

TEXAS PAPERS ON LATIN AMERICA

Pre-publication working papers of the
Institute of Latin American Studies
University of Texas at Austin
ISSN 0892-3507

A preliminary version of this paper was read at the 64th Annual Meeting of the Southwest Social Science Association, March 1986, in San Antonio, Texas. This material is based on work supported by the National Science Foundation under grant SES-8200546, and by a grant from the Tinker Foundation through the Institute of Latin American Studies, The University of Texas at Austin.

Intermittent Use and Agricultural Change
on Marginal Lands: The Case of
Smallholders in Eastern Sonora, Mexico

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Paper No. 87-09

Abstract

Most studies of agricultural land use tend to treat change as though it is essentially permanent. This paper argues that in some cases marginal lands are used intermittently, being brought into and taken out of cultivation frequently, rapidly, and repeatedly. Improvements to the land are made each time a parcel is brought back into use so that over extended periods permanent cultivation becomes feasible. A model of intermittent use is first outlined and demonstrated with data from northwest Mexico. The way in which permanent improvements are made is then described. Last, the theoretical implications are discussed.

Studies of agricultural land use treat change as if it is essentially permanent for the system in question. Once land is brought into or taken out of cultivation, it is considered to remain so for an extended period of time. This conceptualization threads through such diverse themes as von Thünen's agricultural land use zones (Peet 1970:181-201; Muller 1973:228-242; Norton and Conkling 1974:44-56; Ewald 1977:123-133), and Boserup's (1965) land use intensities (Brown and Podolefsky 1976:211-238; Sanders and Bein 1976: 593-610; Dato 1978:135-144; Grossman 1984: 135-144).

For the most part, studies have tended to ignore the role of intermittent agricultural land use, a circumstance in which land is brought into and taken out of cultivation frequently, rapidly, and repeatedly for reasons other than fallow. The paucity of attention to intermittent use is probably due to several factors. In some cases it may not be recognized because it involves lands that are perceived to be of little importance--lands of marginal quality, small plots interspersed among larger, permanently cultivated fields, or segments of a zone on the margin of cultivation. In cases where it has been recognized, intermittent use has not been deemed significant in the larger scheme of agricultural change. For example, in his discussion of agricultural expansion, Peet says, "with the resulting increase in supply, prices may fall and the (von Thünen) zones contract again, but in the final equilibrium all zones are wider and the whole system of zones larger"(Peet 1970:187-188).

Understanding intermittent agricultural land use is important for at least two reasons. First, it affects the elasticity of land supply and results in greater land use variability. Second, it can involve the accumulation of capital improvements over a lengthy period of time so that marginal land is transformed into permanently cultivated land. Intermittent use of agricultural land is demonstrated here through the case of smallholders in eastern Sonora, Mexico. The example study is preceded by a overview of the concept of intermittency and is followed by a discussion of its implications.

The Concept of Intermittency

Just as food production varies by place, so does the elasticity of the supply of agricultural land. Where land-extensive circumstances prevail, supply tends to be highly elastic to increased demands (Renne 1947:18). This

