FOOD SECURITY, BIODIVERSITY AND HUMAN HEALTH: ETHNOBIOLOGY AS A PREDICTIVE SCIENCE

Gary Paul Nabhan

Ever since Mark Nathan Cohen’s (1976) treatise, *The Food Crisis in Prehistory*, ethnobiological explorations of historic shifts in subsistence strategies, agro-economic structures and uses of biodiversity have explicitly dealt with the issue of cultural responses to food insecurity and declining nutrition health. More recently, sensationalistic and rather simplistic treatments of these topics by the likes of Jared Diamond (2005) have attempted to predict or ultimately avert future collapses in society’s capacity to sustain food security, with dubious results. However, archaeologists and ethnobiologists have diligently worked together to arrive at more nuanced understandings of how climatic, ecological, social, economic and political factors have interacted during prehistoric and historic periods of food crises (McAnany and Yoffee 2009, 2010).

Nevertheless, the general sorts of questions posed by Diamond remain before us: Can the lessons learned from the historical sciences of archaeology, paleonutrition and ethnobiology be used to forge a more comprehensive and useful predictive science regarding trends and options for human health and food security? Can such predictions help assure the functioning of ecosystem services required for stable food production, while averting famine and improving nutritional health in the face of accelerating climate change, declining fossil fuel and fossil groundwater reserves, and burgeoning human populations?

A thoughtful summary of interdisciplinary literature on the links between biodiversity and food security by T. C. H. Sunderland (2011) suggests that such an integrative and predictive science is not only possible but increasingly necessary. Drawing on an extensive review of ethnobiological literature, Sunderland concludes that:

Although long considered mutually exclusive, biodiversity conservation and food security are two sides of the same coin… Maintaining diversity within agricultural systems is not a novel approach, but one practiced by many smallholder farmers globally, in many different ways. The nutritional and livelihood benefits of diverse production systems are one way of achieving food security. Such systems are also more resilient to climate induced events or other shocks…Managing landscapes on a multi-functional basis that combines food production, biodiversity conservation and the maintenance of ecosystem services should be at the forefront of efforts to achieve food security (Sunderland 2011:265)