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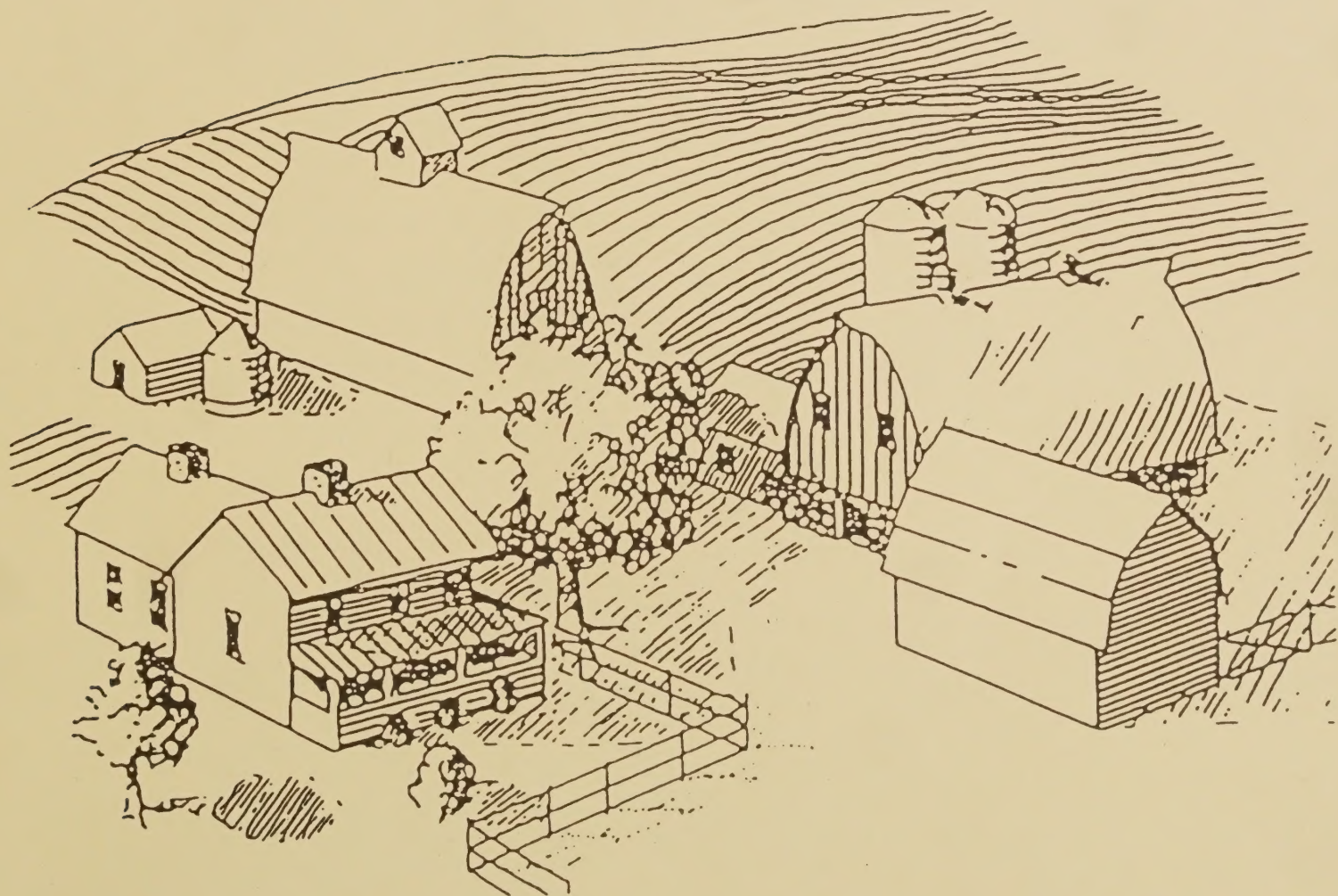
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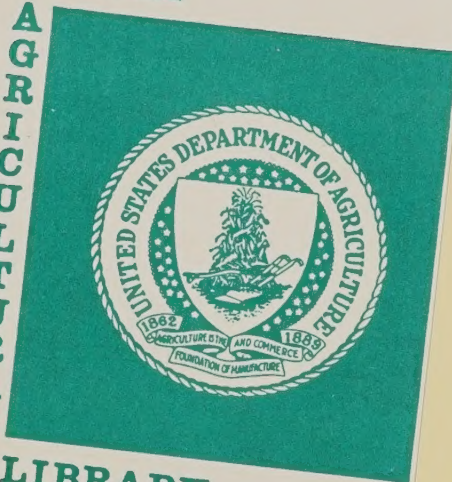
Kentucky's Agricultural Economy By Major Land Resource Area



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KENTUCKY'S AGRICULTURAL ECONOMY
BY MAJOR LAND RESOURCE AREA

KENTUCKY SPECIAL RESOURCES STUDY

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April 1983

KENTUCKY'S AGRICULTURAL ECONOMY BY MAJOR LAND RESOURCE AREA

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PREFACE

This report was prepared by the Economic Research Service in cooperation with the Soil Conservation Service, Forest Service, and the Kentucky Natural Resources and Environmental Protection Cabinet. It is a part of the ongoing USDA Cooperative Kentucky Special Resources Study conducted under Section 6 of PL 83-566.

It is intended that this report provide cooperating agencies and sponsors with historic and recent data and information about Kentucky's general agricultural economy by major land resource area (MLRA). Attention is given to population composition, employment and income, farm structure and farming. The farming section includes major agricultural land use; crop acreage, production, and yield data; soils by class/subclass; livestock and poultry data; information on fertilizer use; costs and price data; and a review of the market value of agricultural products.

KENTUCKY'S AGRICULTURAL ECONOMY

By Daniel E. Kugler¹

INTRODUCTION

For statewide and regional agricultural planning, five major land resource areas (MLRAs) are delineated in the Commonwealth of Kentucky (Map 1). They are:

MLRA 120 Kentucky and Indiana Sandstone and Shale Hills and Valleys

MLRA 121 Kentucky Bluegrass

MLRA 122 Highland Rim and Pennyroyal

MLRA 125 Cumberland Plateau and Mountains

MLRA 134 Southern Mississippi Valley Silty Upland

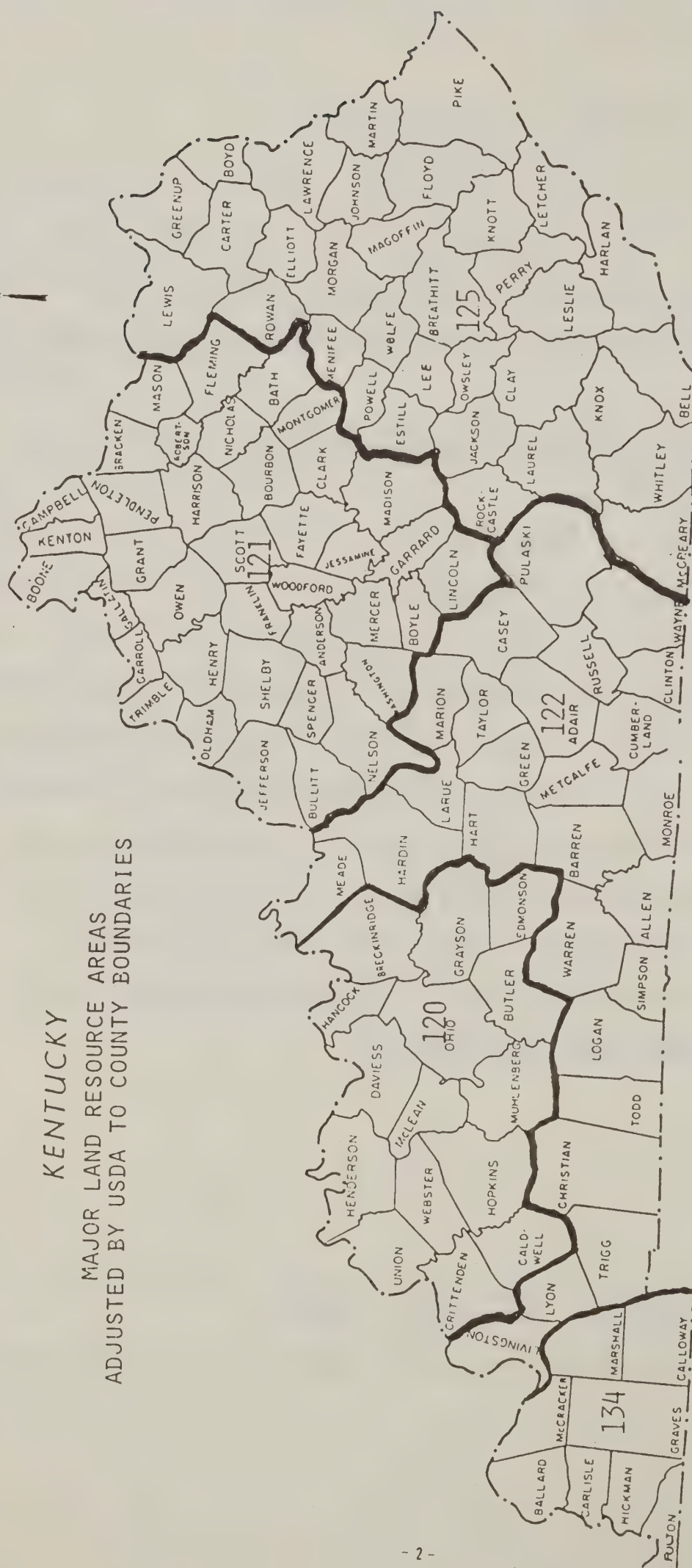
MLRAs are physiographic and geographically associated land resource units characterized by particular patterns of soils, climate, water resources and land uses. To facilitate planning, program administration and implementation, and compilation of data, the MLRAs are adjusted to coincide with county boundaries. Map 1 shows the adjusted MLRA map for Kentucky. Descriptions of land use, elevation and topography, climate, water, soils, and potential natural vegetation for each MLRA can be found in Land Resource Regions and Major Land Resource Areas of the United States.²

¹Economist, Natural Resource Economics Division, Economic Research Service, U.S. Department of Agriculture, East Lansing, Michigan.

²USDA, Soil Conservation Service, Agricultural Handbook 296, revised December, 1981.

Map 1: Map of Kentucky Depicting Major Land Resource Areas

KENTUCKY MAJOR LAND RESOURCE AREAS ADJUSTED BY USDA TO COUNTY BOUNDARIES



- 120 KENTUCKY AND INDIANA SANDSTONE AND SHALE HILLS AND VALLEYS
- 121 KENTUCKY BLUEGRASS
- 122 HIGHLAND RIM AND PENNYROYAL
- 125 CUMBERLAND PLATEAU AND MOUNTAINS
- 134 SOUTHERN MISSISSIPPI VALLEY SILTY UPLANDS

(For descriptions of the major land resource areas, see Agricultural Handbook 296, "Land Resource Regions and Major Land Resource Areas of the United States," Soil Conservation Service, U.S. Department of Agriculture.)

ALBERTA LAND AREA COMPILED AND REPRODUCED AT 1:100,000 SCALE. KENTUCKY LAND AREA COMPILED AND REPRODUCED AT 1:100,000 SCALE. ALL OTHER AREAS COMPILED AND REPRODUCED AT 1:100,000 SCALE. BASE MAP COMPILED FROM U.S. NATIONAL BASE MAPS AND 1:500,000 STATE BASE MAP.

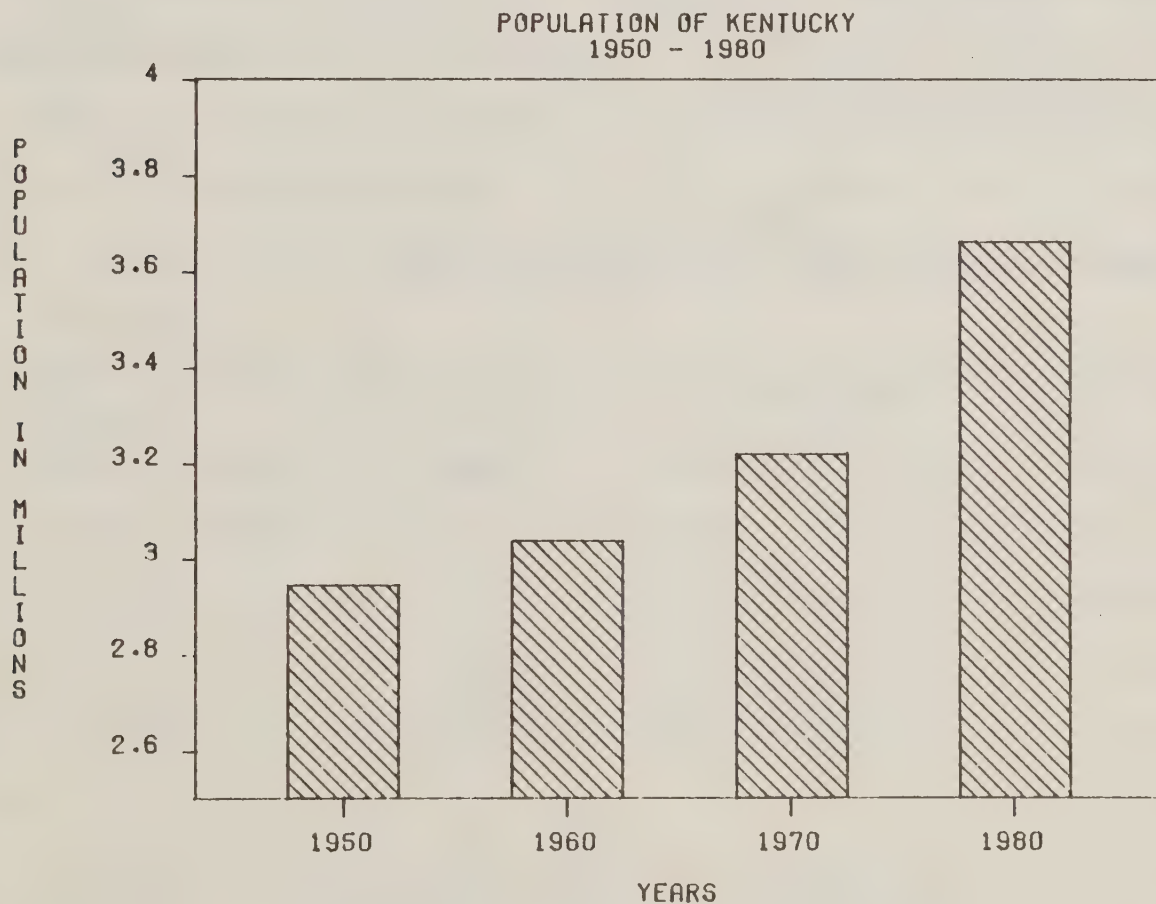
POPULATION

Total Population and Net Migration

State

Kentucky's population grew from 2.94 million inhabitants in 1950 to 3.66 million inhabitants in 1980 (chart 1; table 1). Although there was population growth in each decade from 1950 to 1980, the 1970-1980 decade increase of 440,000 inhabitants was the largest, primarily due to changing migration patterns.

