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ILLEGAL FISHING AND TRAFFICKED LABOR: AN EXAMINATION OF POLICIES TO ADDRESS THE INTERSECTION OF PROSPERITY AND EXPLOITATION

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ABSTRACT

Human exploitation in the seafood industry is a complex transnational problem jeopardizing human rights and marine ecosystems. Labor trafficking, environmental sustainability, aquaculture, and socio-economic development interact interdependently, and form a large system with multiple decision makers with conflicting goals. We present the results of a System Dynamics simulation model which incorporates resource management of fish stocks and illicit labor markets. Using this model we examine the implications on trafficked labor of several policies including: imposing an excise tax, trafficking prevention campaigns, and increased policing.

1 INTRODUCTION

Human exploitation in the seafood industry is a complex transnational problem jeopardizing human rights and marine ecosystems (Sutton and Siciliano 2016). Illegal, unreported, and unregulated (IUU) fishing depletes nearshore fish populations, driving fishing fleets further out to sea. These operational shifts increase fuel and labor costs, incentivizing fisheries to adopt more aggressive strategies to remain profitable and meet the demand of price sensitive consumers. Such a situation creates an impetus for utilizing cheap labor, creating an incentive for various forms of exploitation, including human trafficking (Pearson et al. 2006; Sutton and Siciliano 2016). The largely migrant crew members are extremely vulnerable for exploitation, as labor inspections rarely occur at sea, the working conditions are dangerous, and the living conditions often unsanitary. Survivors of labor trafficking on fishing vessels have acknowledged that many of the vessels operate with illegal fishing practices that contribute to resource depletion and species endangerment. The use of unscrupulous agents to recruit labors for fisheries using deception, fraud, and coercion contribute to the illicit nature of the problem. The vulnerable labor pools targeted for recruitment are drawn into such employment from a desperate milieu of socioeconomic need.

Labor trafficking, environmental sustainability, aquaculture, and socio-economic development interact interdependently, and form a large system with multiple decision makers with conflicting goals. The system has complex, dynamic, diverse, and nonlinear characteristics. System dynamics (SD) provides a theory of system structure and an approach for representing complex systems and analyzing its dynamic behaviors. SD is particularly useful for the case of exploited labor and overfishing as significant feedback loops in the system and non-linear relationships exist. While SD modelling is relatively common for

modelling wildlife populations, applications of SD to examine the interdependence of wildlife and illicit trade are rare. A few notable exceptions are (Crookes and Blignaut 2015) who examine market demand for illegally poached rhino horn prices by using systems model which contains both equilibrium and disequilibrium elements. Dudley (2004) developed an SD model to understand the consequences of strategies to control illegal logging such as the enforcement of laws and provision of alternative sources of income among other strategies.

2 SYSTEM DYNAMICS MODEL

We present the results of an SD simulation model (see Figure 1) which incorporates resource management of fish stocks and illicit labor markets. Using this model we examine the implications on trafficked labor of several policies including: imposing an excise tax, trafficking prevention campaigns, and increased policing. The model in its current form is not calibrated to a specific case. Its equilibrium is also a hypothetical point of reference that assures that we are able to focus on internal dynamics created by any interventions. A complex interplay of labor, environmental sustainability, aquaculture exists within fishing supply chains. Our SD models offers a way to capture these interdependencies with the supply chain and study remediation policies and their unintended consequences.

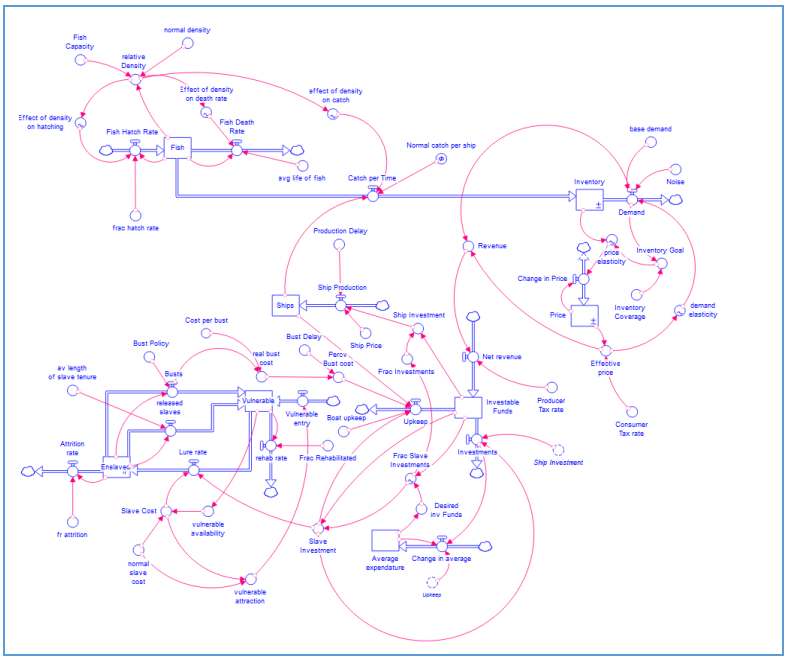

Figure 1 System Dynamics model of Illegal, Unreported and Unregulated Fishing.

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