



POLICY BRIEF

Impacts of Climate Change on Snakehead Fish Value Chains in the Lower Mekong Basin of Cambodia

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Policy Brief Series: November 2015

Introduction

The productive Mekong fisheries are essential to the food security and nutrition of the 60 million people of the Lower Mekong Basin (LMB). Freshwater fish consumption in Cambodia and Vietnam ranges up to 40 Kg/person/year, making them in the top three countries in the world. Fish contributes 81% of the population's protein intake in Cambodia and 70% in the case of Vietnam. Mekong inland fisheries provide employment to 1.6 of the 14 million Cambodians.

However, many capture fisheries resources have been largely overexploited and, as a result, development of aquaculture has been encouraged to provide the protein, income, employment and export earnings for Cambodia and Vietnam. Consequently, they are highly vulnerable to climate and non-climate (specifically water development such as hydropower and dam development) related drivers of change. The drivers will be felt throughout the fish value chain and will pose significant challenges for fisheries and aquaculture production; food security and the nutrition and health of people for poor households, markets and trade, and gender issues in the LMB of Cambodia and Vietnam. Meanwhile, a complete understanding of the impacts of each individual driver and a combination of drivers is only just beginning.

Adaptation is urgently needed to foster the resilience of the fisheries and aquaculture sectors. It will be important to identify a suite of potential adaptation options for the various biophysical and technical conditions of capture and culture fisheries in the LMB.

This paper will present the results of a study which examined the vulnerability, as perceived by snakehead (*Channa striata*) fish farmers and fishers in the Lower Mekong

Basin of Cambodia and Vietnam, to the impacts from climate change, using the concept of the value chain on snakehead fish markets.

Objectives

The study was put significantly emphasized on autonomous adaptation at the farm level and draws implications for planned adaptation to address farm-level issues. While households have already responded to localized manifestation of climate change, government can play a role in enhancing the adaptive capacity of fishers and fish farmers.

Causes of Snakehead Decreases

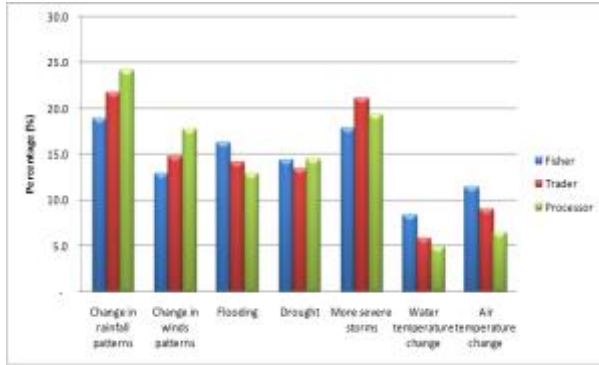
The study illustrates that the total catch of captured snakeheads per fisher household in Cambodia was decreased due to many crucial factors such as increasing number of fishers, increasing using potential illegal fishing gears (*electro fishing gear, mosquito net trap, dragnet etc*).

In general, an average annual snakehead catch per household was 1,408 kg. Major difficulties faced by snakehead fishers included: (1) loss fishing ground, (2) decreased fish catch and fish in the natural, (3) high input costs – i.e. fuel, food, fishing gears and equipment, and (4) lack of capital.

Climate Change Events Happened for Snakehead by Value Chain Actors in the Study Area

Hundred percent of the fishers, traders and processors were interviewed in Cambodia reported that they were aware of climate change events happened in their areas. The

remarkable events that they consider as climate change form in their areas were changes in rainfall patterns, more severe storms, flooding, drought, change in wind patterns, water temperature change, and air



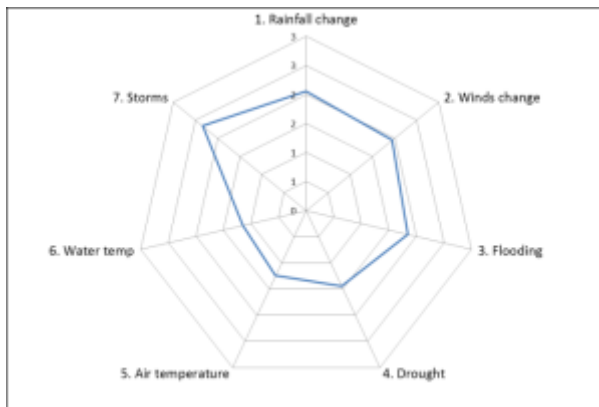
temperature change.

Vulnerability Assessment Matrix of Snakehead Value Chain Actors

Fishers feel more vulnerable as a result of storms as there is difficulty in going fishing and increased danger from fishing.