Chart 1



Source: U.S. Census of Population

Net migration, defined as the excess of population growth over natural increase (births minus deaths), was negative for both the 1950-1960 and 1960-

Table 1--Total population by MLRA for Kentucky, 1950-1980

	1950	1960	1970	1980
MLRA 120	303,883	301,507	316,697	358,881
MLRA 121	1,208,647	1,410,503	1,601,405	1,747,619
MLRA 122	473,103	490,303	509,304	596,878
MLRA 125	808,941	678,906	623,930	776,531
MLRA 134	150,232	147,817	167,370	180,348
Kentucky	2,944,806	3,038,156	3,218,706	3,660,257

Source: U.S. Census of Population

Table 2--Net migration by MLRA for Kentucky, 1950-1980

	1950-1960	1960-1970	1970-1980
		x 1000	
MLRA 120	- 40	- 8	25
MLRA 121	11	30	32
MLRA 122	- 71	- 34	44
MLRA 125	-278	-143	94
MLRA 134	- 9	3	10
Kentucky	-387	-152	205

Source: U.S. Census of Population

1970 decades (table 2). Negative net migration, or out-migration, substantially offset natural increase and resulted in population growth rates of just 3 percent and 6 percent, respectively, for the decades. The 1970-1980 decade shows positive net migration or in-migration enhancing the natural increase. In-migration contributed 205,000 persons or 46 percent to the decade's population growth.

MLRA Highlights

After two decades of severe out-migration and decreasing total population, the revitalization and resurgence of the coal industry during the 1970-1980 decade contributed to in-migration and total population growth in MLRA 125 which was the largest of any MLRA in the state. During the decade, the Mountains MLRA population increased by 153,000 inhabitants or 24.5 percent. More than 61 percent (94,000 inhabitants) of the total growth was attributable to in-migration.

MLRA 121's total population increased by more than half a million from 1950-1980 and accounted for 75 percent of the state's increase during that 30 year period. Characterized by the urban/suburban areas of Louisville, Lexington/Richmond, Frankfort and Covington, the Bluegrass MLRA maintained total population growth and in-migration each decade. As the most populous of Kentucky's MLRAs, the Bluegrass's growth has come primarily from natural increase.

Urban/Rural and Farm/Nonfarm Composition

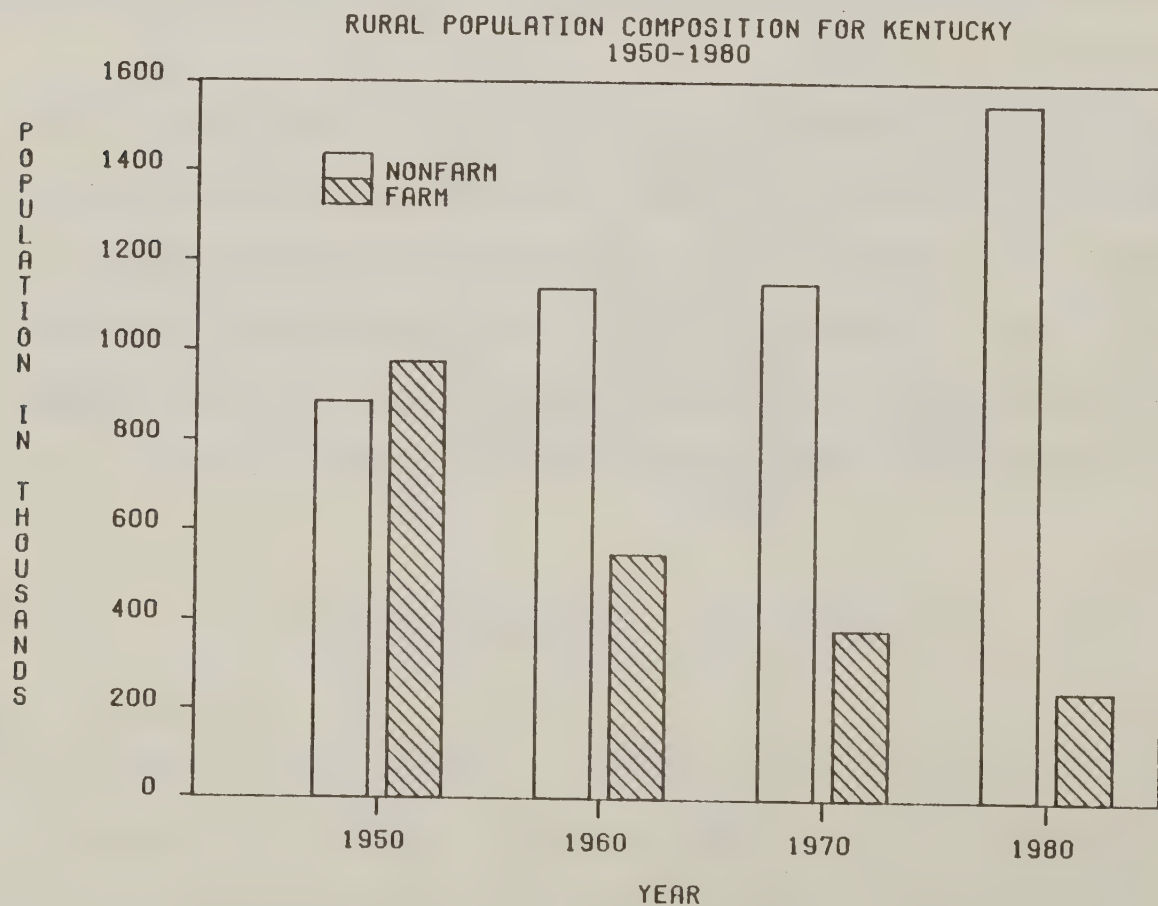
State

While the state's population has shown increased rates of growth in each decade from 1950 to 1980, the composition of the population has undergone dramatic changes (table 3). The urban population increased in absolute number

during each decade. As a percent of the total population, urban increased from 36.8 percent in 1950 to 52.3 percent in 1970. The 1970-1980 decade shows the urban percent of total population decreasing slightly to 50.9 percent.

As the urban population was increasing from 1950 to 1970, the rural population was decreasing because the rural farm population was losing more people than the rural non-farm was gaining (chart 2). The 1970-1980 decade turned this trend around. Although the rural farm population continued to decline, reaching 246,000 people or 6.7 percent of the total population in 1980, the rural non-farm population increased by almost 35 percent to 1,553,000. The net effect was an increased rural population and, because rural population increased more than urban, an increase in the rural share of the total population.

Chart 2



Source: U.S. Census of Population

The changes in population composition, particularly from 1970 to 1980, are only indicative of other changes which occurred.¹ For example, the expanding urban/suburban population centers and movement of people to rural non-farm areas created unprecedented new demands for rural land for residences, businesses, recreation, energy development, transportation, etc. The magnitude of these demands and the resulting conversion of land to non-farm uses spurred a flurry of federal, state and local governmental concerns for preservation and retention of prime and important farmlands which continues into the 80's.

In Kentucky, such pressures are evidenced by House Resolution No. 63 of March 17, 1982, and House Bill No. 744 of March 18, 1982. HR-63 authorized a comprehensive study of the loss of farmland in Kentucky and the programs needed to prevent further losses. HB-744, the Agricultural District and Conservation Act, because of "pressure imposed by urban expansion, transportation systems, water impoundments, surface mining of mineral resources, utility rights-of-way and industrial development" established the means for creating agricultural districts in Kentucky. Land in an agricultural district, among other things, is freed from possible annexation as a benefit or incentive for protection and conservation of the agricultural land base.

MLRA Highlights

MLRA 121 has steadily accounted for about 70 percent of the total urban population for Kentucky. In 1980, the Bluegrass's 1.27 million urban population was nearly 35 percent of the state's total population.

¹For an overview see Natural Agricultural Lands Study - Final Report, 1981.

MLRA 125, the Mountains, has maintained the largest rural population from 1950 to 1980. However, the farm-nonfarm composition has changed from approximately 1:1 in 1950 to 1:20 by 1980. The 601,000 rural nonfarm population constituted 77 percent of the MLRA's total population and 39 percent of the state's total rural nonfarm population.

The rural farm population decreased the least in MLRA 121 from 1950 to 1980. The 62 percent loss in the Bluegrass left 86,000 people in rural farms in 1980, the largest farm population MLRA in the state. The 81 percent rural farm population decrease from 1950 to 1980 for MLRA 125 was the largest for any MLRA in the state, leaving just 30,000 people or 9 percent of the 1950 total on the farm. In 1980, the nearly 81,000 rural farm population in MLRA 122, the Pennyroyal, constituted nearly 14 percent of the MLRA's total population, as compared with 7 percent at the state level.

Table 3--Urban/Rural and Farm/Nonfarm population composition by MLRA for Kentucky, 1950-1980

	1950	1960 ^{1/}	1970	1980 ^{2/}
MLRA 120				
TOTAL	303,883	301,507	316,697	358,881
Urban	83,694	101,267	124,592	144,859
Rural	220,189	200,240	192,105	214,022
Farm	113,729	70,218	46,807	32,169
Nonfarm	106,460	130,022	145,298	181,853
MLRA 121				
TOTAL	1,208,647	1,410,503	1,601,405	1,747,619
Urban	746,041	958,258	1,175,184	1,271,965
Rural	462,606	452,173	426,221	475,654
Farm	230,269	163,569	128,672	86,637
Nonfarm	232,337	288,676	297,549	389,017
MLRA 122				
TOTAL	473,103	490,303	509,304	596,878
Urban	70,725	110,877	192,172	226,336
Rural	402,378	379,426	318,132	370,542
Farm	248,102	173,018	124,520	80,923
Nonfarm	154,276	206,410	192,612	289,619
MLRA 125				
TOTAL	808,941	678,906	623,930	776,531
Urban	132,533	122,192	124,052	146,052
Rural	676,408	556,714	499,878	630,479
Farm	326,655	109,059	60,830	29,835
Nonfarm	349,753	447,655	439,048	600,644
MLRA 134				
TOTAL	150,232	147,817	167,370	180,348
Urban	51,077	60,899	69,445	72,451
Rural	99,155	96,038	97,925	107,897
Farm	55,415	31,991	20,867	16,434
Nonfarm	43,740	64,047	77,058	91,463
KENTUCKY				
TOTAL	2,944,806	3,038,156	3,218,706	3,660,257
Urban	1,084,070	1,351,979	1,685,445	1,861,663
Rural	1,860,736	1,686,177	1,533,261	1,798,594
Farm	974,170	546,868	381,696	245,998
Nonfarm	886,566	1,139,309	1,151,565	1,552,596

^{1/} Urban/rural and farm/nonfarm figures for 1960 were derived. The State total does not equal the sum of the MLRAs due to rounding.

^{2/} 1980 definitions were used for farm/nonfarm figures. Final count rural population allocated by percent farm or nonfarm from summary tape file 3A.

Source: U.S. Census of Population

EMPLOYMENT AND INCOME

Labor Force

Kentucky's average annual civilian labor force (table 4) increased 32 percent from 1,228,000 in 1970 to 1,621,000 in 1980. Labor force expansion is closely related to the population increases. The urban/suburban population growth in MLRA 121 had a corresponding 158,000 person or 23 percent expansion to 841,000 in the available labor force between 1970 and 1980. MLRA 125, characterized by a surge in energy development and the highest percent increase in population of any of the MLRAs, showed a labor force increase from 178,000 to 278,000 during this period, a 56 percent gain. MLRA 122 showed a 74,000 or 42 percent gain in labor force.

Employment/Unemployment

State

With the exception of 1975, average annual employment in Kentucky grew each year, increasing 27 percent from 1,174,000 in 1970 to 1,489,000 in 1980 (table 5). Using the unemployment rate as an indication of the soundness and stability of the Kentucky economy, three peaks in unemployment are apparent, and each successive peak was at a higher level. In 1972, the labor force had expanded faster than employment, resulting in a 5.9 percent unemployment rate. In 1975, employment contracted faster than the labor force, resulting in a 7.3 percent unemployment rate. In 1980, as in 1972, the labor force grew faster than employment, resulting in an 8.1 percent unemployment rate.¹ Successively higher rates of unemployment applied to successively larger labor forces created, in an absolute sense, more individuals seeking employment and/or assistance than ever before experienced in Kentucky.

¹1981 data indicates 6.6 percent unemployment with a 1,662,000 labor force and 1,522,000 employment.

Table 4--Annual average civilian labor force by MLRA for Kentucky, 1970-1980.

[illegible]

Source: Kentucky Department for Human Resources, Labor Market Information Section.

MLRA Highlights

In the 1970-1980 period, employment in the mountainous MLRA 125 increased 51 percent from 166,000 to 250,000. The growth in MLRA 125, while impressive, is still marred by chronic high unemployment. In all but two instances, the unemployment rate for MLRA 125 was the highest of any MLRA for any year from 1970 to 1980 in the state. The high unemployment, somewhat characteristic of eastern Kentucky, has been accentuated by fluctuations in the energy extraction industry.

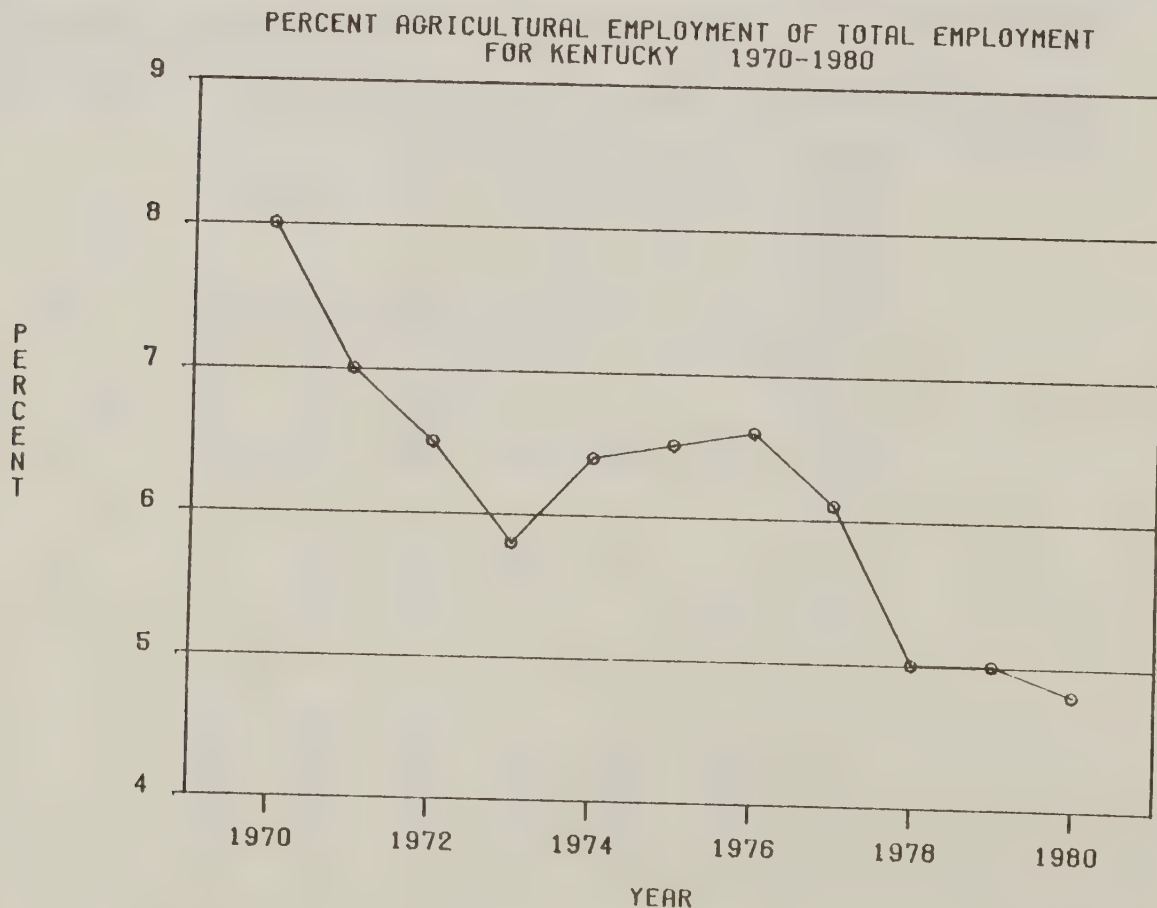
MLRA 121 includes the Louisville, Lexington-Frankfort and Covington metropolitan areas of the Bluegrass. With only one exception, MLRA 121s more varied and diversified economic climate maintained the lowest unemployment rate of any Kentucky MLRA in any of the 1970-1980 years. The 19 percent growth in employment for the Bluegrass was well below the state's 27 percent rate but accounted for nearly 40 percent (124,000) of the state's 315,000 increase in employment from 1970 to 1980.

