Climate-related risks to cage aquaculture in the reservoirs of Northern Thailand

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ARTICLE INFO

History:
Draft: 15 Sep 2015

Keywords:

reservoir
cage culture
mass mortality
risk management
climate
adaptation
perception

ABSTRACT

Extreme or unusual weather is suspected to be a factor in mass mortality events of fish in cage aquaculture in reservoirs. This study of cage aquaculture farms in the reservoirs of Northern Thailand had three objectives: (1) to identify the most important climate-related risks faced by fish farms; (2) to evaluate how these risks were currently managed; and (3) to assess how farmers expect or might adapt to the effects of climate change. The most important climate-related risks found was drought or low water levels; in recent experience, this had the largest financial impact. Other climate-related risks perceived as important included: over-turning of stratified cooler and anoxic bottom water layers; prolonged cloud cover; sharp changes in temperature; heat waves; and cold spells. Risks are primarily managed at the farm level with techniques like aeration and reducing feed during stressful periods. Farmers also emphasize the importance of maintaining good relations with other stakeholders, monitoring weather news and reservoir water management. Larger farms placed greater importance on risk management than small farms, even though types and levels of risk perceived were very similar. Gender differences in risk perception were not detected, but women judged a few risk management practices as more important than men. As one of the first studies to report how fish cage farmers in reservoirs perceive and manage climate-related risks, the findings identified some good practices for managing risks under current climate, as well as provided some basic insights into the longer-term adaptation needs for cage aquaculture in reservoirs.

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