

Understanding and addressing fishers' risk behaviour

MultiTip Policy Brief #2

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The discussions on gear regulations (see MultiTip Policy Brief #1) show that effective regulation can lead to a sustainable fishing sector. However, fishers are still willing to take the risk of deviating from these regulations and fish illegally, despite the governance instruments installed (e.g. boat licensing, fish size regulations, and military enforcement). Non-compliance comes with a financial risk, as the chance of increased income through illegal activities comes with the risk of very low income through punishment (e.g. fines, arrest, gear destruction). Therefore, for effective management, it is important to understand when fishers are more willing to take a financial risk and when they are less willing to take such a risk.

By conducting behavioral studies with fishers, we are able to understand mechanisms that determine fishers' financially risky behavior. We show that after being informed about the behavior of other fishers, fishers do not imitate low-risk behavior, while they do imitate high-risk behavior. However, we also show that fishers are less likely to take high risks when informed about how high-risk behavior negatively affects other fishers. We therefore suggest that information about how high-risk behavior, such as non-compliance with net regulations, threatens the livelihoods of other fishers may help to encourage fishers to engage in more compliant, low-risk behavior.

Key Insights:

1. **Type of information matters - fishers imitate others' high-risk behavior, but not low-risk behavior:** Our studies show that when fishers learn that other fishers are engaging in financially high-risk behavior, they take more risks than fishers who receive no information. However, when they learn that others engage in financially low-risk behavior, e.g. being compliant with net regulations, fishers do not behave any differently than if they did not have this information (Fig 1.).

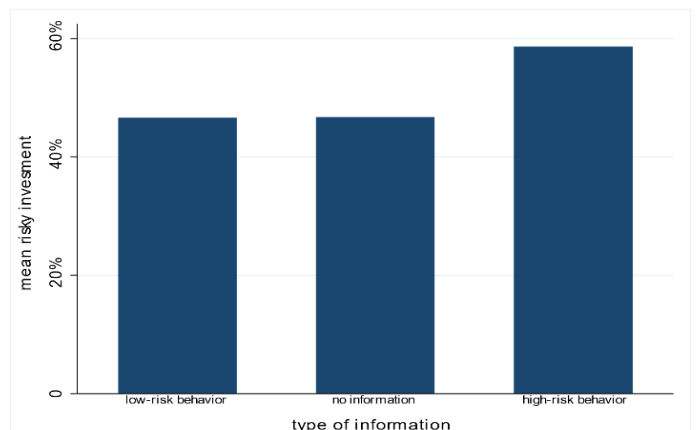


Figure 1: Mean share of endowment spend for risky investments after receiving information about other fishers behavior.

2. **Fishers care about how their risk decisions affect others:** When fishers are certain that taking a higher financial risk would have negative consequences for other fishers' income, they take less risk than if it does not affect the other fishers' income. This implies that fishers might comply more if they know that the risky, non-compliant behavior harms others (Fig. 2).

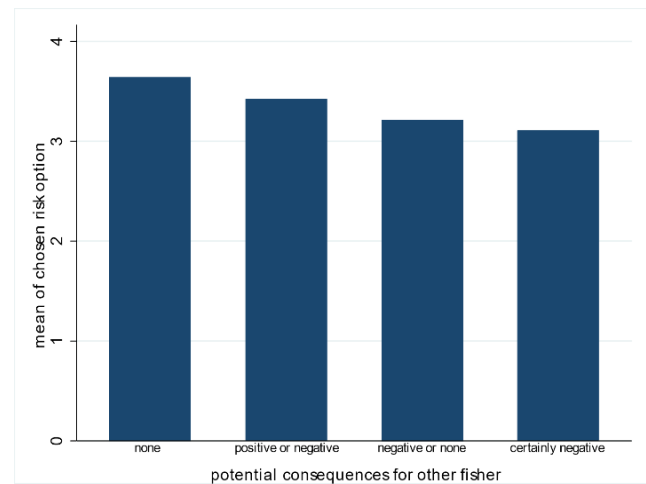


Figure 2: Mean chosen risk option (between 1 (no risk) and 5 (very high risk) by consequences it has for other fisher.

3. **Information campaigns to promote compliance behavior should focus on how harmful non-compliant behavior can be:** Information campaigns targeting fishers' behavior should leverage key insights #1 and #2 described above. This implies that campaigns to promote low-risk behavior (e.g. compliance) should focus on informing fishers about how high-risk behavior affects other fishers' income negatively - rather than using examples of low-risk behavior. For example, an effective radio campaign for promoting compliance with net regulation could focus on how the usage of illegal nets eventually reduces other fishers' income through the destruction of fish stocks.

Methodology

The findings result from economic lab-in-the-field experiments around the Lake Victoria region. Using the experiments, we examine fishers' income relevant decisions in response to pre-defined conditions in controlled settings. This allows us to focus on specific drivers of fishers' financial risk-taking and, therefore, understand the behavioral mechanism behind it. In March 2020, we conducted an experiment in Tanzania with support from the Tanzanian Fisheries Research Institute (TAFIRI). This involved over 640 fishers from 22 landing sites. The experiment looked at how information about others' behavior changes the willingness to engage in a risky financial investment (Insight 1). In September 2022, we conducted an experiment in Uganda by collaborating with the National Fisheries Resources Research Institute (NaFIRRI). Over 640 fishers from 24 landing sites participated in this experiment. In this study, we looked at how fishers choose between different financial risk options, based on how they affect other fishers. (Insight 2)

References:

- Dannenberg, A., Diekert, F., & Händel, P. (2022). The effects of social information and luck on risk behavior of small-scale fishers at Lake Victoria. *Journal of Economic Psychology*, 90, 102493. <https://doi.org/10.1016/j.joep.2022.102493>