Agricultural Employment

With only those persons whose full-time or primary profession is agriculture counted, the 1970-1980 period shows both attrition in the level of agricultural employment and in the percent agricultural employment of total employment throughout the state (table 6). Agricultural employment fell from 94,100 or 8.0 percent of total state employment in 1970 to 71,300 or 4.8 percent of total state employment in 1980 (Chart 3).

MLRA 121 (Bluegrass) and MLRA 122 (Pennyroyal) accounted for 75 percent of agricultural employment in 1980. Although the Bluegrass had the largest number employed in agriculture (30,200), it contributed just 3.9 percent to total employment for the MLRA. The Pennyroyal's 23,400 employed in agriculture in 1980 accounted for 10.2 percent of the total employment.

Chart 3



Source: Kentucky Department for Human Development, Labor Market Information Section.

Table 6--Annual average agricultural employment and percent agricultural employment of total employment by MLRA for Kentucky, 1970-1980

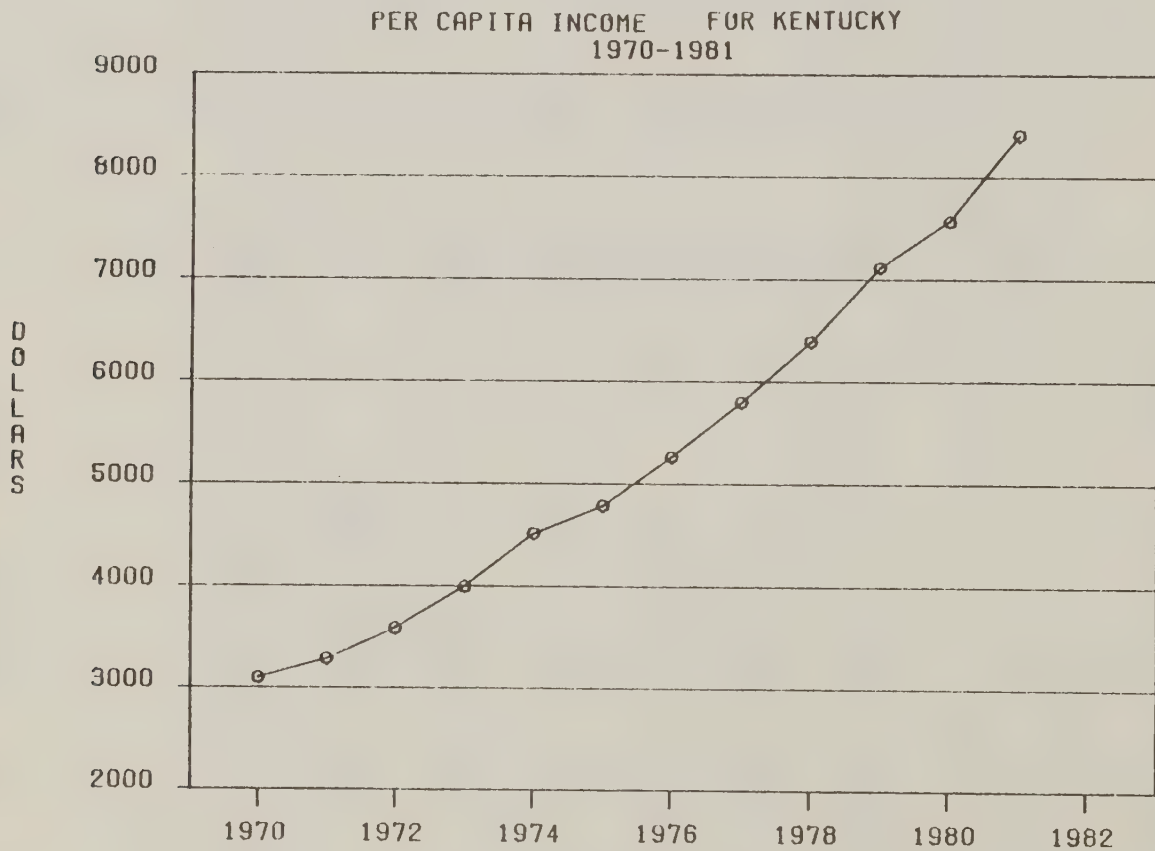
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Source: Kentucky Department for Human Resources, Labor Market Information Section.

Per Capita Income

From 1970 to 1981, per capita income in Kentucky increased from \$3096 to \$8416 (table 7a). This is equivalent to an average annual rate of increase of approximately 9.5 percent. Since each year's per capita income level was higher than the previous year's and, with the exception of 1974-75 and 1979-1980, the gross dollar increase was higher in each successive year, the upward curving plot of per capita income depicted in Chart 4 results.

Chart 4



Source: Kentucky Council of Economic Advisors, Kentucky Economic Information System, University of Kentucky, Lexington, Kentucky.

One way to put per capita income growth into perspective is to convert the per capita income from actual or nominal dollars to real dollars using the

consumer price index. The procedure adjusts per capita income to the prevailing rate of inflation and reflects the real or true purchasing power of income. Table 7b shows the results of computing real per capita income. In constant 1967 dollars (1967 = 1.000), real per capita income in Kentucky increased from \$2662 to \$3090 from 1970 to 1981. This is equivalent to an average annual rate of real per capita income increase of just 1.5 percent.

A nominal per capita income rate increase of 9.5 percent compared with a real per capita income rate increase of 1.5 percent for the 1970-1981 period shows that most of the increase has been off-set by relatively high and persistent rates of inflation. In fact, the overall purchasing power of income has not done much better than keep pace with inflation.

MLRA 121, the Bluegrass area which includes the state's major urban areas and industrial/commercial developments, maintains the highest per capita income in the state. In 1981, the Bluegrass' nominal per capita income was \$9579, nearly 14 percent higher than the state average.

The Mountains and Pennyroyal areas, respectively MLRAs 125 and 122, have maintained the lowest nominal per capita incomes. In 1981, the Mountain's \$6705 was 20 percent lower than the state average of \$8416 while the Pennyroyal's \$7003 was 17 percent lower.

Table 7a--Per Capita Income by Major Land Resource Area for Kentucky, 1970-1981

[illegible]

Source: Kentucky Council of Economic Advisors, Kentucky Economic Information System, University of Kentucky, Lexington, Kentucky.

Table 7b--Real and Nominal Per Capita Income for Kentucky, 1970-1981

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Real Per Capita Income ¹												
Real Dollars	2662	2706	2862	3003	3057	2970	3087	3194	3270	3275	3066	3090
Nominal Per Capita Income ²												
Nominal Dollars	3096	3282	3586	3997	4515	4788	5263	5797	6389	7119	7567	8416
Consumer Price Index ³												
Index	1.163	1.213	1.253	1.331	1.477	1.612	1.705	1.815	1.954	2.174	2.468	2.724

¹Real per capita income equals nominal per capita income divided by the consumer price index for a given year. It adjusts nominal dollars (unadjusted for inflation) to real dollars (adjusted for inflation) to reflect the real purchasing power of income.

²Nominal per capita income is the actual per capita income for a given year. Source: Kentucky Council of Economic Advisors, Kentucky Economic Information System, University of Kentucky, Lexington, Kentucky.

³The consumer price index (cpi) is a measure of inflation: the cost of a given basket of market goods purchased by a typical urban wage earner for a given year based on the year 1967 = 1.000. Source: U.S. Department of Labor, Bureau of Labor Statistics.

FARM STRUCTURE

Farms and Farm Size

State

For Kentucky, the period from 1964 to 1978 shows the number of farms with harvested acreage decreasing from 124,000 to 94,000 while harvested cropland on these farms increased from 3.2 to 4.0 million acres (table 8).¹ Very generally, fewer farms with more harvested acreage per farm has been the trend. This trend holds for farm sizes up to 500 acres harvested. The two largest farm size ranges, 500 - 999 and 1000+ acres, show both more farms and more harvested acreage per farm.

Cumulatively, in 1964, farms of 500 or more acres accounted for 2.7 percent of all farms with harvested acres and 16.4 percent of the harvested acres. By 1978, the concentration increased to 4.5 percent of the farms and 28.7 percent of the acreage. If all farms with 260 or more acres harvested are examined, the totals changed from 10.6 percent of farms and 40.1 percent of acreage in 1964 to 14.4 percent of farms and 53.9 percent of acres in 1978.

MLRA Highlights

MLRA 134, the Purchase Area, provides one exception to the state trends. Both number of farms with harvested acreage and the average harvested acres per farm increase beginning with the 260 - 499 acre farm size. MLRA 125, the Mountains, provides another exception, showing decreased numbers of farms for all farm size ranges.

¹Acreages will be less than those reported under Major Agricultural Land Use due to the numerous disclosure restrictions applied to data by farm size.

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Table 8--Number of farms with harvested cropland, acres of harvested cropland and average acres of harvested cropland per farm by farm size by MLRA for Kentucky, 1964 - 1978.

MLRA	Units	Farm Size												All Farms		
		1-259 acres			260-499 acres			500-999 acres			1000 + acres					
		1964	1969	1978	1964	1969	1978	1964	1969	1978	1964	1969	1978	1964	1969	1978
120	No. of farms Thou. acres Av. acres/farm	13599 342 25	11496 265 23	9744 330 34	1692 189 112	1677 185 110	1525 251 165	586 147* 251	619 156* 252	739 237* 321	133 38* 286	169 92* 544	240 147* 613	15970 716 45	13961 698 50	1224 96 7
121	No. of farms Thou. acres Av. acres/farm	33348 584 18	30516 462 15	27564 551 20	3331 221 66	3420 211 62	3317 264 80	867 97* 112	972 120 123	1136 153* 135	172 33* 192	160 32* 200	179 39* 218	37718 935 25	35068 825 24	3219 100 3
122	No. of farms Thou. acres Av. acres/farm	34909 643 18	31102 561 18	26857 656 24	2829 242 85	2789 224 80	2761 332 120	795 131* 165	854 144 169	1039 267* 257	138 5* *	153 36* 235	229 106* 462	38671 1021 6	34898 965 28	3088 136 4
125	No. of farms Thou. acres Av. acres/farm	22424 192 9	15186 127 8	12004 123 10	1385 40 30	1243 32 26	1107 34 31	374 17* 45	347 17 49	289 12* 42	70 4* 57	88 5* 57	30 1* 33	24253 253 10	16864 181 11	1343 17 1
134	No. of farms Thou. acres Av. acres/farm	6246 161 26	5110 145 28	4213 191 45	509 67 132	517 81 157	533 130 243	150 47 313	198 70* 354	276 143 518	24 8* 333	39 15* 385	90 48* 533	6929 283 41	5864 311 53	511 51 10
Kentucky	No. of farms Thou. acres Av. acres/farm	110486 1922 17	93410 1560 17	80382 1851 23	9746 759 78	9646 733 76	9243 1011 109	2772 439 158	2990 507 170	3479 812 233	537 88 164	609 180 296	768 341 444	123541 3208 26	106655 2980 28	93872 401 4

Source: Census of Agriculture. 1978 is unadjusted for underenumeration.

*Disclosure restrictions for county level confidentiality preclude reasonable totals or averages for the MLRA.

MLRA's 134 and 120 show the largest average harvested acreage per farm through each farm size range. MLRA's 121 and 122 have the most farms and, combined, accounted for 58 percent of all with harvested acreage farms in the state.

Farm Tenure

State

The number of farm operators in Kentucky decreased from 125,000 in 1969 to 102,000 in 1974 and remained at that level in 1978 (table 9). The bulk of the change is attributed to a 20,000 loss in full owners from 1969 to 1974. From 1974 to 1978, a 5,000 shift in farm operators occurred from full owners to the total of part owners and tenants.

MLRA Highlights

Although MLRA 125 would not be classified as a commercial agricultural region, 77 percent of farm operators were full owners in 1978, the highest percent in the state. MLRA 134, the Purchase Area, had the lowest percent of full owners (58 percent) and the highest percent of part owners (31 percent). The percent of tenancy ranged from 7 to 14 percent with MLRA 122, the Pennyroyal, the highest at 14 percent.

When land in farms is compared with the number of farm operators, MLRAs 120 and 134 show 188 and 162 acres of land in farms per farm operator. MLRA 125, the Mountains, has the lowest with 118 acres of land in farms per farm operator. MLRAs 121 and 122 fall in the middle with 139 and 135 acres, respectively.

Table 9. Farm tenure by MLRA for Kentucky, 1969-1978.

MLRA	Year	All Farm Operators	Full Owners	Part Owners	Tenants
MLRA 120	1969	16,875	12,578	2,775	1,522
	1974	14,007	9,891	2,985	1,131
	1978	13,592	8,833	3,369	1,390
MLRA 121	1969	39,866	28,952	5,482	5,532
	1974	33,554	24,552	5,074	3,928
	1978	34,852	24,187	5,877	4,788
MLRA 122	1969	40,435	31,942	5,387	3,106
	1974	33,522	25,511	5,561	2,450
	1978	33,461	23,715	6,689	3,057
MLRA 125	1969	19,726	16,546	2,227	953
	1974	14,262	11,564	2,035	663
	1978	14,198	10,910	2,248	1,040
MLRA 134	1969	8,167	6,142	1,510	515
	1974	6,708	4,564	1,703	441
	1978	6,160	3,579	1,928	653
Kentucky	1969	125,069	96,160	17,381	11,628
	1974	102,053	76,082	17,358	8,613
	1978	102,263	71,224	20,111	10,928

Source: Census of Agriculture.

Type of Organization

Over the three most recent census years, the individual or family farm for the state of Kentucky has averaged about 84 percent of all farms with sales of \$2500 or more (table 10). Partnerships have averaged about 15 percent and the combined total for corporations and other farms has averaged just 1 percent. MLRA breakdowns by type of farm closely parallel that of the state.

Commercial and Noncommercial Farms

State

Presently farms with \$2500 or more in value of all products sold are considered commercial farms. Data on number of farms, acres of harvested cropland and market value of agricultural products between all farms and farms with sales of \$2500 or more are presented in tables 11 and 12. In 1978, commercial farms in Kentucky accounted for \$1.78 of \$1.81 billion in sales of all agricultural products for all farms. These commercial farms held 97 percent of the harvested cropland and 78 percent of farms with harvested cropland.

Examining table 11 from the non-commercial perspective, 22 percent of farms (22,152 farms) accounted for just 3 percent (151,000 acres) of harvested acreage and just \$38 million in sales in 1978. This averaged less than \$2000 in sales per non-commercial farm. By comparison, commercial farms averaged \$22,500 in sales per farm.

Off-Farm Work

State

While the absolute number of operators of farms in Kentucky with sales of \$2500 or more increased for 1969 to 1974, the percent of those operators with

Table 10--Type of organization for farms with sales of \$2500 or more by MLRA for Kentucky, 1969-1978.

	1969	1974	1978
MLRA 120			
Individual/Family	6814	8345	9050
Partnership	1315	992	1564
Corporation	55	44	102
Other	30	11	16
MLRA 121			
Individual/Family	18969	20901	22489
Partnership	4520	3388	5354
Corporation	199	171	301
Other	155	53	91
MLRA 122			
Individual/Family	16837	20108	22147
Partnership	3267	2261	3761
Corporation	91	101	205
Other	66	25	39
MLRA 125			
Individual/Family	3973	5858	7332
Partnership	560	400	854
Corporation	31	14	51
Other	19	2	32
MLRA 134			
Individual/Family	3386	4477	4423
Partnership	541	408	651
Corporation	11	22	34
Other	9	3	10
Kentucky			
Individual/Family	49979	59689	65441
Partnership	10203	7449	12184
Corporation	387	352	693
Other	279	94	188

Source: Census of Agriculture.

