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AN ECONOMIC ANALYSIS OF THE TARGETING STRATEGY
OF ENTREPRENEURIAL ARTISANAL FISHERS IN DOMINICA

A Thesis
Submitted in Fulfillment of the Requirement for the Degree of
Master of Philosophy in Agricultural Economics

of
The University of the West Indies

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2011

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ABSTRACT

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This study examines the entrepreneurial artisanal fisher's problem of choosing a target portfolio that minimizes variability in net trip revenues given limited inputs and the carrying capacity constraints of an artisan vessel in an open access fishery using a mean-variance portfolio optimization model. Literature supports the view that the high degree of variability in mean catch rate contributes to the unprofitability and vulnerability of fishers, and may also encourage the use of unsustainable harvesting practices by fishers, namely over-fishing of local species in an attempt to improve fishing net revenue. The article also estimates the efficacy of targeting strategies employed by artisanal fishers, as evidenced by the ability to land the *ex ante* target species. The results show primarily that some fishers are in fact able to effectively land *ex ante* targets which are important to overall reduction in trip net revenue variability, and that there exist catch portfolios capable of reducing season variance in net trip returns for all the observed sites; some of which indicate that alternative options exist for improving the earnings of fishers other than increasing the size of fishing vessels or intensifying use and number of gear.

Key words: artisan fishery, fishing strategy, mean-variance portfolio selection, non-linear optimization, Dominica