

NATURAL RESOURCES AND SHARING: THE ROLE OF TRADE

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Extended Abstract

There exists an extensive literature on food-sharing. When the food being shared is a renewable resource good, produced through hunting, gathering or fishing, sharing often takes place at the production level. In many such cases, competing hunters, gatherers or fishers share access to the opportunity to harvest the food product, through formal or informal agreements (e.g., cooperatives), set up before the production activity occurs. This form of sharing has been examined by a variety of social scientists, including economists, and has sometimes been viewed as a type of fishery management.

There are other cases, however, where the food item (fish, wild animal and plant life) is shared after it has been caught or harvested. This form of sharing, then, is with other consumers, as opposed to sharing with other producers. An illustrative example of this is found in the fishing sector of the island of Lofanga, Tonga, which has been studied by a team of social scientists affiliated with the University of Freiburg, Germany, and the University of St. Gallen, Switzerland. The pioneering member of this team is Andrea Bender, who did both theoretical and empirical work in Tonga (Bender, A. (2000). *Sharing fishing grounds and sharing food: How a cultural institution helps to protect an open access resource*. In VIII Biennial Conference of the International Association for the Study of Common Property (IASCP), Bloomington/Indiana, May 31 - June 4, 2000: Papers & Abstracts [CD-ROM]. Bloomington, IN: Workshop in Political Theory and Policy Analysis). Bender found that the fishery of Lofanga, despite being operated as an open access resource was healthy and, apparently, sustainable. This contrasted with at least one other island in Tonga, where there was little sharing and the fish stocks were being depleted. Perhaps sharing at the consumer level can play a role in how natural resources are utilized? Can it help understand why some cultures survive while others do not?

We draw on the work of Bender and her colleagues and on a theoretical model of trade in renewable resource goods, the latter developed and analyzed by two economists at the University of British Columbia, Canada (Brander, James A. and M. Scott Taylor. 1997. *International trade and open-access renewable resources: the small open economy case*. Canadian Journal of Economics 30 (3):526-552). They demonstrate that free trade in a renewable resource may or may not lead to economic gains over autarky conditions and that resource management “may be a necessary precondition for gains from trade.”(p. 551).

Could sharing do the trick? Perhaps. Sharing may be an almost inadvertent source of fishery management: “inadvertent” because its participants may have been operating within a culture where food-sharing is a tradition passed down over many generations. While it may be motivated by humanitarian (or even old-age insurance) considerations, it does impose a cost on the fishing activity, much like a landings tax and, as such, may change fishing behavior in a way similar to fishing regulation. We begin with our predecessors’ simple general-equilibrium model of a small coastal economy that produces and consumes two goods: fish and a manufacturing product, using two factors of production: labor and the ocean. Our model combines open access conditions, free trade and the sharing of fish domestically. It focuses on the long-run consequences of sharing and trade in a society that was or has been around for a long time. While Brander and Taylor examine the dynamics of the model, we focus on comparative statics. We demonstrate that sharing fish could offset the open-access externality costs (including lower sustainable fish stock levels) and lead to gains from trade. Such gains may occur when fish prices abroad are higher than their domestic level and when they are lower. One of the more interesting findings is that, under conditions that are optimal in autarky, there may be no incentive to trade at all, no matter what the level of the fish prices abroad.

We look at these results in some detail to offer the “intuition” behind the findings. We also examine a sample of actual cases of sharing the products of a renewable resource, including the Tonga case, and conclude with some tentative hypotheses about the role sharing may play in the survival of some, but not other, cultures.