

Thesis Title	A system dynamics approach to sustaining fisheries resources and enhancing benefits for the poor: case study of Trapeang Rung commune, Cambodia
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ABSTRACT

In recent years, fishermen in Trapeang Rung commune have noticed that their annual catch has been reduced by about one-half as compared to what they were able to achieve in earlier years. This decline has resulted from several different causes, including the emergence of additional households who depend on fishing for their livelihood, use of more-destructive fishing gear, and disturbance of a growing number of fishery-supporting habitats. In addition, a survey of fish-catch distribution reveals that the benefits from fishery resources accruing to poor fishing families are now much less than those being received by the non-poor. This is due mainly to the fact that the poor fishermen have much less ability to invest in ways to increase their capacity to conduct efficient fishing activities. This research addressed both of these policy issues -- how to sustain the area's total fishery stock, and how to allow poor fishermen to obtain more benefits from this resource. System dynamics modeling techniques have been used in this study to model interactions between fishermen and their shared fisheries resources. The objective was to project potential future fish production and identify and test potential management options to solve the

dual problems of declining fisheries resources and providing greater benefits to poor fishermen. Extensive experiments with the system dynamics models explored the implications of various management options, including reducing the number of new fishermen entrants, restricting the fishing gear allowed to be used, establishing a community fish hatchery and nursing program, and establishing a local saving group. This research found that certain combination options offered the best way to deal simultaneously with the two key problem areas.

Keywords: system dynamics modeling / catch per capita / fisheries resources management options.