Table 11--All farms v. farms with sales of \$2500 or more: comparison of number of farms with harvested cropland and acres of harvested cropland for Kentucky, 1969-1978.

		1969	1974	1978
Number of farms with harvested cropland	All farms	106,561	92,468	100,986
	Farms with \$2500+ sales (percent all farms)	58,292 (54)	65,227 (71)	78,834 (78)
Harvested cropland x 1000 acres	All farms	3,128	3,701	4,607
	Farms with \$2500+ sales (percent all farms)	2,787 (89)	3,488 (94)	4,456 (97)

Source: Census of Agriculture. 1978 totals are corrected for underenumeration.

Table 12--All farms v. farms with sales of \$2500 or more: comparison of market value of agricultural products¹ by MLRA for Kentucky, 1978.

	All agricultural products	Crops	Livestock and poultry
	-----million dollars-----		
MLRA 120			
All farms	303	193	110
Farms with \$2500+ sales	298	190	108
MLRA 121			
All farms	705	321	384
Farms with \$2500+ sales	693	314	379
MLRA 122			
All farms	567	279	288
Farms with \$2500+ sales	556	272	284
MLRA 125			
All farms	96	54	42
Farms with \$2500+ sales	87	47	40
MLRA 134			
All farms	142	102	40
Farms with \$2500+ sales	141	101	40
Kentucky			
All farms	1813	949	864
Farms with \$2500+ sales	1775	924	851

¹Excludes forest products.

Source: Census of Agriculture.

off-farm work increased from 47 to 59 percent (table 13). Those operators with more than 200 days work off farm increased from 23 to 38 percent.

MLRA Highlights

In 1978, MLRAs 121 and 122 had the highest percentage of operators with no off-farm work, 42 and 43 percent of all operators, respectively. In MLRA 134, the Purchase Area, 49 percent of all operators had 200 or more days of off-farm work.

Table 13--Operators of farms with sales of \$2500 or more with off-farm work
by MLRA for Kentucky, 1969-1978.

	1969	1974	1978
MLRA 120			
None	4,317	3,111	3,885
1-99	1,149	711	1,070
100-199	546	617	838
200+	2,192	2,640	4,212
MLRA 121			
None	12,545	8,662	10,924
1-99	4,388	2,293	3,402
100-199	1,531	1,522	2,213
200+	5,379	6,115	9,416
MLRA 122			
None	11,292	7,963	10,636
1-99	3,485	2,005	3,305
100-199	1,307	1,410	2,178
200+	4,177	5,190	8,668
MLRA 125			
None	2,269	2,139	2,906
1-99	749	550	922
100-199	410	605	935
200+	1,155	1,653	2,985
MLRA 134			
None	1,909	1,542	1,651
1-99	503	116	461
100-199	273	315	285
200+	1,262	1,555	2,264
Kentucky			
None	32,342	23,417	30,002
1-99	10,274	5,675	9,160
100-199	4,067	4,469	6,444
200+	14,165	17,153	27,545

Source: Census of Agriculture

FARMING

Agricultural Land Use and Crop Production

State

Agricultural Land Use

Total land in farms for Kentucky decreased from 18.0 million acres in 1954 to 14.6 million acres in 1978 (table 14). The components of this 3.4 million acre decline are (1) a 1.5 million acre decrease in woodland on farms, (2) a .9 million acre loss of cropland pasture, coming primarily after the lifting of acreage restrictions in the early 1970's and (3) a .7 million acre reduction in pastureland.

Harvested cropland, after decreasing to a historic low of 3.1 million acres in 1969, dramatically re-expanded to again reach 4.5 million acres by 1978 (Chart 5). Favorable export market conditions and foreign demands for U.S. agricultural products were contributing factors to the re-expansion.

Chart 5

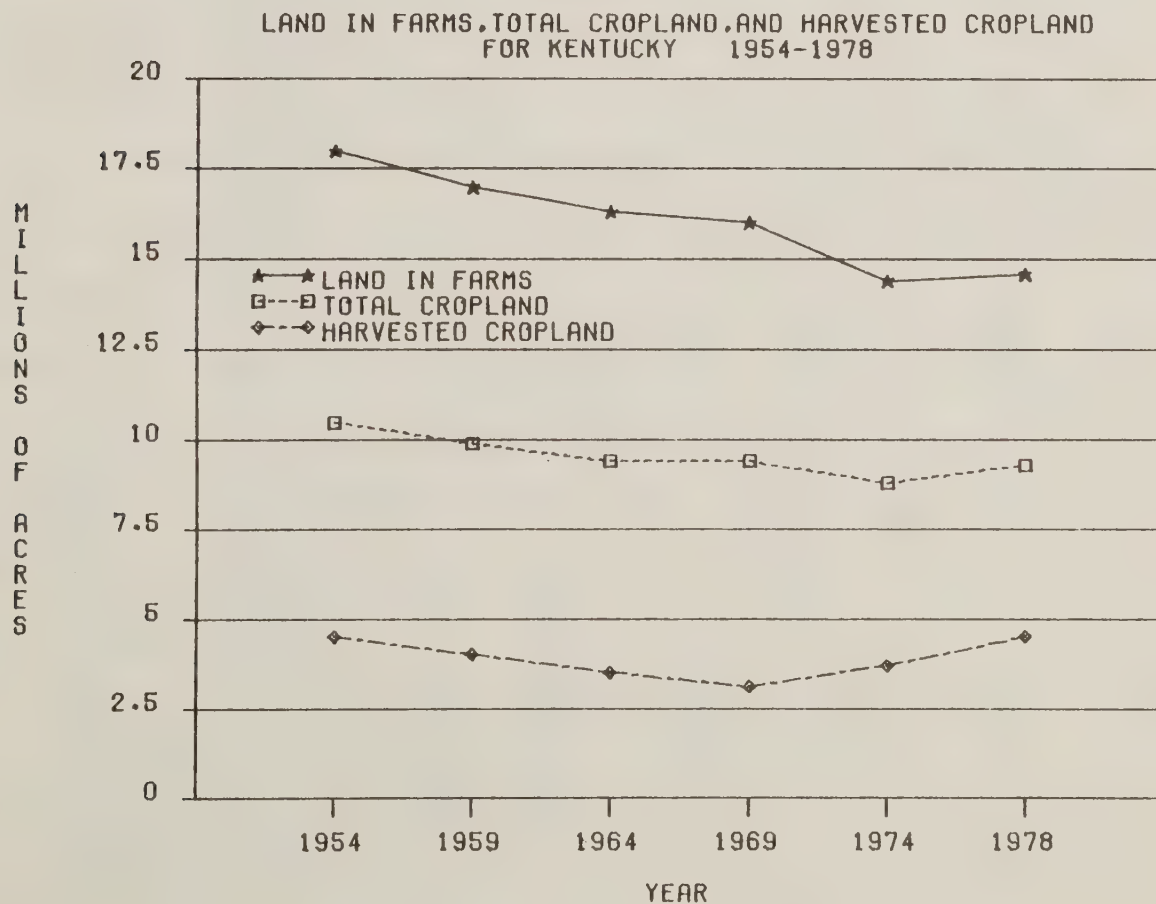


Table 14--Land in farms and agricultural land use, State of Kentucky, 1954-1978.

Surface area -- 25,852,800 acres

	1954	1959	1964	1969	1974	1978 ^{2/}
Land in farms	18,034,380	17,030,675	16,265,242	15,968,243	14,431,713	14,606,168
Total cropland	10,455,193	9,927,197	9,364,095	9,443,454	8,803,159	9,297,858
Harvested	4,541,381	4,012,962	3,473,051	3,128,222	3,700,920	4,511,837
Cropland pasture	4,879,874	4,740,357	4,571,851	4,915,575	4,487,186	3,992,500
All other cropland	1,033,938	1,173,878	1,319,193	1,399,657	615,053	793,521
Total woodland	4,850,232	4,495,817	4,246,536	3,822,882	3,206,278	3,358,989
Pastureland and rangeland	1,759,403	1,628,334	1,824,334	1,476,004 ^{3/}	1,420,868 ^{3/}	1,069,756
Other land	969,552	979,327	830,372	1,225,907 ^{3/}	991,408 ^{3/}	878,208
Irrigated land	13,434	8,605	14,405	19,587	10,920	12,797 ^{1/}

¹Due to the withholding of data to avoid disclosure of information for individual farms, this inventory acreage is low.

²State averages from the Census of Agriculture for 1978 are the sum of individual county totals and are not adjusted for under enumeration.

³Estimated.

Source: Census of Agriculture.

Although the agricultural community in the 1970's had an adequate land resource base to call upon for re-expansion, it was not the same lands as in 1954. Experts maintained that prime and important land in farms continued to be converted to competing, nonagricultural uses at an alarming rate. Loss of these lands meant that additional demands would be met by production on marginal or less productive land. Higher fertilizer, lime and pesticide use, more input of fossil fuels and labor, improved management and more acreage were characteristic substitutions to attempt to restore productive capacity. Typically, these substitutions increased erosion, sedimentation, water quality and energy problems.

Increased use of variable inputs to sustain economically competitive yield levels on less inherently productive land increased per acre costs of production. To compensate for decreasing net returns per acre because of increased costs, farmers attempted to expand their farm operations by purchase or lease. The demand for land to increase farm size and for conversions to nonagricultural uses served to drive up the cost of land as a variable input to production.

The key to successful long term farming through the 1970's re-expansion and into and through the economic crisis in farming of the early 1980's seems to have been financial solvency and management. Farmers who began the re-expansion with a good farmland base and who were financially solvent are still farming. Many of those who rode the coattails of the re-expansion by borrowing their way into agriculture, with limited finances and agricultural management skills, are experiencing financial distress and bankruptcy during the 1980's economic crisis.

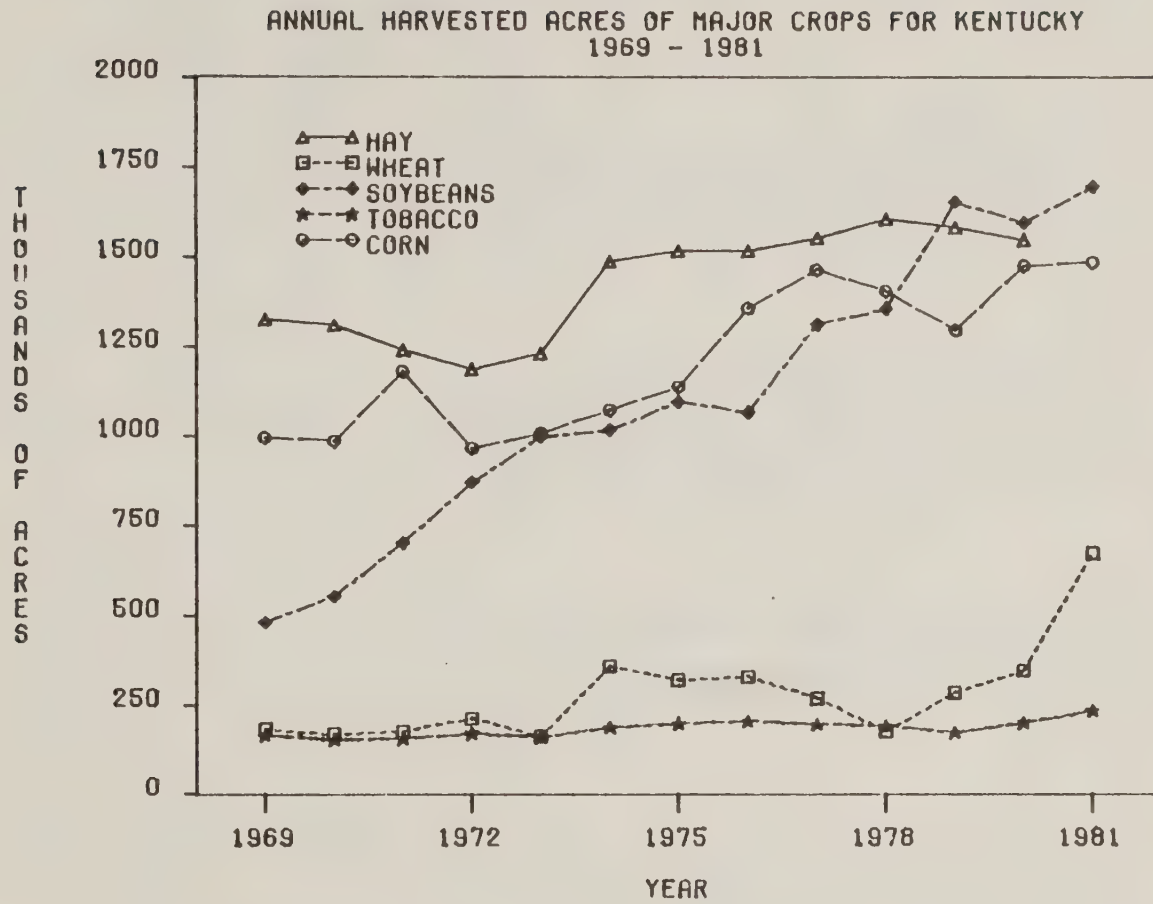
Production

Data for the 1954 to 1978 period shows that corn yields had almost tripled, that soybean yields had almost doubled, that hay yields had risen 65 percent, and that wheat and tobacco yields had increased about 50 percent (table 15).

In 1978, hay crops (1.41 million acres), corn (1.33 million acres) and soybeans (1.23 million acres) dominated production on agricultural land. The tobacco acreage has averaged around 200,000 acres through the 1954-1978 period while under either acreage or poundage allotment programs. As more and more farmers successfully double crop soybeans on land fall-planted to winter wheat, wheat acreage has risen to average nearly 345,000 acres over the years 1974-1981 (Appendix 1, table B).

Soybeans have been the expansive crop over the last 25 years. Soybean acreage in 1978 was ten times the 1954 acreage with a 75 percent yield improvement. Annual data from the Statistical Reporting Service for 1979, 1980 and 1981 shows that acres of soybeans in Kentucky, surpassed both hay crops and corn for grain for the first time in history (Chart 6).

Chart 6



Source: USDA, Statistical Reporting Service

Table 15 - Area, production and yield of major crops, State of Kentucky, 1954-1978.

Crop	Unit	1954	1959	1964	1969	1974	1978 ^{2/3/}
Corn-grain	acres	1,864,813	1,581,268	980,843	864,818	975,401	1,331,566
	1000xbushels	57,282	70,153	54,269	64,365	78,232	110,069
	bushels/acre	30.7	44.4	55.3	74.4	85.0 ^{1/}	82.7
Corn-silage	acres	97,714	68,792	94,478	114,274 ^{1/}	159,247 ^{1/}	96,923
	tons, green	499,195	513,481	1,022,297	1,653,742 ^{1/}	2,282,064 ^{1/}	2,505,463
	tons/acre	5.11	7.46	10.82	14.47	14.33	25.9
Wheat	acres	209,455	158,388	152,972	156,645	331,421	168,575
	1000xbushels	5,161	3,877	4,908	5,272	10,460	5,989
	bushels/acre	24.6	24.5	32.1	33.7	31.6	35.5
Soybeans	acres	126,636	181,019	236,135	391,458	874,551	1,234,373
	1000xbushels	2,102	4,015	5,166	10,614	21,559	35,747
	bushels/acre	16.6	22.2	21.9	27.1	24.7	29.0
Tobacco	acres	277,252	211,692	210,379	162,323	179,078	210,327
	1000xpounds	411,726	335,099	396,114	375,548	388,147	447,584
	pounds/acre	1,485	1,583	1,883	2,314	2,167	2,128
Hay	acres	1,444,912	1,471,039	1,556,114	1,280,296	1,308,729	1,411,344
	tons, dry	1,695,931	2,140,913	2,355,161	2,250,232	2,421,976	2,731,736
	tons/acre	1.17	1.46	1.50	1.76	1.85	1.94
Other tame	acres						1,099,208
dry hay	tons						1,871,604
	tons/acre						1.70

1/ Estimated using Class 1-5 farm data.

