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A Map of Subsistence Agriculture

Ingolf Vogeller
St. Cloud State College

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INGOLF VOGELER*

ABSTRACT — American commercial agriculture has undergone an implosion: fewer and larger farms have been concentrated in certain productive areas. But subsistence agriculture has not imploded in the same areas and not to the same extent as commercial farming. A map of subsistence agricultural counties demonstrates the widespread importance of this kind of farming in the eastern United States.

Over the last 25 years the number of farms and the acreage of farm land has decreased dramatically while agricultural production has increased sharply. Concurrently, the best agricultural land has increasingly produced larger proportions of the nation's food and fiber. John Fraser Hart calls this trend "the agricultural implosion" (Hart, 1970). The density of "real farms" is used to define commercial agricultural counties, which are largely concentrated in the Midwest. But despite the contracting spatial dimensions of American agriculture, the total area and number of farms contributing *in some way* to farm production has not decreased as much as the literature might suggest.

Since the 1930's the Census of Agriculture has not counted the number of "self-sufficing farms," where the value of farm products used by the family was 50 percent or more of the total value of all farm products. But to this day, U.S. agriculture is composed of commercial and subsistence sectors. Farms which have gross incomes of at least $10,000 from the sale of farm products can be considered commercial, while subsistence farms are those with gross incomes from $2,500 to $9,999 from the sale of agricultural produce. Although the latter group of farms is defined as "commercial" by the U.S. Department of Agriculture, gross farm incomes of less than $10,000 result in net incomes below the official poverty level (*Rural Poverty,* 1968). In describing American agriculture, Hart's map of commercial agricultural counties portrays the distribution of profitable eastern farming well (Map 1), but he totally ignores the existence of subsistence farming.

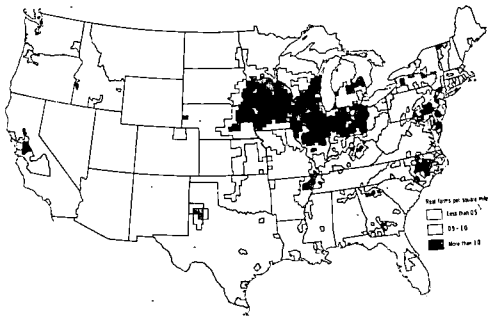
Contrary to popular professional opinion, farming is still a way of life as well as a way of earning a living. Thus, a "real farm" is insufficiently defined as one which "provides an adequate income for the farmer and his family," since off-farm income accounts, on the average, for 28 percent of the total income on these farms. To be sure, off-farm income represents 67 percent, on the average, of all income on subsistence farms (U.S. Department of Agriculture, 1972). But since farm and off-farm income are characteristic of both commercial and subsistence farms, the latter farms should not be excluded from the map of agricultural implosion.

A map of subsistence agricultural counties was constructed to demonstrate the widespread importance of this kind of farming (Map 2). The arbitrarily chosen minimal value of 0.5 farms per square mile for an agricultural county was used to facilitate comparison with Map 1. Given this low density, 1,171 or 37 percent of the nation's counties were classified as subsistence agricultural counties in 1969. These counties accounted for 501,246 or 69 percent of all such farms. Similarly, 555,391 or 64 percent of all "real farms" were concentrated in 960 or 31 percent of the commercial agricultural counties in 1964. Together Maps 1 and 2 accurately depict agricultural counties for medium to small farm areas, which represent 45 percent of the nation's counties or the eastern portion of the United States.

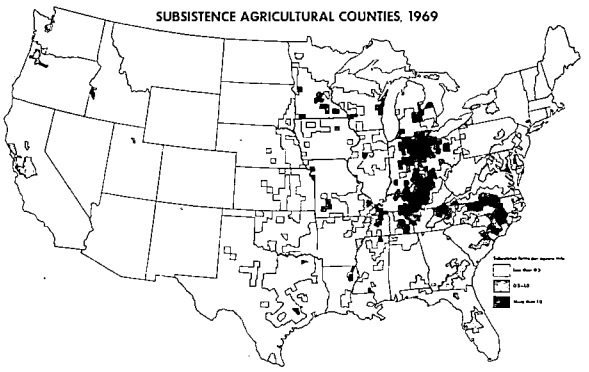
The distribution of subsistence farms is substantially different from that of commercial farms. One of the most striking features of subsistence agriculture is its pervasive distribution in the eastern United States. It coincides with the highest densities of commercial farming and is only absent where profitable agriculture dominates certain counties, such as those in northern Iowa and central Illinois. Map 2 also demarcates "empty areas" (Klimm, 1954), the thinly populated, rural areas of New England, the Appalachain plateau, the Deep South, the Ozarks, and the Flint Hills.

In 1969 the highest densities of subsistence farming were in the upland South and eastern Midwest. The former area contained all but one of the 22 counties with more than two subsistence farms per square mile. The interior plateaus of Kentucky and Tennessee, the ridge and valley of Tennessee and Virginia, and the Piedmont and Coastal Plain of Virginia and North Carolina represent the largest area of low-income farms in the United States. This is an area of small farms — less than 100 acres — and of general farming with tobacco and dairy products providing some cash income. The coefficients of correlation were computed between the number of subsistence farms, by agricultural county, and the number of farms with tobacco acreage and with dairy

*INGOLF VOGELER was born in West Germany and lived in Canada from 1952 to 1968. He received the B.A. degree from the University of Toronto. Both his M.A. and Ph.D. were received from the University of Minnesota. He is currently assistant professor of geography at St. Cloud State College.



