

A scientist in no-man's land: Bridging the gap between fisheries and aquaculture

Kai Lorenzen
Imperial College

Most people whose life doesn't revolve around fish think we're just being pedantic, but I'm sure my readers will agree that there are two fundamentally different ways of producing fish: fisheries (the harvesting of wild fish stocks held in common ownership) and aquaculture (the active rearing of privately owned fish stocks).

The distinction is not just academic: fisheries and aquaculture are largely separate worlds with little in common except water and fish. To a born and bred aquaculturist, fish do not reproduce naturally, or at least they have stopped doing so due to environmental degradation and overfishing, thus creating a need for aquaculture. Fishing as an economic activity is about to be superseded by modern aquaculture just as gathering was superseded by agriculture, or stone hatchets by chainsaws. A fisheries ecologists' world couldn't be more different. Fisheries, exploiting the natural productivity of the world's vast water resources, are the mainstay of fish production, and better stock assessment/ecosystem approaches/co-management will

eventually resolve the sector's problems for the benefit of millions of poor fishers. Aquaculture, the pastime of rich investors, endangers wild stocks and the livelihoods of fishers by encouraging unsustainable harvesting for fish meal, spreading exotic nuisance species around the world and converting biodiverse wetlands into the aquatic equivalent of chicken batteries. The battle lines are drawn, and the confrontation is bound to continue for some time.

Unable to make up my mind as to which side I wanted to be on, I decided to settle in between the lines and turn that into a career. So far, it's been a partial success: my aquaculture colleagues believe I'm a fisheries ecologist, while my fisheries colleagues see me firmly in the aquaculture camp. Now all I need to do is convince them that there is academic and professional life in between, and indeed across the disciplines. Luckily I'm not alone: to millions of people involved in inland fish production, particularly in rural Asia, aquaculture and fisheries are but the endpoints of a continuum, and much of their food and income derives from systems that combine aspects of both. Hatchery produced juveniles are stocked into communal or public water bodies, often leading to new use rules and thereby transforming both

technological and institutional aspects of aquatic resource use. On the other hand, self-recruiting fish and invertebrates, whether indigenous or introduced, contribute substantially to the catch from many rural aquaculture systems. Systems such as these have been very much neglected by research and extension. Disciplinary (aquaculture or fisheries) professionals have largely ignored their existence, and certainly not made any serious attempts at understanding and improving them. There are two losers in this: the people whose livelihoods are linked to such "halfway" systems, and we scientists ourselves. Studying systems at the interface of fisheries and aquaculture provides unique insights into important questions such as the regulation of fish populations, fish life history responses to domestication, or the behaviour of common pool resource management institutions under conditions of technological change.

The new DFID project on self-recruiting species in aquaculture is a first interdisciplinary effort to systematically study these systems at the interface of aquaculture and fisheries. I am pleased to report that so far, relations between the disciplines have been amicable and we may even be able to reach agreement on one or two points!