2/ Due to restrictions in the disclosure of information for individual farms in counties, area and production figures for 1978 may be low.

3/ State acreages from the Census of Agriculture for 1978 are the sum of individual county totals and are not adjusted for underenumeration.

Note: All yields were computed before rounding production to nearest 1000 for applicable crops.

Source: Census of Agriculture

MLRA Agricultural Land Use and Production Summaries

MLRA 120 - Kentucky and Indiana Sandstone and Shale Hills and Valleys,

(Western Coal Fields)

Although total cropland decreased by 132,000 acres from 1954 to 1978, harvested cropland increased by 203,000 acres primarily from conversion of cropland pasture to harvested cropland (table 16). MLRAs 120 and 134 were the only Major Land Resource Areas to show more harvested cropland acreage in 1978 than 1954. The Western Coal Field's 1,153,000 acres accounted for more than 25 percent of the state's harvested cropland in 1978.

Like the state, re-expansion of cropland during the 1970's came largely from rapidly increasing acreage cultivated in soybeans (table 17). In 1978, soybeans approached half a million acres and from 1979-1981 surpassed acres in corn (Appendix 1, tables A and C). SRS data for 1981 indicates more than 600,000 acres in soybeans, as MLRA 120 continued to be the largest soybean producing area of the state, with yields generally averaging 27-32 bushels per acre.

The Western Coal Fields area also has been the leading producer of corn for grain, with nearly a half a million acres cultivated and yields that generally range 85-110 bushels per acre and exceed the state average. Corn for grain and soybeans accounted for 81 percent of harvested cropland in 1978.

Acreage in hay crops has remained fairly stable, averaging 192,000 acres over the six agricultural census years from 1954 to 1978.

Table 16--Land in farms and agricultural land use in MLRA 120 for Kentucky, 1954-1978

Surface area -- 4,026,880 acres

	1954	1959	1964	1969	1974	1978
Land in farms	2,881,363	2,668,402	2,643,977	2,695,422	2,527,547	2,555,211
Total cropland	1,850,977	1,746,701	1,665,976	1,695,196	1,646,079	1,719,040
Harvested	949,718	868,656	775,649	744,500	948,474	1,153,280
Cropland pasture	707,351	615,325	587,196	629,658	581,639	435,712
All other cropland	193,908	262,720	303,131	321,038	115,966	130,048
Total woodland	639,344	594,694	595,947	598,773	521,396	543,573
Pastureland and rangeland	144,818	117,422	208,258	190,319 ^{2/}	201,780 ^{2/}	144,541
Other land	246,224	209,585	173,637	211,134 ^{2/}	158,292 ^{2/}	148,057
Irrigated land	957	74	903	799	815	490 ^{1/}

¹ Due to the withholding of data to avoid disclosure of information for individual farms, this inventory acreage is low.
² Estimated.

Source: Census of Agriculture.

Table 17-Area, production and yield of major crops in MLRA 120 for Kentucky, 1954-1978.

Crop	Unit	1954	1959	1964	1969	1974	1978 ^{2/3/}
Corn-grain	acres	500,827	429,232	292,250	322,788	358,488	481,327
	1000xbushels	16,488	17,838	17,446	25,165	29,855	42,509
Corn-silage	bushels/acre	32.9	41.6	59.7	78.0	81.4 ^{1/}	88.3
	acres	10,846	7,901	11,432	13,106 ^{1/}	14,615 ^{1/}	7,078
Wheat	tons, green	49,961	51,214	120,397	163,893 ^{1/}	186,002 ^{1/}	143,224
	tons/acre	4.61	6.48	10.53	12.51	12.73	20.24
	acres	46,750	37,467	33,551	30,554	85,558	24,563
	1000xbushels	1,166	853	1,046	1,008	2,755	887
Soybeans	bushels/acre	25.0	22.8	31.2	33.0	32.2	36.1
	acres	83,535	132,932	161,723	184,236	335,009	452,894
Tobacco	1000xbushels	1,468	2,932	3,585	4,990	8,429	13,219
	bushels/acre	17.6	22.1	22.2	27.1	25.2	29.2
Hay	acres	25,935	18,998	19,324	14,635	14,368	18,044
	1000xpounds	34,008	23,856	33,309	28,565	29,276	36,342
	pounds/acre	1,311	1,256	1,724	1,952	2,038	2,014
	acres	200,004	199,431	221,456	169,239	180,554	184,015
Other tame	tons, dry	239,748	297,858	308,955	297,584	314,898	310,108
	tons/acre	1.20	1.49	1.39	1.76	1.74	1.69
dry hay	acres						152,591
	tons						249,352
	tons/acre						1.63

^{1/} Estimated using Class 1-5 farm data.

^{2/} Due to restrictions in the disclosure of information for individual farms in counties, area and production figures for 1978 may be low.

^{3/} State acreages from the Census of Agriculture for 1978 are the sum of individual county totals and are not adjusted for underenumeration.

Note: All yields were computed before rounding production to nearest 1000 for applicable crops.

Source: Census of Agriculture

MLRA 121 - Kentucky Bluegrass (Bluegrass)

From 1954 to 1978 land in farms for MLRA 121 decreased by 331,000 acres while total cropland remained very stable at approximately 3.2 million acres, 35 percent of the state's total cropland (table 18). Harvested cropland followed the state's re-expansion pattern to show 1.1 million acres in 1978.

With the focus of the Bluegrass area on the horse racing industry and livestock operations, the most significant factor is the amount of total cropland in cropland pasture. In 1978, nearly 60 percent (1.9 of 3.3 million acres) of total cropland was in cropland pasture while harvested cropland accounted for only 22 percent of land in farms.

Thus, it is not surprising in 1978 to find MLRA 121 with 671,000 acres of hay crops (nearly 50 percent of the state) and 40,000 acres in corn-silage (41 percent of the state) (table 19). In addition, the Bluegrass area plants about 50 percent of the state's total tobacco acreage and achieves better than average yields. In 1978, 102,000 acres of tobacco averaged about 2,300 pounds per acre.

The 204,000 acres in corn for grain in 1978 is just about average for the six census points and the yield is generally higher than the average state yield. Soybeans acreage, although increased nearly 9 fold, amounted to only 37,000 acres in 1978.

Table 18 - Land in farms and agricultural land use in MLRA 121 for Kentucky, 1954-1978.

Surface area -- 6,165,760 acres

	1954	1959	1964	1969	1974	1978
Land in farms	5,185,490	5,223,703	5,079,018 ¹	5,114,426	4,737,588	4,854,404
Total cropland	3,245,787	3,229,996	3,157,892	3,330,851	3,058,279	3,256,995
Harvested	1,209,730	1,083,420	978,694	850,978	912,662	1,076,428
Cropland pasture	1,892,395	1,965,790	1,929,123	2,163,702	1,949,974	1,913,983
All other cropland	143,662	180,786	250,075	316,171	195,643	266,584
Total woodland	738,636	754,890	739,410	744,107	679,996	775,965
Pastureland and rangeland	941,843	949,889	919,806	682,440 ²	667,089 ²	532,414
Other land	259,224	288,928	260,786	357,028 ²	332,224 ²	289,021
Irrigated land	7,605	6,133	9,359	14,494	7,580	8,226 ¹

¹ Due to the withholding of data to avoid disclosure of information for individual farms, this inventory acreage is low.

² Estimated.

Source: Census of Agriculture.

Table 19—Area, production and yield of major crops in MLRA 121 for Kentucky, 1954–1978

Crop	Unit	1954	1959	1964	1969	1974	1978 ^{2/3/}
Corn-grain	acres	299,932	270,298	161,906	140,614	178,098	203,568
	1000xbushels	10,618	13,948	9,599	11,087	14,835	18,301
Corn-silage	bushels/acre	35.4	51.6	59.3	78.9	82.3	89.9
	acres	47,417	35,694	39,402	47,796	70,328	39,800
	tons, green	300,908	294,742	459,953	725,459	1,071,740	1,149,391
	tons/acre	6.34	8.26	11.67	15.18	15.24	28.9
Wheat	acres	55,125	25,516	24,085	19,586	36,729	17,963
	1000xbushels	1,360	527	680	603	1,202	582
Soybeans	bushels/acre	24.7	20.7	28.3	30.8	32.7	32.4
	acres	4,342	4,204	5,407	7,355	14,053	37,266
Tobacco	1000xbushels	66	91	111	197	333	1,158
	bushels/acre	15.1	21.6	20.6	26.8	23.7	31.1
	acres	133,876	104,311	104,213	80,033	95,442	101,546
Hay	1000xpounds	206,673	171,685	190,505	202,018	217,849	230,305
	pounds/acre	1,544	1,646	1,828	2,524	2,283	2,268
	acres	518,570	556,701	591,478	525,155	533,769	670,691
Other tame dry hay	tons, dry	683,858	864,273	981,401	938,407	1,005,091	1,236,046
	tons/acre	1.32	1.55	1.66	1.79	1.88	1.84
	acres						457,787
	tons						801,729
	tons/acre						1.75

^{1/} Estimated using Class 1-5 farm data.

^{2/} Due to restrictions in the disclosure of information for individual farms in counties, area and production figures for 1978 may be low.

^{3/} State acreages from the Census of Agriculture for 1978 are the sum of individual county totals and are not adjusted for underenumeration.

Note: All yields were computed before rounding production to nearest 1000 for applicable crops.
Source: Census of Agriculture

MLRA 122 - Highland Rim and Pennyroyal (Pennyroyal)

From 1954 MLRA 122's land in farms decreased 535,000 acres to 4.5 million acres in 1978 (table 20). Losses in total cropland (-256,000 acres) and woodland (-227,000 acres) were the major components. During the cropland re-expansion of the 1970's, MLRA 122's harvested cropland acreage reached 1.5 million acres or 35 percent of the state's total harvested cropland. Cropland pasture's 187,000 acre loss from 1954 to 1978 accounted for nearly three-fourths of the loss in total cropland.

Corn for grain, with 460,000 acres in 1978, was grown on more acres than any other crop in the Pennyroyal area (table 21). Through 1964, MLRA 122 was the leading corn producer in the state. The 1969-1978 period shows MLRA 122 second in acreage and production to MLRA 120, the Western Coal Fields area.

Average annual SRS data for 1979-1981 shows a gradual shift to MLRA 122 again as the leading corn producer in the state, accomplished through an acreage expansion which reached 526,000 acres in 1981 and more than offset the historic yield advantage which MLRA 120 has demonstrated (Appendix 1, table A). Yields in MLRA 122 have averaged 88 bushels per acre for 1976-1980 while MLRA 120 averaged 93 bushels/acre.

Soybeans were grown on 350,000 acres in 1978 (28 percent of state soybean acreage) with a higher average yield (28-35 bushels/acre) than the state. SRS data shows the soybean acreage to have grown steadily through the 1979-1981 period to reach 520,000 acres in 1981, making MLRA 122 the second leading soybean producing area in the state while moving MLRA 134 to third place (Appendix 1, table C).

Roughly half of the state's wheat production also comes from MLRA 122. In 1978, 92,000 acres of wheat were grown with an average yield of 36 bushels/acre.

Historically about 28 percent of tobacco and 34 percent of hay acreage and production in the state has been in the Pennyroyal. The proportionately high acreages in hay crops and corn silage, as in the Bluegrass, are indicative of a strong livestock (cow-calf) industry.

Table 26- Land in farms and agricultural land use in MIRA 122 for Kentucky, 1954-1978.

Surface area -- 6,607,360 acres

	1954	1959	1964	1969	1974	1978
Land in farms	5,050,622	4,993,409	4,858,494	4,866,005	4,404,115	4,516,180
Total cropland	3,180,309	3,154,992	2,949,564	2,942,524	2,719,340	2,924,229
Harvested	1,508,544	1,351,500	1,157,099	1,006,457	1,160,750	1,476,216
Cropland pasture	1,408,385	1,439,037	1,385,588	1,480,120	1,388,244	1,194,182
All other cropland	263,380	364,455	406,877	455,947	170,346	221,805
Total woodland	1,316,616	1,304,653	1,279,616	1,239,129	1,057,012	1,090,264
Pastureland and rangeland	298,984	268,760	412,743	324,138 ^{2/}	348,436 ^{2/}	246,212
Other land	254,713	265,004	214,920	369,214 ^{2/}	279,327 ^{2/}	255,475
Irrigated land	4,311	1,701	3,691	3,942	1,867	2,579 ^{1/}

^{1/} Due to the withholding of data to avoid disclosure of information for individual farms, this inventory acreage is low.

^{2/} Estimated.

Source: Census of Agriculture.

Table 21. - Area, production and yield of major crops in MLRA 122 for Kentucky, 1954-1978.

Crop	Unit	1954	1959	1964	1969	1974	1978 ^{2/3/}
Corn-grain	acres	647,285	561,748	358,479	289,065	322,119	459,613
	1000xbushels	18,662	25,247	19,205	20,055	25,052	36,934
Corn-silage	bushels/acre	28.8	44.9	53.6	69.4	77.8 ^{1/}	80.4
	acres	24,836	15,012	28,046	39,852 ^{1/}	56,918 ^{1/}	39,466
Wheat	tons, green	98,138	120,448	307,702	578,154 ^{1/}	806,821 ^{1/}	1,033,228
	tons/acre	3.95	8.02	10.97	14.51	14.18	26.2
Soybeans	acres	87,524	79,824	73,525	81,291	147,798	91,784
	1000xbushels	2,151	2,145	2,456	2,899	4,774	3,324
Tobacco	bushels/acre	24.6	26.9	33.4	35.7	32.3	36.2
	acres	4,182	6,335	9,800	30,897	201,593	350,261
Hay	1000xbushels	50	142	190	858	5,257	10,735
	bushels/acre	11.9	22.4	19.4	27.8	26.1	30.6
Other tame dry hay	acres	77,654	58,514	58,283	46,082	48,435	61,236
	1000x pounds	114,489	93,133	118,639	100,308	100,538	125,328
	pounds/acre	1,474	1,592	2,036	2,177	2,076	2,047
	acres	479,906	487,532	523,241	428,181	441,278	499,065
	tons, dry	510,188	710,011	800,282	764,751	843,120	934,765
	tons/acre	1.06	1.46	1.53	1.79	1.91	1.87
	acres						367,037
	tons						634,917
	tons/acre						1.73

^{1/} Estimated using Class 1-5 farm data.

^{2/} Due to restrictions in the disclosure of information for individual farms in counties, area and production figures for 1978 may be low.

^{3/} State acreages from the Census of Agriculture for 1978 are the sum of individual county totals and are not adjusted for underenumeration.

Note: All yields were computed before rounding production to nearest 1000 for applicable crops.
Source: Census of Agriculture

MLRA 125 - Cumberland Plateau and Mountains (Mountains)

With a focus on energy extraction and forestry industries and with severe topographic and soils limitations constraining commercial agriculture, land in farms in MLRA 125 decreased more than 2 million acres from 1954 to just 1.7 million acres in 1978 (table 22). Only 36 percent or 605,000 acres of the land in farms was cropland and only 29 percent or 177,000 acres of cropland was classified as harvested. This was the smallest harvested cropland area for any of the MLRAs in the state, even though the MLRA 125 has the greatest surface area. Hay crops with 112,000 acres accounted for 63 percent of harvested cropland in 1978 (table 23).

In 1978, the Mountains' second most land using crop was corn for grain with 31,000 acres, just 2 percent of the state total with usually much lower than state average yields (75-90 bushels per acre). Tobacco's 21,000 acres in 1978 was 10 percent of the state total, also with much lower than average yields (2000-2300 pounds per acre).

