

EXTENT OF MECHANIZATION IN NORTH CAROLINA

The extent of mechanization in North Carolina is indicated by the rapid adoption of tractors as a source of farm power. There was little change in the number of tractors reported on farms from 1930 to 1940. Approximately three times as many tractors were reported on North Carolina farms in April, 1944 as in 1925. The number of tractors almost doubled from 1940 to 1944. The reported number of tractors on farms for census periods and for 1944 by type-of-farming areas are presented in table 1.

Table 1. The number of tractors in North Carolina by type-of-farming areas, 1925 - 1944.

Type-of-farming areas	Year			
	1925 ^{1/}	1930 ^{1/}	1940 ^{1/}	1944 ^{2/}
Area I	137	339	725	1,441
Area II	334	548	799	1,861
Area III	434	869	1,267	2,702
Area IV	406	684	855	2,350
Area V	379	772	779	1,950
Area VA	268	372	427	936
Area VB	1,361	1,728	1,776	3,076
Area VI	1,467	1,890	1,680	2,513
Area VII	2,659	3,395	3,630	5,761
Area VIII	355	643	640	1,068
Area VIIIA	109	186	178	311
Total	7,909	11,426	12,756	23,969

^{1/} U. S. Census.

^{2/} Reported by the Agricultural Adjustment Administration and the Agricultural Statistics Division of the North Carolina Department of Agriculture, as of April, 1944.

The rate of tractor adoption was not uniform through the State but varied with type-of-farming, physical conditions, and other causes.

Concentration is evident in certain parts of the Coastal Plains, particularly in the Northern Tidewater Area. In the Piedmont there is evident concentration in

the Central and Southern Piedmont Areas, figure 1. In 1944 there were approximately 18 tractors per 100 farms in the Northern Tidewater Area, 18 in the Central Piedmont, 15 in the Northern Coastal Plains, and 12 in the Southern Piedmont. The State average was 7.7 tractors per 100 farms or about one tractor for every 13 farms.

Since the size of farm varies somewhat from area to area, the intensity of tractors per 1,000 acres of cropland is probably more meaningful than the number per 100 farms. The intensity of tractors per 1,000 acres of cropland, however, followed a pattern similar to the distribution of tractors per 100 farms, figure 2.

In the Central Piedmont (Area VII) there were on the average 7 tractors for each 1,000 acres of cropland in 1944, or 143 acres for each tractor. This is the area of greatest intensity of tractors and is followed by the Northern Tidewater Area (Area I) with 5.2 tractors for each 1,000 acres of cropland, or 192 acres for each tractor. The Northern Coastal Plains (Area III) had 4.7 tractors for each 1,000 acres of cropland, or 213 acres for each tractor, and the Southern Piedmont (Area VB) had 4.6 tractors for each 1,000 acres of cropland, or 217 acres for each tractor. The State average in 1944 was 3.5 tractors for each 1,000 acres of cropland, or approximately one tractor for every 286 acres.

In the Coastal Plains

The soils and topography of the Tidewater and Coastal Plains Areas (Areas I, II, III, IV, V, and VA) of the State are suitable to the use of mechanical power and the complementary machinery.

Crop production in this part of the State with the exception of tobacco and some of the truck crops can be mechanized--that is, the prevailing production operations may be done equally as well or better with mechanical as with animal

