

Does Social Capital Help Improve the Irrigation Service Fee Payment?

A case study of an IA in the Philippines

社会関係資本と水利費支払いの関係性—フィリピンの水利組合を事例に—

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The purpose of this thesis is to analyze the relationship between the irrigation service fee (ISF) payment rate and social capital by examining the key factors of social capital that disincentivize ISF payments by farmers in an IA in the Philippines. This thesis utilizes theories of social capital and collective action for its analysis. This thesis finds that land tenure is the key factor that makes it difficult to raise the ISF payment rates.

1. Background:

In the 1970's and 80's, the government of the Philippines was keen on constructing irrigation systems. Due to the top-down construction of irrigation systems by the National Irrigation Administration (NIA), farmers do not really have an incentive to operate and maintain irrigation systems that support effective sustainable irrigation management. The NIA encouraged farmers to organize irrigation associations (IAs) in an attempt to give more incentives to farmers operating and maintaining irrigation systems. Then, the NIA also aims to turn over some rights of ownership and management of national irrigation systems to IAs. However, the process of turnover has been slow and many IAs have been too fragile to properly maintain irrigations systems. The ISF is the main financial source to organize an IA. The low ISF payment rate causes the fragility in IAs. Therefore, this thesis tries to examine how farmers can be motivated to pay the ISF by examining the factors that disincentivize farmers' ISF payments.

2. Literature review:

This thesis uses theories of social capital and collective action for analysis. Social capital is the concept that utilizes human relationships and societal ties among people as a type of capital that can be invested in order to bring benefits to individuals or to a whole society. Theories of social capital can serve to explain the success of irrigation management. This thesis adopts the concept of three types of social capital suggested by Woolcock (2001): bonding, bridging and linking.

Also, theories of collective action explain the mechanisms that create incentives for farmers to join in collective action. Generally, they explain that farmers' motivations to join in collective

actions are based on farmers' perceptions of rules and institutions which prevent free-riding. Theories of collective action are relevant to social capital in that social capital can facilitate the creation of rules and institutions. Therefore, this thesis tries to approach the issue of whether strong social capital can help achieve collective action among farmers (a higher ISF payment) in an IA to create sustainable irrigation management.

3. Hypothesis:

The theoretical hypothesis for this thesis is composed of two assumptions and three hypothetical relationships (Figure1). The first assumption is that the sustainable operation and maintenance of irrigation requires collective action including the farmers' ISF payment. The other assumption is that institutional arrangements and infrastructure are interlinked, but this thesis does not discuss the technical aspects of irrigation. The three hypothetical relationships are: 1) the farmers' motivation for the ISF payment has relationships with the institutional arrangements that prepare a system to allocate water fairly among the farmers, 2) the institutional arrangements can be promoted by strong social capital, and 3) there is a relationship between social capital and incentives for ISF payment.



Figure1: Theoretical Hypothesis

This thesis attests several working hypotheses led by the theoretical hypothesis which analyzes the key selected factors of social capital that affect the ISF payment in BRISI (Figure2). They are:

- 1) IAs with strong social capital have high ISF payment rates.
- 2) An IA which has stronger social capital creates a more functional IA.

- 3) IAs with a water rotation system have better ISF payment rates.
- 4) IAs with strong perceptions of corruption in the Philippine government (low linking) have low ISF payment rates.
- 5) The relationship between an IA and Barangay (the smallest political division in the Philippines) affects the ISF payment rate.
- 6) IAs with stronger Bayanihan (the traditional cooperative behavior of communities in the Philippines) have a higher rate of ISF payment.
- 7) Whether there are the factors of social capital that affect the ISF payment.

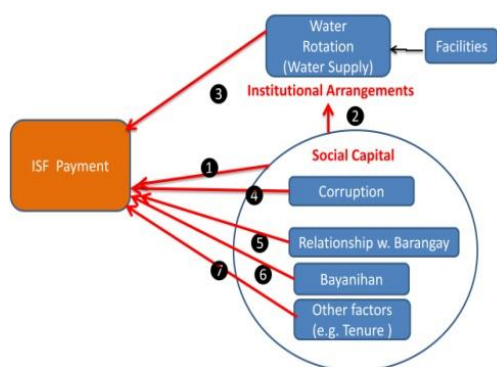


Figure 2: Working Hypotheses

4. Methods:

This thesis uses the Balanac River Irrigation System Association (BRISIA) as a case study. Though it is one of the best organized irrigation systems in the Philippines, this system encounters a low collection rate of irrigation service fee (ISF) payments.

5. Results:

This research yielded several key findings. The first of these findings is the relationship between functionality of the BRISIA and the ISF payments rate of BRISIA. This research finds that the ISF payments by farmers cannot be simply incentivized only by the punishments or discount mechanisms. Secondly, focusing on the four midstream TSAs where the ISF payment is lower than the average of the BRISIA and which do not appear to have strong bonding social capital, this research finds a plausible causal relationship between weak bonding social capital and a low ISF payment rate. Thirdly, with respect to the relationships between the functionality of the TSAs and social capital, a clear relationship was found; the downstream TSAs which apparently have weak social capital, exhibit cooperative behavior that allows them to make use of scarce water reaching downstream and to realize fairer water sharing

among the farmers. Also, the downstream TSAs which exhibit the lowest ISF payment rates have more bayanihan practices in their agricultural lives and the water rotation systems, so it is clear that the less privileged downstream users show more cooperative behavior. The downstream TSAs experience lower ISF payment and higher dissatisfaction with water supply implement the water sharing system.

In conclusion, the hypotheses are attested as follows in this thesis (Figure3):

- 1) The IA that lacks bonding social capital seems to have a low ISF payment rate,
- 2) The downstream users with weak social capital creates a high functioning organization that coordinates fair water distribution,
- 3) The downstream IAs that experience scarce water supply and low ISF payment rates have a water rotation system,
- 4) The relationship between the negative perception of the government and ISF payments is not clarified to be strong,
- 5) There are no relationships between barangay functions and the ISF payment,
- 6) There are no relationships between bayanihan practice and the ISF payment, and
- 7) There is a strong relationship between the land tenure of farmers and ISF payment rates. The major contribution of this thesis is that land tenure determines the human relationships that compose social capital.

The biggest contribution of this thesis is in the finding about the relationship between the land tenure and the ISF payment. This research argues that the land tenure of the farmers is the key factor that affects the ISF payment. Therefore, this thesis sheds a new light on the causal relationship between social capital and the ISF payment.

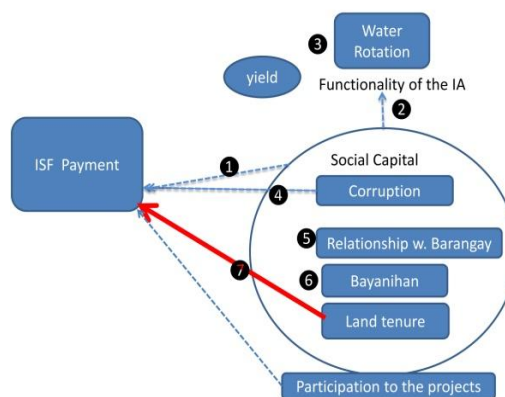


Figure3: Findings

Reference: Woolcock, M. 2001. The place of social capital in understanding social and economic outcomes. *Canadian Journal of Policy Research* 2(1):1-17.