SRS data for 1978-1981 show some increases in corn acreage and production but MLRA 125's proportion of the state's totals still remain very small (Appendix 1, table A).

Table 22 - Land in farms and agricultural land use in MLRA 125 for Kentucky, 1954-1978.

Surface area -- 7,431,680 acres

	1954	1959	1964	1969	1974	1978
Land in farms	3,705,224	3,072,805	2,631,575	2,248,969	1,775,578	1,680,945
Total cropland	1,327,445	1,020,178	817,561	732,216	642,047	605,087
Harvested	446,981	342,538	238,761	160,773	168,926	176,565
Cropland pasture	552,309	441,249	367,011	406,450	389,270	302,129
All other cropland	328,155	236,391	211,789	164,993	83,851	126,393
Total woodland	1,943,995	1,669,429	1,466,400	1,081,104	826,421	831,840
Pastureland and rangeland	308,272	244,409	233,253	226,238 ^{2/}	145,926 ^{2/}	118,479
Other land	125,512	138,789	113,943	209,411 ^{2/}	161,184 ^{2/}	124,190
Irrigated land	229	411	135	171	321	536 ^{1/}

¹ Due to the withholding of data to avoid disclosure of information for individual farms, this inventory acreage is low.

² Estimated.

Source: Census of Agriculture.

Table 23. -Area, production and yield of major crops in MLRA 125 for Kentucky, 1954-1978.

Crop	Unit	1954	1959	1964	1969	1974	1978 ^{2/3/}
Corn-grain	acres	191,921	135,773	56,266	29,243	40,293	30,668
	1000xbushels	6,264	5,375	2,805	1,994	2,555	2,571
Corn-silage	bushels/acre	32.6	39.6	49.9	68.2	63.4 ^{1/}	83.8
	acres	2,816	2,081	4,852	5,446 ^{1/}	10,888 ^{1/}	4,738
Wheat	tons, green	7,332	13,002	43,578	80,530 ^{1/}	127,270 ^{1/}	108,861
	tons/acre	2.60	6.25	8.98	14.79	11.69	23.0
Soybeans	acres	1,916	881	387	423	662	538
	1000xbushels	35	18	9	14	19	16
Tobacco	bushels/acre	18.5	19.9	23.1	32.6	28.5	30.2
	acres	825	989	568	849	1,776	3,093
Hay	1000xbushels	13	17	12	24	39	82
	bushels/acre	16.3	17.3	20.4	27.7	22.2	26.4
Other tame	acres	25,536	20,274	19,318	15,584	16,014	21,057
	1000x pounds	40,732	32,851	39,049	33,953	31,813	39,820
dry hay	pounds/acre	1,595	1,620	2,021	2,179	1,987	1,891
	acres	181,636	158,123	143,342	102,118	99,826	111,757
Other tame	tons, dry	186,426	169,008	161,159	147,665	157,229	170,180
	tons/acre	1.03	1.07	1.12	1.45	1.58	1.52
dry hay	acres						86,118
	tons						127,064
dry hay	tons/acre						1.48

^{1/} Estimated using Class 1-5 farm data.

^{2/} Due to restrictions in the disclosure of information for individual farms in counties, area and production figures for 1978 may be low.

^{3/} State acreages from the Census of Agriculture for 1978 are the sum of individual county totals and are not adjusted for underenumeration.

Note: All yields were computed before rounding production to nearest 1000 for applicable crops.

Source: Census of Agriculture

MLRA 134 - Southern Mississippi Valley Silty Uplands (Purchase Area)

The Purchase Area has nearly a million acres of land in farms over a surface area of just 1.6 million acres (table 24). In 1978, nearly 80 percent (793,000 acres) of land in farms was cropland and nearly 80 percent (629,000 acres) of cropland was harvested.

The 1954 to 1978 period shows MLRA 134's total cropland decreasing 52,000 acres while harvested cropland increased 203,000 acres, largely from conversion of cropland pasture to harvested cropland. This large increase in harvested cropland can be explained by the emergence and subsequent dominance of commodity production by soybeans. Soybean acreage increased from 34,000 to 391,000 acres during this period, thus displacing some acreage from other crops and monopolizing the cropland pasture conversion (table 25). Soybean yields generally range from 25 to 32 bushels per acre in MLRA 134, the third largest producing area of the state. More recent 1978-1981 SRS annual data shows that soybean acreage has continued to increase, reaching nearly half-a-million acres in the Purchase Area (Appendix 1, table C).

The SRS 1979-1981 annual data for winter wheat also shows record high acreage in each successive year as more and more farmers successfully double crop wheat with soybeans (Appendix 1, table B). Yields are generally ranging from 35 to 40 bushels per acre. More than 175,000 acres of winter wheat were produced in 1981.

Corn yields generally ranged from 80 to 105 bushels per acre. Acreage in corn production has averaged about 160,000 acres for the five year 1977-1981 period (Appendix 1, table A).

Table 24--Land in farms and agricultural land use in MLRA 134 for Kentucky, 1954-1978.
Surface area -- 1,621,120 acres

	1954	1959	1964	1969	1974	1978
Land in farms	1,211,681	1,072,356	----- 1,052,178 -----acres-----	1,043,421	986,885	999,428
Total cropland	850,675	775,330	773,102	742,667	737,414	792,507
Harvested	426,408	366,848	322,848	365,514	510,108	629,348
Cropland pasture	319,434	278,956	302,933	235,645	178,059	119,502
All other cropland	104,833	129,526	147,321	141,508	49,247	43,657
Total woodland	211,641	172,151	165,163	159,769	121,453	117,346
Pastureland and rangeland	65,486	47,854	50,118	52,869 ^{2/}	57,634 ^{2/}	28,110
Other land	83,879	77,021	63,464	88,116 ^{2/}	70,384 ^{2/}	61,465
Irrigated land	332	286	317	181	337	966 ^{1/}

¹ Due to the withholding of data to avoid disclosure of information for individual farms, this inventory acreage is low.
² Estimated.

Source: Census of Agriculture.

Table 25--Area, production and yield of major crops in MLRA 134 for Kentucky, 1954-1978.

Crop	Unit	1954	1959	1964	1969	1974	1978 ^{2/3/}
Corn-grain	acres	224,848	184,217	111,942	83,108	76,388	156,390
	1000xbushels	5,249	7,746	5,215	6,064	5,935	9,753
Corn-silage	bushels/acre	23.3	42.1	46.6	73.1	78.1 ^{1/}	62.4
	acres	11,799	8,104	10,746	8,074 ^{1/}	7,004 ^{1/}	5,841
	tons, green	42,856	34,075	90,667	96,065 ^{1/}	86,768 ^{1/}	70,759
	tons/acre	3.63	4.20	8.44	11.90	12.39	12.1
Wheat	acres	18,140	14,700	21,424	24,791	60,674	33,727
	1000xbushels	448	335	717	748	1,711	1,179
	bushels/acre	24.6	22.8	33.5	30.2	28.2	35.0
Soybeans	acres	33,752	36,559	58,637	168,121	322,120	390,859
	1000xbushels	506	833	1,268	4,546	7,500	10,556
	bushels/acre	15.0	22.8	21.6	27.1	23.3	27.0
Tobacco ^{2/}	acres	14,251	9,595	9,241	5,989	4,819	8,444
	1000x pounds	15,823	13,573	14,612	10,704	8,671	15,789
	pounds/acre	1,110	1,415	1,581	1,787	1,799	1,860
Hay	acres	64,796	69,252	76,597	55,603	53,302	45,816
	tons, dry	75,711	99,763	103,364	101,825	101,638	80,637
	tons/acre	1.17	1.44	1.35	1.83	1.91	1.76
Other tame	acres						35,675
dry hay	tons						58,542
	tons/acre						1.64

1// Estimated using Class 1-5 farm data.

2// Due to restrictions in the disclosure of information for individual farms in counties, area and production figures for 1978 may be low.

3// State acreages from the Census of Agriculture for 1978 are the sum of individual county totals and are not adjusted for underenumeration.

Note: All yields were computed before rounding production to nearest 1000 for applicable crops.

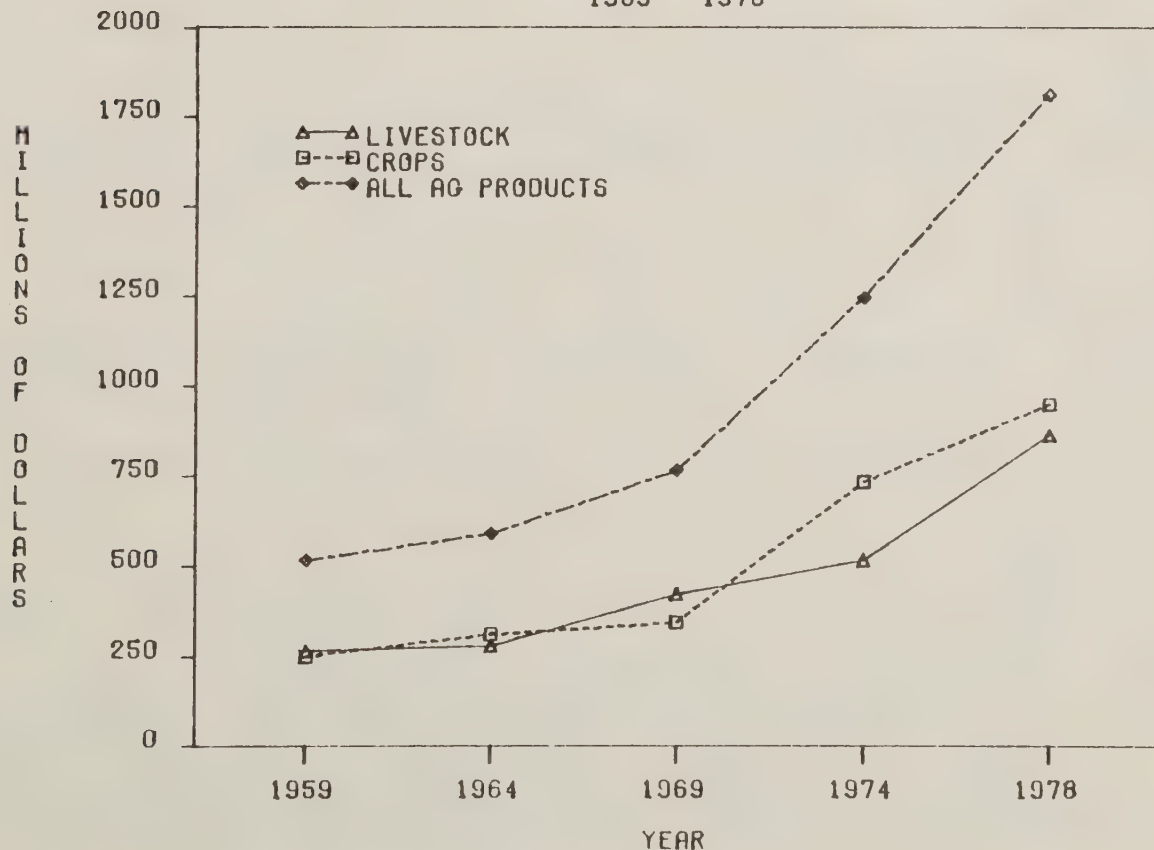
Source: Census of Agriculture

Livestock and Poultry

Cattle and calves in Kentucky increased from 1.7 million to 2.5 million animals from 1954 to 1978 (table 26). From 1954 to 1964, cattle and calves increased nearly one million animals. Inventory numbers have fluctuated in recent years. The cow/calf industry accounts for the fluctuations from census to census as milk cows have steadily decreased from 557,000 in 1954 to 258,000 in 1978. The cow/calf and the dairy industries are centered MLRA 121, the Bluegrass, and MLRA 122, the Pennyroyal (Chart 7). In 1978, 87 percent of the state's milk cows and 78 percent of other cattle and calves were in the Bluegrass and Pennyroyal.

Pigs and hogs numbers for the census years 1954-1978 have fluctuated around one million animals, with the Pennyroyal as the largest producer. Sheep and lambs dwindled to 26,000 animals, barely 5 percent of the 1954 level. Chicken numbers have remained fairly stable over the million mark only in MLRA 125, the Mountains.

Chart 7
MARKET VALUE OF AGRICULTURAL PRODUCTS FOR KENTUCKY
1959 - 1978



Source: Census of Agriculture

Table 26--Livestock and poultry numbers by MLRA for Kentucky, 1954-1978.

	1954	1959	1964	1969	1974	1978
Thousands						
Cattle and Calves						
MLRA 120	252	267	362	376	415	299
121	626	781	880	1041	1210	1047
122	506	617	767	868	1067	879
125	168	151	167	163	197	139
134	120	131	165	143	145	86
State	1672	1947	2341	2591	3034	2450
Cattle and Calves						
Other than Milk Cows						
MLRA 120	199	232	334	357	400	287
121	420	600	726	913	1095	933
122	322	445	608	740	956	769
125	88	99	124	141	178	125*
134	86	105	143	127	134	78
State	1115	1481	1935	2286	2763	2192*
Pigs and Hogs						
MLRA 120	231	353	299	362	269	331
121	275	441	256	263	179	211
122	364	596	385	457	323	459
125	90	106	47	32	25	35*
134	100	158	111	130	102	115
State	1060	1654	1098	1252	898	1151*
Sheep and Lambs						
MLRA 120	32.6	28.6	9.3	4.4	1.8	1.4*
121	391.3	421.4	146.9	96.9	35.2	22.0*
122	87.4	73.9	20.7	12.7	4.3	2.1*
125	8.6	10.2	2.9	1.8	1.	.1*
134	16.0	12.1	4.5	2.7	2.2	.5*
State	535.9	546.2	184.3	118.5	44.5	26.1*
Chickens						
MLRA 120	1148	796	591	586	406*	70*
121	1938	1462	857	631	393	168*
122	2389	1657	1023	846	524	515*
125	1596	1204	1088	999	1201	1060*
134	495	353	229	146	79	20*
State	7566	5472	3786	3208	2603*	1833*

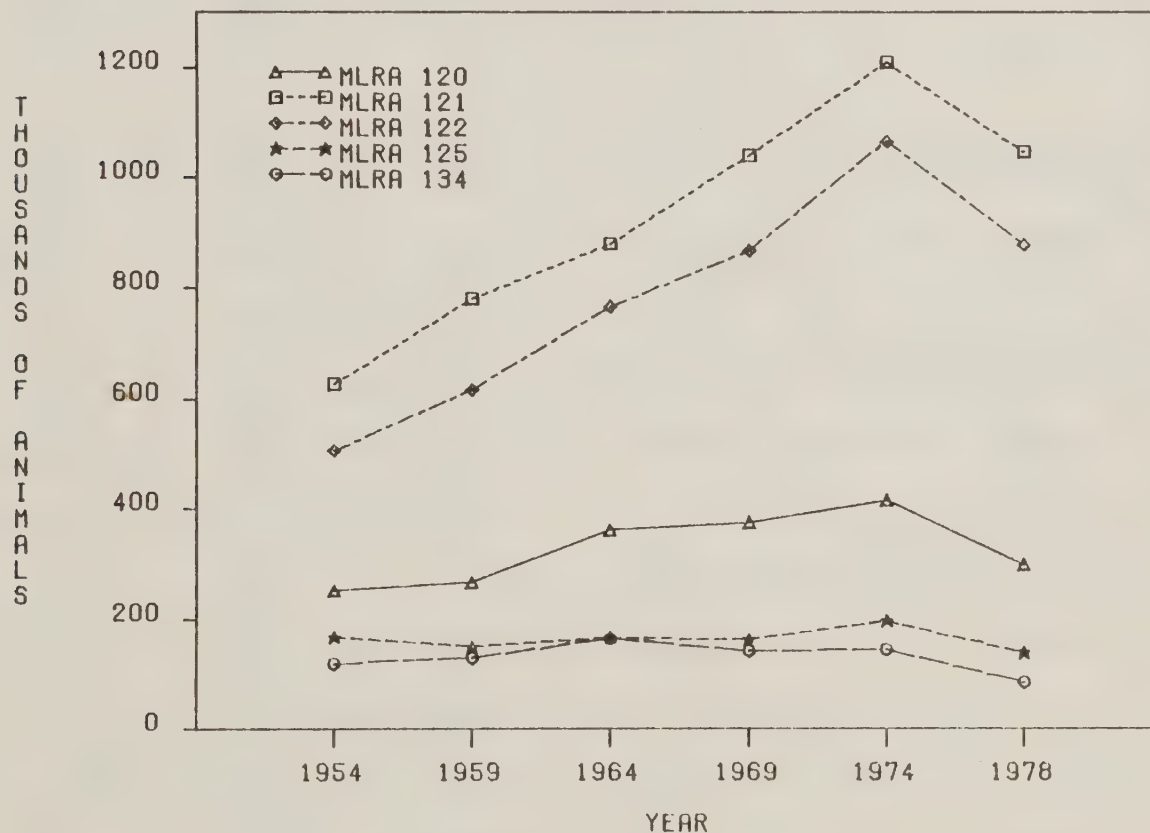
Source: Census of Agriculture.* Low due to disclosure restrictions

Market Value of Agricultural Products

State

The market value of agricultural products rose very rapidly during the 1970's reaching \$1.8 billion in 1978 (table 27, chart 8). This value increase includes increases in production and increases in commodity prices. The 1978 figures show \$949 million in crops with \$500 million in tobacco sales from farms with sales of \$2500 or more. The \$864 million value of production from livestock accounted for the remainder of the 1978 total.