Map 1 Commercial Agricultural Counties, 1964. Reprinted by permission from *Proceedings* of the Association of American Geographers, Volume 2, 1970.



Map 2 Subsistence Agricultural Counties, 1969.

cows. The statistically significant (at .001) correlation coefficients between subsistence farms and farms with tobacco acreage were +.929 (Kentucky), +.864 (Tennessee), +.879 (Virginia), and +.905 (North Carolina). The significant associations between subsistence farms and farms with dairy cows were +.829 (Kentucky), +.905 (Tennessee), and +.736 (Virginia).

In a triangle from South Bend to Toledo to Cincinnati, commuter farms constitute the other high density area of subsistence farms. No association between subsistence farms and type of farming occurred in this diversified livestock, dairy, and cash grain area of northeastern Indiana and northwestern Ohio. Nevertheless, significant correlation coefficients were obtained between subsistence farms and farms with less than 100 acres: +.765 for Indiana and +.706 for Ohio.

In addition to small acreages and labor intensive types of farming, several other factors can explain the distribution of high and medium density subsistence farming areas. First, ethnic groups in the Midwest and on the Great Plains homesteaded small farms. For example, in Lavaca County, Texas, Germans and Czechoslovakians initially settled 40- to 70-acre farms (Lindsey, 1974). In Pierce County, Wisconsin, Norwegians selected 40-acre plots (Swain and Mather, 1968). Subsequently, intra-family farm transfers and farm subdivisions, which encouraged the next generation to settle close to their parents, maintained these small farm areas. Today, year-round off-farm and off-season employment allow these farms to persist. Second, urbanites purchase hobby farms for residence, investment, or tax advantages. In Jones County, Texas, and Marshall County, Kansas, Dyes Air Force Base personnel and Union Pacific Railroad employees, respectively, own 20- to 40-acre farms (Clayton, 1974; Oltmanns, 1974). Finally, a number of minor factors, such as certain life styles (as in rural communes and Appalachian mountains), absence of off-farm employment, and inaccessibility, mean that some subsistence farms have total incomes below the poverty line (Vogeler, 1973).

Hart's map of commercial agricultural counties is also designed to improve the traditional delimitation of farming types. The U.S. Department of Agriculture's map of generalized types of farming is based on the dominant type of farming in a given area. Agriculture is described on a national basis, but the density of farms across the country is ignored (U.S. Department of Agriculture, 1950). "A minimum of one real farm for every two square miles" (an agricultural county) is used by Hart to delimit the spatial dimensions of American agriculture (Hart, 1970). The resulting map of agricultural regions, however, excludes almost two-thirds of the nation! A map of types of farming based on subsistence agricultural counties has similar shortcomings, although it does enlarge the livestock farming and tobacco regions and includes parts of the livestock ranching region.

Although the map of commercial agricultural counties does not adequately outline farming types; it does reflect the extent and magnitude of eastern agricultural (as opposed to rural) landscapes. Together the maps of commercial and subsistence agricultural counties are most useful in delimiting the major farm landscapes and "empty areas" of the eastern United States. These maps, then, reveal the broad current settlement matrix: the density of farm houses, barns, and other farm buildings; livestock and crops; fences; roads; small towns and hamlets; cemeteries; and frequently, the relative material well-being of farm life.

In conclusion, agriculture's contribution to the Gross National Product may be a compelling argument to study its economic aspects, but this criterion is inadequate for cultural geographers who are interested in the comprehensive study of farm regions and rural *genre de vie*. In the current *Zeitwandlung* geographers have an especially exciting challenge.

References

Clayton, Kirby. 1974. Personal correspondence with county extension agent from Jones County, Texas.

Hart, John Fraser. 1970. A Map of the Agricultural Implosion. *Proceedings*, Association of American Geographers, 2, pp. 68-71.

Klimm, Lester E. 1954. The Empty Areas of the Northeastern United States. *Geographical Review*, 44, pp. 325-345.

Lindsey, John V. 1974. Personal correspondence with county extension agent from Lavaca County, Texas.

Oltmanns, Paul G. 1974. Personal correspondence with agricultural agent from Marshall County, Kansas.

Rural Poverty in the United States. 1968. A Report by the President's National Commission on Rural Poverty. Washington, D.C.

Swain, Harry and Mather, Cotton. 1968. *St. Croix Border Country*. Prescott, Wisconsin: Trimbelle Press.

U.S. Department of Agriculture. 1950. *Generalized Types of Farming in the United States*. Agriculture Information Bulletin No. 3. Washington, D.C.

U.S. Department of Agriculture. 1972. *Handbook of Agricultural Charts*. Washington, D.C.

Vogeler, Ingolf, 1973. The Peasant Culture of Appalachia and Its Survival. Antipode, 5:1, pp. 17-24.