Meanwhile snakehead traders identified drought and rainfall change as the strongest impact and causing the greatest vulnerability since drought reduce the fish supply and cause higher price; while increasing rainfall make traders difficult to transport and sell fish.

It is quite difference from above two chain actors in term of assessment vulnerability. Processors found rainfall and storms as the strongest impact and highest vulnerability.

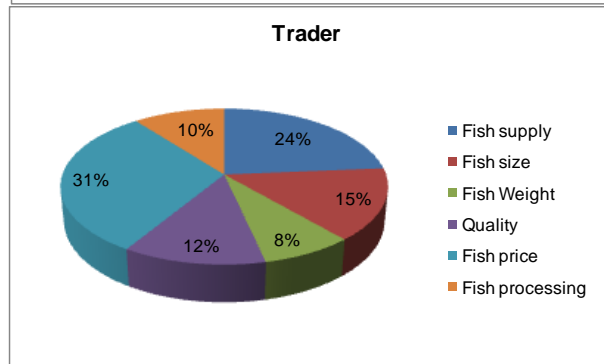
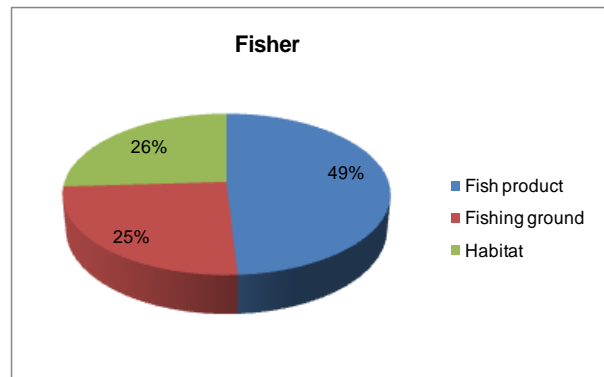


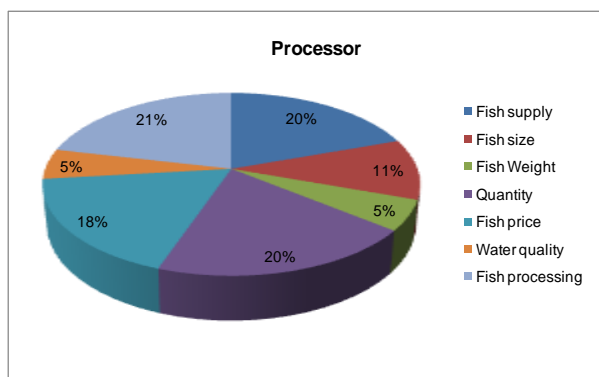
Impact of Climate Change on Snakehead Value Chain by Actors

Fisher respondents reported that the main impact of climate change on their business has been reduced fish catch/harvest/supply. More specific impact has been increased difficulty to go fishing due to the weather and climate. The responses were consistent across all provinces studied.

Fishers expected the impacts of climate change in the next ten years will be a decrease in fish catch, increased difficulty to go fishing, and difficulty to earn income from fishing activities.

Climate change impacts on snakehead value chain by actors in many forms as shown in the graph below:





Adaptation Strategies of Value Chain Actors

Fishers: change fishing gear, change fishing areas, increase input costs, spend more time on fishing, and stop doing only snakehead fishing,

Traders: buy other species, change to new areas where trading is easier and more profitable, increase input cost, and spend more time buying fish

Processors: buy other species, change to new areas where fish processing is easier and more profitable, increase input costs, and spend more time buying fish

Conclusion and Recommendation

- Snakeheads are preferred fish species for food in Cambodia.
- Snakehead productions are seeming to be highly vulnerable to both climate and non-climate related drivers of change such as hydropower dam development.
- The Government needs to become more active in working more active in working with the various actors in snakehead value chain to assist them in understanding and preparing for the

impacts of climate change on their business.

- The actors in the value chain will need to begin working together or be organized to be able to share information and develop appropriate adaptation strategies to address the impacts of climate change on their business.
- The Government should consider reviewing the ban on snakehead aquaculture in order to provide an alternative livelihood to households as an adaptation strategy.
- The Government put high pressure and prohibit all illegal fishing gear, over fishing, or any activity done to harm all these resources in order to make sure that it is sustainable for people consumption demand.



The AquaFish Innovation Lab is supported in part by United States Agency for International Development (USAID) Cooperative Agreement No. EPP-A-00-06-00012-00 and by contributions from participating institutions.

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