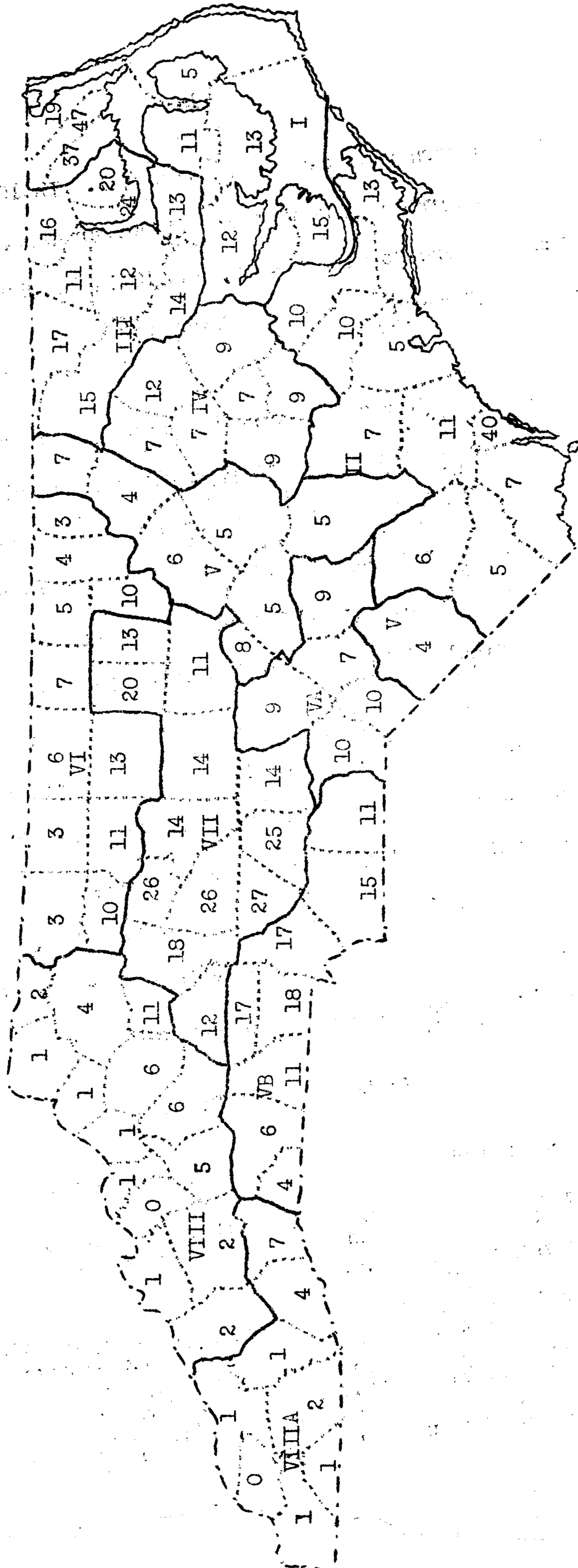


Figure 1. Number of Tractors per 100 Farms in 1944

power. Mechanization of harvesting operations for corn and cotton are yet to be adopted. The possibility of mechanizing the peanut harvest is not as bright as for corn and cotton. Tractor power has not been substituted for animal power in the production of tobacco and of certain truck crops, except in the preparation of land.

The degree to which mechanization of crop production is found in the Coastal Plains depends largely upon cropping systems. The agriculture of Areas I and III is much more completely mechanized and the equipment more fully used than in other sections of the Coastal Plains because of the changing labor organization and the crops grown--peanuts, cotton, corn, soybeans, and small grains--rather than to differences in physical features.

In recent years there has been a tendency to extend the use of mechanical power to more of the usual operations. The use of tractor planters and cultivators is more general in Areas I and III than in any other part of North Carolina. The loss of farm labor, the advantages of timeliness of operations, as well as economy in the use of power has encouraged more complete mechanization in these sections of the Coastal Plains.

In the Piedmont

The topography of the Piedmont varies more widely than that of the Coastal Plains; however, tractors have been more widely used for the preparation of land and harvesting in this part of the State than any other because of the importance of small grains in the organization of general farms.

The Central Piedmont (Area VII) is the most diversified area of the State, having a good balance between crops and livestock. Small grains--wheat, oats, and barley--often followed by lespedeza, are especially adapted to mechanization and

account primarily for the great intensity of tractors in that area. The large number of tractors in this section of the Piedmont are used primarily for land preparation, grain harvest, and belt work and not for planting and cultivation of intertilled crops.

The Southern Piedmont Area (Area VB) is the principal cotton area, but here also mechanized power is used mostly for land preparation, grain harvest and belt work on general farms. The planting and cultivation of intertilled crops with mechanical power has not been extensive in this area.

Tobacco is predominant in cropping systems of the Northern Piedmont (Area VI) and as a consequence the trend toward complete mechanization has been slower than in either of the other Piedmont Areas.

In the Mountains

Extreme variations in topography, together with small farms and small fields, have discouraged the mechanization of agriculture in the Mountain Areas of North Carolina (Areas VIII and VIIIA). However, many tractors are found on small farms with as little as 50 acres of cropland and are used mainly for land preparation.

TRACTORS VERSUS WORKSTOCK AS A SOURCE OF POWER

Farmers in selecting the type of power to be used will be influenced by (1) its cost, (2) the amount of labor required to operate it, and (3) the cost of the complementary equipment required by each type of power. These considerations on the part of farmers are interdependent. It is conceivable that the cost of operating a given type of power might be relatively low, yet the labor and complementary equipment cost may be such as to make the total production cost for power, labor, and equipment higher than the alternative type of power.