

Impacts of climate change and water uses on availability of water for aquaculture in the Lower Nan Basin

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ARTICLE INFO

History:

Draft: 2 Dec 2015

Incomplete draft.

Keywords:

climate change,
aquaculture,
WEAP,
Water management,
Water use

ABSTRACT

The viability of fish cage aquaculture in the Nan River in northern Thailand, for instance, depends on the maintenance of suitable in-stream flow conditions and water depths. In locations downstream but relatively close to Sirikit Dam this is primarily a function of dam storage and release schedules. Further downstream the influence of water demand and inflows to the main river channel have an increasingly greater impact on suitability of river flows for aquaculture. The objective of this paper is to explore how changes in climate and water demand could potentially influence flows in the Nan River at different times of the year and thus the conditions under which cage aquaculture remains viable. The Water Evaluation And Planning (WEAP) system was used to analyze water balances and river discharges, for a set of water demand, allocation, dam operation rules and climate change scenarios. The likelihood of discharges exceeding critical lower and upper limits was then used to assess risks to river-based cage aquaculture.

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