Chart 8
CATTLE AND CALVES BY MAJOR LAND RESOURCE AREA
FOR KENTUCKY 1954-1978



Source: Census of Agriculture

Data from the Statistical Reporting Service shows steady increases in agricultural market value beyond 1978 reaching \$2.8 billion in 1981.¹ The SRS figures for 1981 are divided, \$1,420 million in crops with \$913 million in tobacco sales and \$1,360 million in livestock.

¹Historically, SRS figures are higher than those from the Census of Agriculture. For example, SRS shows the 1978 value of crop production at \$1,374 million with tobacco sales of 608 million.

Table 27 . Market value of agricultural products¹ for all farms by MLRA for Kentucky, 1959-1978.

	1959	1964	1969 <u>million dollars</u>	1974	1978
MLRA 120					
All agricultural products	66	83	115	225	303
Crops	20	44	51	150	123
(Tobacco) ²			(13)	(27)	(40)
Livestock, poultry	37	39	64	75	110
MLRA 121					
All agricultural products	228	247	320	474	705
Crops	114	131	151	267	321
(Tobacco) ²			(118)	(213)	(261)
Livestock, poultry	114	116	169	207	384
MLRA 122					
All agricultural products	150	176	227	370	567
Crops	69	90	91	199	279
(Tobacco) ²			(50)	(95)	(140)
Livestock, poultry	81	86	136	171	288
MLRA 125					
All agricultural products	39	44	49	71	96
Crops	23	27	26	41	54
(Tobacco) ²			(13)	(26)	(41)
Livestock, poultry	16	17	23	31	42
MLRA 134					
All agricultural products	33	39	54	108	142
Crops	15	18	24	76	102
(Tobacco) ²			(5)	(8)	(18)
Livestock, poultry	18	21	30	32	40
State					
All agricultural products	516	589	765	1248	1813
Crops	250	310	343	732	949
(Tobacco) ²			(199)	(370)	(500)
Livestock, poultry	266	279	422	516	864

¹Excludes forest products.

²For farms with sales of \$2500 or more.

Source: Census of Agriculture.

MLRA Highlights

MLRA 121, the Bluegrass, has the largest contribution to market value in both crops and livestock for the state. In 1978, the Bluegrass had \$321 million in crops with \$261 million in tobacco sales and \$384 million in livestock. The second largest was MLRA 122, the Pennyroyal, with \$279 million in crops with \$140 million in tobacco sales and \$288 million in livestock. For crops excluding tobacco in 1978, the Western Coal Fields (MLRA 120), the Pennyroyal, and the Purchase Area (MLRA 134) generated the greatest market value with \$153, \$139 and \$84 million, respectively.

Costs and Prices

The most recent cost-price squeeze in farming is readily apparent from an inspection of the indexed prices (tables 28 and 29).¹ From 1978 to 1981, fertilizer cost increases ranged from 26 to 58 percent, fuel costs more than doubled, feed costs averaged a 37 percent increase, barbed wire and baler twine show respective 39 and 91 percent increases, machinery increases averaged 28 percent, hired field and livestock workers' wages increased 32 percent, the cost of renting cropland increased 25 percent and the average per acre value of land and buildings increased 39 percent.

In contrast, corn and soybeans, which accounted for 2.6 of 4.5 million acres of harvested cropland, showed an 8 percent increase and a 5 percent decrease, respectively, in market prices. Wheat prices increased only 11 percent. With costs increased in the neighborhood of 40 percent and market

¹The actual costs paid and prices received for selected inputs and products are included in Appendix 3. Prices presented here are selected 1970-1981 prices paid (costs) and prices received, indexed to 1978.

Table 28 . Index of prices paid by farmers for selected production inputs in Kentucky, 1970-1981 (1978 = 1.00).

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Fertilizers												
5-10-15	.52	.59	.57	.61	1.00	1.15	.98	1.04	1.00	1.13	1.39	1.55
10-10-10	.57	.60	.61	.66	1.08	1.20	1.01	1.03	1.00	1.12	1.35	1.38
ammonium nitrate	.43	.47	.48	.55	1.20	1.31	1.00	1.02	1.00	1.01	1.18	1.34
urea	.49	.48	.47	.55	1.15	1.33	.95	1.02	1.00	1.05	1.29	1.43
anhydrous ammonia	.42	.42	.43	.48	1.14	1.43	1.07	1.09	1.00	1.02	1.34	1.42
triple superphosphate	.51	.53	.54	.61	1.11	1.30	1.00	1.02	1.00	1.27	1.65	1.58
muriate of potash	.55	.60	.60	.65	.88	.97	.94	1.04	1.00	1.16	1.36	1.52
ag. limestone	.58	.61	.77	.61	.71	.77	.91	.88	1.00	1.09	1.31	1.26
Fuels												
diesel	.432	.415	.419	.476	.791	.823	.887	1.000	1.000	1.423	2.032	2.444
leaded gasoline	.505	.513	.530	.576	.782	.848	.894	.974	1.000	1.318	1.916	2.151
Feeds												
mixed dairy (16% protein)	.54	.57	.57	.81	1.00	.97	1.02	1.02	1.00	1.14	1.33	1.42
beaf supplement	.54	.58	.61	.86	.94	.94	.98	1.01	1.00	1.12	1.26	1.32
corn meal	.61	.65	.59	.86	1.21	1.19	1.17	1.02	1.00	1.10	1.33	1.41
soybean meal	.49	.50	.58	1.21	.90	.78	.93	1.11	1.00	1.11	1.18	1.31
Supplies												
4 point barbed wire	.42	.46	.50	.55	.99	1.04	.95	.96	1.00	1.10	1.22	1.39
baler twine	.50	.51	.54	.62	1.92	2.25	.95	.94	1.00	1.23	1.89	1.91
Machinery												
4 row corn planter	.27	.30	.36	.39	.48	.78	1.01	.93	1.00	1.19	1.00	1.10
3 bottom plow	.46	.47	.51	.54	.63	.77	.82	.96	1.00	1.16	1.22	1.38
50-59 h.p. tractor	.53	.58	.58	.61	.71	.84	.86	.94	1.00	1.09	1.21	1.37
Farm labor												
field and livestock workers	N.A.	N.A.	N.A.	N.A.	.64	.69	.81	.89	1.00	1.06	1.15	1.32
Rented cropland	N.A.	N.A.	N.A.	.59	.70	.75	.81	.99	1.00	1.04	1.15	1.25
Average value per acre of land and bldg.	.35	.37	.41	.46	.54	.60	.72	.87	1.00	1.20	1.34	1.39

Table 29 . Index of prices received by farmers for selected commodities and livestock in Kentucky, 1970-1981.

	(1978 = 1.00)											
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Corn	.65	.47	.72	1.10	1.28	1.06	.92	.91	1.00	1.13	1.39	1.08
Wheat	.42	.47	.47	1.04	1.20	.94	.93	.67	1.00	1.27	1.22	1.11
Soybeans	.45	.44	.60	.83	1.01	.72	.99	.91	1.00	.95	1.14	.95
Tobacco	.55	.62	.60	.71	.87	.81	.87	.93	1.00	1.11	1.26	1.38
All hay	.60	.60	.66	.73	.79	.82	.97	.98	1.00	1.05	1.23	1.30
Beef cattle	.56	.59	.69	.93	.69	.59	.67	.68	1.00	1.40	1.28	1.10
milk cows	.48	.52	.59	.80	.77	.64	.77	.76	1.00	1.70	1.99	1.99

prices increased only about 10 percent, the net return position for corn, wheat and soybean producers has deteriorated. In many instances, farmers may be unable to cover their variable costs because of heavy indebtedness from farm expansion and equipment purchases and equity investment in farm real estate. Farmers' inability to cover variable costs in recent years has resulted in unprecedented numbers of foreclosures and farm sales.

Fertilizer Use¹

Nutrients

From 1976 to 1981, use of nitrogen per acre on the combined acreage of corn, wheat, tobacco and hay crops generally increased from approximately 90 to 100 pounds per acre (table 30). In the same period, average annual use of phosphorus and potassium on corn, wheat, tobacco, hay and soybean crops has decreased. Use of phosphorous (pounds per acre) has decreased from the high to low 50's while potassium use had decreased from the high to low 60's.

General trends in fertilizer use by MLRA are not as clear. In a very broad sense each of the MLRAs follow the pattern of the state. At the regional level, factors other than just the harvested acreage of specific crops begin to surface. Some of those factors which may influence fertilizer use are the soils, the mix of crops being grown, farm practices, costs of substitutes, cost of the fertilizers, expected yield responses, expected price of products, adaptation of guideline recommendations, etc.

¹The background data for this section and tables 29 and 30 is included in Appendices 1 and 2. Appendix 1 data is harvested acreage of major crops by MLRA, 1969-1981. Appendix 2 data is fertilizer sales by MLRA and Kentucky for 1976-1981.

Table 30 . Average annual nitrogen, phosphate and Potash uses per acre¹ by MLRA for Kentucky, 1976-1981.

	1976	1977	1978	1979	1980	1981
	pounds per acre					
MLRA 120						
Nitrogen	117.6	124.0	110.6	113.4	121.9	118.5
Phosphorous	56.8	57.4	51.6	52.1	48.1	47.7
Potassium	64.7	66.8	63.1	65.3	57.4	56.8
MLRA 121						
Nitrogen	66.9	78.5	64.9	69.7	69.3	83.4
Phosphorous	44.3	47.1	40.2	42.4	36.4	41.6
Potassium	64.3	67.0	60.7	60.0	58.4	65.4
MLRA 122						
Nitrogen	90.4	97.5	92.5	93.7	95.2	95.4
Phosphorous	66.6	71.3	66.1	67.8	61.6	60.1
Potassium	69.3	69.7	69.5	71.4	66.2	61.9
MLRA 125						
Nitrogen	82.7	94.4	85.5	87.5	82.0	108.1
Phosphorous	84.8	90.6	86.7	88.7	74.8	85.2
Potassium	83.2	89.9	83.9	82.4	77.4	86.8
MLRA 134						
Nitrogen	115.3	170.5	160.1	143.7	168.8	148.0
Phosphorous	49.0	66.0	58.6	51.8	56.3	43.7
Potassium	58.5	80.3	73.2	68.2	76.1	60.3
State						
Nitrogen	91.6	104.3	93.2	94.0	98.8	100.6
Phosphorous	57.3	62.4	56.3	56.7	52.4	51.1
Potassium	66.1	70.6	67.0	67.3	64.1	61.4

¹Total amount of primary N, P and K available was calculated from semi-annual, fertilizer year (July 1-June 30) sales data. Annual wheat, corn, tobacco and hay acreage were summed to compute average annual N use. Soybeans acreage was added in to compute average annual P and K use.

Source: Fertilizer sales data - Division of Regulatory Services, Agricultural Experiment Station, College of Agriculture, University of Kentucky, Lexington, Kentucky.
Cropland acreage - Kentucky Crop and Livestock Reporting Service, Statistical Reporting Service, USDA, Louisville, Kentucky.

Major Sources of Nutrients

For Kentucky, the three major sources of nitrogen are ammonium nitrate (33/34-0-0), anhydrous ammonia (82-0-0) and urea (45/46-0-0) (table 31). Triple superphosphate (0-44/46-0) and muriate of potash (0-0-50/52) are the major sources of phosphorous and potassium. Mixed fertilizers are dominated by (18-46-0), (5-10-15) and (10-10-10).

Soils

Class/Subclass

Acres of soils by capability class/subclass groupings by MLRA for Kentucky are presented in table 32.¹ The capability classes are soil groups which have progressively greater risks of soil damage or limitation in uses from class I to class VIII. The subclasses designate a major conservation problem, i.e., e for erosion and runoff, w for excess water, s for root-zone limitations and c for climatic conditions. Those soils with few if any limitations for commercial plant production are called prime farmland soils and are generally class/subclasses I, IIe, IIs, IIw, and IIIw soils for Kentucky.²

Overall, the soils with erosion as the major conservation problem constitute 15.9 million of the 25.2 million acres of Kentucky soils. The IIe, IIIe and IVe soils, where most cropland activity is located, account for 9.4 million acres.³

¹See Land-Capability Classification, Ag. Handbook No. 210, Soil Conservation Service, USDA for detailed information about soils classification.

²See Prime Farmland Soils of Kentucky, KY 42-9-4, Soil Conservation Service, Lexington, Kentucky, May 9, 1975.

³A full examination of erosion by major land use and class/subclass using 1977 data is found in the Soil Conservation Service's The Kentucky Outlook From the National Resources Inventory, Lexington, Kentucky, KY-SB-1, August 1981. An update using 1982 data is forthcoming.

Table 31. Sources of primary nutrients and percent of state use by MLRA for Kentucky, 1981.

	Primary Nitrogen Source	Percent of State	Primary phosphorus Source	Percent of State	Primary potassium Source	Percent of State	Mixed Fertilizer Compound	Percent of State
MLRA 120	anhydrous ammonia nitrogen solutions urea	51 45 28	triple superphosphate	33	muriate of potash	28	18-46-0 5-10-15 6-24-24	23 10 30
MLRA 121	ammonium nitrate nitrogen solutions	42 24	triple superphosphate	14	muriate of potash	16	5-10-15 10-10-10 18-46-0	46 31 13
MLRA 122	ammonium nitrate anhydrous ammonia urea	33 33 40	triple superphosphate	41	muriate of potash	33	18-46-0 10-10-10 5-10-15	40 39 25
MLRA 125	ammonium nitrate	8	triple superphosphate	2	muriate of potash	2	5-10-15 10-10-10	18 19
MLRA 134	ammonium nitrate anhydrous ammonia urea	10 14 20	triple superphosphate	10	muriate of potash	21	18-46-0	20
State	ammonium nitrate anhydrous ammonia urea nitrogen solutions	183,000 48,000 53,000 59,000	triple superphosphate	58,000	muriate of potash	155,000	18-46-0 5-10-15 10-10-10 6-24-24	126,000 106,000 79,000 29,000

Source: Division of Regulatory Services, Agricultural Experiment Station, College of Agriculture, University of Kentucky, Lexington, Kentucky.

