

Revised Statement of Work

Project Title:

Rural Livelihoods and Institutional Reform in Small-Scale Fisheries in Tanzania

Investigators:

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Project Description:

Despite the importance of institutions in the shaping of development outcomes, research focused on understanding how institutions emerge, adapt, and change is still in its infancy. With command-and-control approaches to fisheries management largely being recognized as ineffective for small-scale fisheries in developing countries, understanding the mechanisms that foster the development of strong local institutions for small-scale fisheries management is of critical importance. This is especially true given that a bottoms-up approach to managing small-scale fisheries in developing countries is not guaranteed to succeed. Indeed, the extent to which strong institutions develop from a bottoms-up approach depends on the ability of fishery users to collectively govern the fishery resource in a manner that resolve externalities and internal coordination tasks efficiently, fairly, and with low transactions costs.

We propose to test a novel approach to improving institutional performance. Numerous laboratory and field experiments have demonstrated that individuals gain experience when playing repeated experimental games, which then alters their patterns of coordination and cooperation. For example, a number of studies find that cooperation emerges in infinitely repeated coordination game, and that observed levels of cooperation are higher than in finite games. Such findings suggest that players process information about the game as they play, which they then incorporate into their game-based behavior. In many cases, this experience translates into increased cooperation in similarly structured games. These studies make clear that experimental games can therefore help make more salient strategic and behavioral considerations that affect how individuals participate in these games during future play.

To the best of our knowledge, however, no one has thus far used repeated game play as a pedagogical tool for training individuals and groups in how to participate more effectively in the

real-world institutions of which they are part. The hypothesis we aim to test with this research project is that by using experimental games to focus attention on critical aspects of how individuals affect (and are affected by) institutional performance, it will be possible to foster cooperation, monitoring, punishment, or other improved behaviors. In turn, these improved behaviors can lead to better institutions. Participating in these repeated games, therefore, primes participants to participate more fully/accurately/continuously in the real-world institutions of which they are a part. In this way, it is hypothesized that capacity building via carefully structured game play can improve institutions endogenously.

Our ultimate goal is to test this hypothesis in small-scale fisheries management in Tanzania. For more than a decade now, development agencies have promoted co-management strategies based around community associations known as “beach management units” (BMUs). Evidence on the effectiveness of these institutions is both limited and mixed. While randomly assigning better institutions is likely not viable, the idea presented here is a form of treatment that is readily randomized. We will design games to be played on a weekly basis in four BMUs over a period of one month. Baseline and endline measures of individual behavior/well-being and institutional performance will document the effect of this training on outcomes of interest. The aim is to structure the research project to produce the following outputs: (1) generate new data on BMU performance and processes, (2) generate new data on how BMU members play and learn the pilot experimental games, as well as on important individual and village characteristics that affect behavior and game play, (3) a completed experimental design/plan for an additional round of funding, and (4) evidence on whether experimental games can affect fishermen behavior outside of the game setting.

Work to be Performed:

Before we can test our hypothesis that capacity building via game play can improve institutions endogenously, it is necessary for the research team to conduct ethnographic research and document local institutions, describe how they have changed over time, how they vary across BMUs, and how they interact with federal institutions for fisheries management. This ethnographic research will play a critical part in defining the outcome variables for our baseline and endline data collection. Furthermore, this preliminary fieldwork will directly inform the design of field experiments that are insulated from anticipated difficulties, including but not limited to the issue of spillover effects.

Thus, this project will focus on conducting preliminary fieldwork to understand how BMUs are currently operating, and identify key features of the institution that could be improved, based on a combination of direct observation, consultation with local experts, and reference to the relevant literature. We will then design a game that is framed as closely as possible to the real-world issues facing local management. Pilot experiments will then be conducted in a small number of BMUs to gather preliminary evidence of the extent to which capacity building via game play can improve institutions. Using the information on BMU institutions and the preliminary results of the pilot experiments, we will complete a experimental design plan and a full proposal with the focus of testing the hypothesis outlined in project description.

The proposed project will be led four researchers (Dr. Yaniv Stopnitzky at University of San Francisco, Dr. Paul Onyango at University of Dar es Salaam, and Dr. Matthew Reimer at

University of Alaska Anchorage, with guidance by Dr. James Wilen at University of California, Davis) with complementary expertise in fisheries economics, development economics, and experimental economics. The University of San Francisco will collaborate with University of Alaska and University of Dar es Salaam on all aspects of the project, including: (i) design of the pilot experiments and the ethnographic research; (ii) design of the pilot projects and collection of ethnographic data; (iii) data analysis and interpretation of the results from the pilot experiments and ethnographic data; and (iv) writing a full proposal using the results from our preliminary field work.

Period of Performance:

May 1, 2014 to September 30, 2015.

Timeline:

Pre-Fieldwork background research (Early 2014)

Dr. Onyango will use his contacts in the Lake Victoria Fisheries Organization to organize the ethnographic interviews and the pilot experiments to be conducted in the summer of 2014. In particular, Dr. Onyango and his graduate students will identify and coordinate with community partners to facilitate the ethnographic interviews and pilot experiments.

Ethnographic fieldwork (Summer 2014)

Ethnographic research will begin in the summer of 2014. Dr. Stopnitzky and Dr. Reimer will each spend approximately 2-4 weeks accompanying Dr. Onyango and his graduate students as they visit BMUs surrounding Lake Victoria and along the coast of Tanzania. Prior to the start of fieldwork, we will host a meeting with community representatives to solicit feedback on the survey instrument, discuss names of potential key informants, and finalize logistics. The goal is to understand how BMUs are currently operating, and identify key features of the institution that could be improved. We will use this time to design the pilot experiments to be as close as possible to real-world situations faced by BMU participants. Dr. Onyango, Dr. Stopnitzky, and Dr. Reimer, will train graduate students to conduct the field experiments and collect data starting in Fall 2014.

Pilot Experiments (Fall 2014-Spring 2015)

Dr. Onyango and graduate students will begin conducting field experiments and baseline institutional data collection for a small number of BMUs in the Fall of 2014.

Post-Pilot Experiment Data Collection and Proposal Writing (Summer of 2015)

Graduate students will return to the BMU communities to collect post-experimental institutional data for the small number of BMUs for which pilot experiments were conducted, in order to investigate the extent to which the experiments impacted BMU-level institutions and BME member behavior therein. The project team will begin the data analysis and prepare a full proposal using the major findings from the ethnographic research and pilot experiments.