when a principal hires an agent to pursue the principal's interest through actions that may be costly to the agent. Government agents charged with enforcing regulations and allocating fishing licenses do not internalize the benefits of optimal resource use, and the state has imperfect information regarding the behavior of its agents, potentially generating principal-agent problems such as shirking and bribe-taking. In contrast, when the resource owners are also the agents responsible for monitoring and enforcing restrictions on resource use—as is the case in Fiji's collectively owned fisheries—principal-agent problems are avoided. Moreover, local fishermen and villagers are able to monitor against rule violations and outsider encroachment without accruing additional costs. Village neighbors employ informal social sanctions internally to enforce resource-use restrictions (Colding & Folke, 2001; Posner, 1996; Tawake & Hoffmaister, 2009). Where lack of monitoring and enforcement is pervasive due to information costs and principle-agent problems, *de jure* state regulation is equivalent to *de facto* open access—and the colloquially so-called “tragedy of the commons”<sup>5</sup> is the predictable result. In these circumstances collective ownership will be more efficient than state regulation at promoting optimal levels of resource use and investment (Clarke & Jupiter, 2010; Ostrom, Gardner, & Walker, 1994).

Because collective ownership institutions are composed of individuals each with their own self-interest, collectively owned resources may suffer from collective action problems in terms of both appropriation (allocation of the flow) and provision (building and maintaining the stock basis of the resource system) (Ostrom *et al.*, 1994). The significant body of theoretical and empirical work examining institutional design for successful collective common pool resource ownership has proposed an array of theoretical principles that explain when, how, and why institutions for collective ownership can lead to efficient resource management (Ostrom & Nagendra, 2010; Poteete & Ostrom, 2008).

In contrast to the wide-ranging research on the internal dynamics of collective natural resource governance, to date there have been no rigorous empirical studies regarding the household welfare *impacts* of collective ownership. Improvements in household welfare are a centrally important potential benefit of stronger collective ownership rights, because it is the welfare improvements enjoyed by group members that create the incentives for group members to supply and maintain the institutions that facilitate successful collective ownership (Ostrom, 1990, 2005; Ostrom & Nagendra, 2010; Poteete & Ostrom, 2008). Absent the benefits that theoretically accrue to group members from the internalization of externalities and the adherence to rules regarding sustainable resource use, individuals will not incur the monitoring and enforcement costs required to overcome collective action problems in appropriation and provision. Therefore the welfare improvements enjoyed by group members from stronger collective ownership institutions are fundamental to the coherence of commons theory.

However, the large body of research regarding collective ownership institutions has primarily used other metrics and analytical frameworks to study institutional “success”, includ-

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