CHAPTER 15

An Ecological Investigation of Agricultural Patterns in the United States

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In a previous chapter, we suggested that the human ecological perspective can facilitate explanation of significant aspects of the structure of agriculture in the United States and external phenomena that impact America’s agriculturally dependent rural areas. In this chapter, we present two empirical analyses that derive from the human ecological perspective. The first examines the impact of the internationalization of agriculture on the rural United States. The second explores the implications of use of irrigation technology for the structure of agriculture and agriculturally dependent rural communities in the Great Plains. We have drawn these particular examples largely from our previous research (Murdock et al. 1991; Albrecht and Murdock 1986b), because they provide an apt demonstration of the utility of the human ecological perspective. Nevertheless, they represent only preliminary steps toward establishing a more complete human ecology of United States agriculture.

In the following discussion, we briefly discuss the conceptual basis, methodology, and findings of each of our analyses. We conclude with an
examination of some of the methodological developments essential to a more comprehensive assessment of the human ecology of U.S. agriculture.

**EFFECTS OF THE INTERNATIONALIZATION OF AGRICULTURE ON RURAL AREAS**

As noted in our previous chapter, analyses of the consequences of the internationalization of agriculture primarily employ the ecological concepts of sustenance activity, key function, dominance, and ecosystem. The historical emphasis in human ecological analyses of sustenance activities has centered on the patterns of dominance in domestic ecosystems. Research has focused on how the sustenance bases of larger population centers dominate areas having smaller populations (Duncan et al. 1960; Hawley 1950, 1971).

In the international ecosystem, however, patterns of international competition determine the vigor of a rural sustenance base by impacting the activities that dominate the sustenance base, its key functions. Some key functions operate primarily within international ecosystems; others operate primarily in regional domestic ecosystems. For a societal subunit, or area, whose specialized activities operate within international ecosystems, the ability of the area’s nation-state to compete internationally in a sustenance activity determines the area’s rate of growth in that sustenance activity.

A basic premise of our analysis is that an area’s competitive dominance in a sustenance activity affects the area’s ability to support its population base. Areas of the United States that specialize in sustenance activities in which the U.S. competitively dominates the international market should be capable of supporting larger population bases and, thus, have higher rates of immigration than those areas specialized in nondominant sustenance activities. Areas specialized in sustenance activities that are dominant in regional ecosystems should show intermediate patterns of population growth. Agriculture is clearly a sustenance activity that operates in an international ecosystem of exchange in which the competitive dominance of the United States has declined. We hypothesize, therefore, that U.S. rural areas whose key function is agriculturally based will show either greater outmigration or reduced immigration compared to other areas of the United States.

Table 15.1 presents a schematic representation of these predicted relationships. Rural areas with key functional sustenance bases which fall in Cell 1 should have higher rates of immigration than those in any other cell, whereas areas falling in Cell 4 should have the lowest levels of immigration. Those areas with sustenance activity specializations which fall in Cells 2 and 3 should have intermediate levels of immigration. Because we assume greater competitive dominance of sustenance activities in Cell 3 than Cell 2, we expect areas falling in Cell 3 to experience higher rates of immigration than those in Cell 2.