Table 32--Class/subclass soil groupings by MLRA for Kentucky.

	: 120	: 121	: MLRA 122	: 125	: 134	: State
	<u>acres</u>					
I	288,393	300,417	320,332	124,596	213,127	1,246,865
IIe	718,485	1,116,952	1,397,538	161,505	362,443	3,756,923
IIIe	459,156	1,081,484	1,261,432	338,603	172,786	3,313,461
IVe	463,952	711,249	737,316	277,111	127,571	2,317,199
VIe	434,907	1,106,437	671,810	402,790	111,736	2,727,680
VIIe	238,963	790,797	558,170	2,145,179	91,076	3,824,185
e subtotal	2,315,463	4,806,919	4,626,266	3,325,188	865,612	15,939,448
IIIs	23,568	33,687	67,412	37,909	11,592	174,168
IIIIs	3,038	2,209	1,122	28,259	5,373	40,001
IVs	314	316	13,870	860	1,598	16,958
Vs	-	532	-	-	-	532
VIIs	26,152	105,186	202,789	112,897	2,920	449,944
VIIIs	332,040	435,362	736,917	3,546,031	24,863	5,075,213
VIIIIs	806	2,990	3,684	8,283	-	15,763
s subtotal	385,918	580,282	1,025,794	3,734,239	46,346	5,772,579
IIw	464,177	82,188	171,332	170,419	158,580	1,046,696
IIIw	342,324	113,230	144,337	44,987	196,326	841,204
IVw	9,935	36,837	29,063	6,917	49,158	131,910
Vw	3,085	6,500	-	-	-	9,585
VIw	295	-	-	-	-	295
VIIw	11,089	1,300	-	-	-	12,389
w subtotal	830,905	240,055	344,732	222,323	404,064	2,042,079
Other	54,792	48,052	18,026	14,390	29,315	164,575
Water	7,744	3,305	9,760	6,130	4,180	31,119
Total	3,883,215	5,979,030	6,344,910	7,426,866	1,562,644	25,196,665

Source: As of 1/12/83, Soil Surveys for 63 counties and 1970 Kentucky Soil and Water Conservation Needs Inventory for 57 counties, Soil Conservation Service, Lexington, Kentucky.

Prime Farmland

In 1979, 85 percent or 6 out of 7 million acres of potential prime farmland were still in farms (table 33). MLRAs 120, 121, and 122 cumulatively accounted for 81 percent of all prime farmland. In MLRA 134, the Purchase Area, nearly 50 percent of all soils are prime farmland. It was estimated in 1979 that 120,000 acres of prime farmland had been lost to urban uses in the last 10 years. Most of the latter loss was in the Bluegrass where the major urban centers of Kentucky are located.

Table 33-- Prime farmland acreage and prime farmland removals by MLRA for Kentucky, January 1980.

	Potential Prime Farmland	Removals				Prime Farmland	Estimated Prime Farmland Lost Over Last 10 Years, to Urban Uses
		Urban ^{1/}	Flooding ^{2/}	Drainage ^{3/}	Other ^{4/}		
MLRA 120	1,855,113	58,197	62,878	94,083	15,416	1,624,539	8,896
MLRA 121	1,655,587	180,365		(138,610)	(+3,383)	1,339,995	70,601
MLRA 122	2,110,483	67,003	65,316	93,086	(+523) ^{1/2}	1,885,601	20,113
MLRA 125	540,427	24,087		(118,842)	(+3,797)	401,295	15,326
MLRA 134	891,166	35,672	59,325	35,354	3,115	757,700	4,845
Kentucky	7,052,776	365,324		(667,494)	10,828	6,009,130	119,781

Source: Soil Conservation Service, Kentucky Inventory and Monitoring Bulletin No. KY 42-9-7, "Acreage of Prime Farmland in Kentucky by Counties," August 13, 1979.

^{1/} Larger than 10 acres.

^{2/} More than once in two years.

^{3/} Inadequate three or more years in ten.

^{4/} Water impoundments, mined acreage and Federal non-cropland.

Appendix 1
Area, Production and Yields
for Major Crops
by MLRA for Kentucky
1969-1981

CORN GRAIN

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MLRA	DATA TYPE	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
					TOTAL FOR LRA	120								
120	ACRES	313700	318800	390000	329600	341000	378500	401500	471800	519900	495900	451600	509400	473000
	PRODUCTION	24901	14368	31239	29384	29505	31908	33203	48400	48008	45235	47579	37802	19300
	YIELD (BU.)	79	45	80	89	87	84	83	103	92	91	105	74	101
					TOTAL FOR LRA	121								
121	ACRES	177000	174600	214000	190800	196100	204500	207500	206900	226200	218200	235500	259100	275100
	PRODUCTION	14166	10143	16397	16516	17214	17636	16213	20419	21273	20321	23200	21862	26397
	YIELD (BU.)	80	58	77	87	88	86	78	99	94	93	99	84	96
					TOTAL FOR LRA	122								
122	ACRES	362100	354700	398700	332300	354100	358700	376000	435000	488700	488600	455200	499500	526200
	PRODUCTION	26931	18291	30277	27924	29667	28568	25078	44647	42660	40546	46399	33150	53340
	YIELD (BU.)	74	52	76	84	84	80	67	103	87	83	102	66	101
					TOTAL FOR LRA	125								
125	ACRES	46400	45200	60800	50600	48900	49200	48500	48300	44600	36600	38700	50500	51200
	PRODUCTION	3297	2310	3869	3778	3726	3340	3648	4303	3816	2898	3384	3742	4734
	YIELD (BU.)	71	51	64	75	76	68	75	89	86	79	87	74	90
					TOTAL FOR LRA	134								
134	ACRES	98800	94700	119500	64700	69900	84100	106500	198000	188400	168300	117200	160400	154500
	PRODUCTION	7551	4288	9307	5644	5736	6695	9636	20949	16373	10667	11889	6975	15136
	YIELD (BU.)	76	45	78	87	82	80	90	106	87	63	101	43	100
					TOTAL FOR KENTUCKY									
KENTUCKY	ACRES	998000	988000	1183000	968000	1010000	1075000	1140000	1360000	1467800	1407600	1298200	1479000	1480000
	PRODUCTION	76846	49400	91091	83248	85850	88150	87780	138720	132131	119668	132453	103533	148215
	YIELD (BU.)	77	50	77	86	85	82	77	102	90	85	102	70	100

NOTE: ALL PRODUCTION IS IN THOUSANDS - UNITS ARE LBS FOR TOBACCO, TONS FOR HAY AND BUSHELS FOR ALL OTHER COMMODITIES
SOURCE: U.S. DEPARTMENT OF AGRICULTURE, STATISTICAL REPORTING SERVICE

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WINTER WHEAT

MLRA	DATA TYPE	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
TOTAL FOR LRA 120														
120	ACRES	31900	30100	32600	45800	44800	93100	72900	75400	51400	26600	52100	64300	141700
	PRODUCTION	1042	994	1341	1604	1461	2972	2473	2222	1948	959	2030	2476	5675
	YIELD (BU.)	33	33	41	35	33	32	34	29	38	36	39	39	40
TOTAL FOR LRA 121														
121	ACRES	26800	26600	25700	26500	24600	39500	35800	30800	23800	16900	25800	32200	37800
	PRODUCTION	836	894	973	874	798	1278	1195	940	779	563	940	1216	1313
	YIELD (BU.)	31	34	38	33	32	32	33	31	33	33	36	38	36
TOTAL FOR LRA 122														
122	ACRES	93100	85000	86500	102500	68300	161600	154500	158900	135600	97300	139600	170200	320100
	PRODUCTION	3380	3296	3627	3461	2446	5220	5381	4871	5090	3580	5468	6974	13917
	YIELD (BU.)	36	39	42	34	36	32	35	31	38	37	39	41	43
TOTAL FOR LRA 125														
125	ACRES	400	500	400	200	300	500	600	700	0	0	0	0	0
	PRODUCTION	11	18	16	6	9	14	19	20	0	0	0	0	0
	YIELD (BU.)	28	36	40	30	32	28	32	29	0	0	0	0	0
TOTAL FOR LRA 134														
134	ACRES	30400	27700	33500	39500	24800	64200	55400	63300	58400	35900	66900	78600	176100
	PRODUCTION	938	912	1188	1026	659	1821	1784	2148	2157	1277	2397	2995	7569
	YIELD (BU.)	31	33	35	26	27	28	32	34	37	36	36	38	43
TOTAL FOR KENTUCKY														
KENTUCKY	ACRES	182600	169900	178700	214500	162800	358900	319200	329100	269200	176700	284400	345300	675700
	PRODUCTION	6208	6116	7147	6972	5376	11306	10853	10202	9976	6380	10837	13664	28104
	YIELD (BU.)	34	36	40	33	33	32	34	31	37	36	38	40	42

NOTE: ALL PRODUCTION IS IN THOUSANDS - UNITS ARE LBS FOR TOBACCO, TONS FOR HAY AND BUSHELS FOR ALL OTHER COMMODITIES
SOURCE: U.S. DEPARTMENT OF AGRICULTURE, STATISTICAL REPORTING SERVICE

Appendix 1 - Table C

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SOYBEANS

MILWAUKEE	DATA TYPE	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
		TOTAL FOR LRA					120							
1.00	ACRES	283100	314100	309800	344700	389900	407800	415400	405700	478500	499500	587500	563500	612200
	PRODUCTION	8127	8581	8587	9550	10249	10093	11456	11512	14957	15113	18875	14730	17726
	YIELD (BU.)	29	27	28	28	26	25	28	28	31	30	32	26	29
2.00	ACRES	9900	11100	15700	14000	15900	24600	32700	33900	36900	39700	50700	59400	69800
	PRODUCTION	279	310	446	380	411	574	795	967	1121	1256	1576	1783	2200
	YIELD (BU.)	28	28	28	27	26	23	24	29	30	32	31	30	32
3.00	ACRES	39800	54200	97300	180300	230600	244200	277800	291700	401400	386700	494900	494900	520000
	PRODUCTION	1132	1567	3061	5126	6328	6449	7583	8190	12699	12216	17076	11036	16457
	YIELD (BU.)	28	29	31	28	27	26	27	28	32	32	35	22	32
4.00	ACRES	850	800	2100	1200	1800	2400	1700	2000	2500	3000	4100	5400	5300
	PRODUCTION	21	20	57	29	46	51	40	40	79	89	128	147	158
	YIELD (BU.)	25	25	28	25	26	21	24	20	32	30	31	27	30
5.00	ACRES	149200	174800	278400	333400	361000	340400	371200	334800	398100	428300	519200	474300	490800
	PRODUCTION	3971	4517	8600	8501	8946	7809	9800	8131	11985	12039	16186	8235	13547
	YIELD (BU.)	27	26	31	25	25	23	26	24	30	28	31	17	28
6.00	ACRES	482850	555000	703300	873600	999200	1019400	1098800	1068100	1317400	1357200	1656400	1597500	1698100
	PRODUCTION	13531	14995	20754	23588	25981	24977	29675	28841	40842	40714	53842	35933	50090
	YIELD (BU.)	28	27	30	27	26	25	27	27	31	30	33	22	29

[illegible]

NOTE: ALL PRODUCTION IS IN THOUSANDS -UNITS ARE LBS FOR TOBACCO, TONS FOR HAY AND BUSHELS FOR ALL OTHER COMMODITIES
SOURCE: U.S. DEPARTMENT OF AGRICULTURE STATISTICAL REPORTING SERVICE

TOBACCO, ALL

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MLRA	DATA TYPE	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
TOTAL FOR LRA 120														
120	ACRES	16025	14030	14290	15285	14185	15890	17250	17680	17490	17410	15153	17509	20924
	PRODUCTION	32975	32491	30324	36053	25930	35003	37021	38717	36314	40030	26860	34823	42627
	YIELD (LBS.)	2058	2316	2122	2359	1828	2203	2146	2190	2076	2299	1773	1989	2036
TOTAL FOR LRA 121														
121	ACRES	82995	75230	75845	82370	78270	94250	98770	101350	94650	90110	81640	98100	111410
	PRODUCTION	229646	211708	181415	226842	160760	240312	232733	262596	232444	228147	169225	221673	254517
	YIELD (LBS.)	2767	2814	2392	2754	2054	2550	2356	2591	2456	2532	2073	2260	2284
TOTAL FOR LRA 122														
122	ACRES	49510	45270	46145	49120	46110	52285	56415	58390	56150	57230	50977	55294	66800
	PRODUCTION	117153	115196	102226	124352	89734	119699	127890	133718	124274	135884	100702	108955	143627
	YIELD (LBS.)	2366	2545	2215	2532	1946	2289	2267	2290	2213	2374	1975	1970	2150
TOTAL FOR LRA 125														
125	ACRES	17115	16470	16575	19020	18180	20910	21765	22090	19770	20340	17880	22270	26487
	PRODUCTION	42028	41507	30096	47837	36103	46113	47246	50702	43255	46495	31420	42855	52345
	YIELD (LBS.)	2456	2520	1816	2515	1986	2205	2171	2295	2188	2286	1757	1924	1976
TOTAL FOR LRA 134														
134	ACRES	4330	1785	6335	6450	5005	5715	6500	7485	8685	9385	8009	7689	2894
	PRODUCTION	8274	3855	12246	11635	8342	10881	11764	11664	15726	19052	14868	12294	16384
	YIELD (LBS.)	1911	2160	1933	1804	1667	1904	1810	1558	1811	2030	1856	1599	1942
TOTAL FOR KENTUCKY														
KENTUCKY	ACRES	169975	152785	159190	172245	161750	189050	200700	206995	196745	194475	173659	200862	234543
	PRODUCTION	430076	404757	356307	446719	320869	452008	456654	497397	452013	469608	343076	420601	500469
	YIELD (LBS.)	2530	2649	2238	2594	1984	2391	2275	2403	2297	2415	1976	2094	2172

NOTE: ALL PRODUCTION IS IN THOUSANDS - UNITS ARE LBS FOR TOBACCO, TONS FOR HAY AND BUSHELS FOR ALL OTHER COMMODITIES
 SOURCE: U.S. DEPARTMENT OF AGRICULTURE, STATISTICAL REPORTING SERVICE

Appendix 1 - Table E

ALL HAY

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MIRA	DATA TYPE	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
				TOTAL FOR LRA	120								
120	ACRES	190000	185500	163000	152800	162300	199700	199200	196500	204500	211200	208100	200100
	PRODUCTION	366.36	332.85	311.39	272.04	298.54	362.90	334.00	367.60	379.00	386.80	388.90	380.70
	YIELD (TONS)	1.92	1.79	1.91	1.78	1.83	1.81	1.67	1.87	1.85	1.83	1.86	1.90
				TOTAL FOR LRA	121								
121	ACRES	496500	500500	535900	523700	539000	624600	642600	642400	650800	671600	660300	659600
	PRODUCTION	1038.19	1033.82	1134.14	999.14	1100.61	1274.40	1245.10	1223.80	1272.50	1353.90	1317.50	1251.10
	YIELD (TONS)	2.09	2.06	2.11	1.90	2.04	2.04	1.93	1.90	1.95	2.01	1.99	1.89
				TOTAL FOR LRA	122								
122	ACRES	435200	424900	411400	384200	393900	489700	492500	501100	523500	542900	539300	522000
	PRODUCTION	880.26	866.31	853.11	788.55	866.83	1017.90	955.10	1049.80	1092.30	1103.40	1106.80	1028.60
	YIELD (TONS)	2.02	2.03	2.07	2.05	2.20	2.07	1.93	2.09	2.08	2.03	2.05	1.97
				TOTAL FOR LRA	125								
125	ACRES	146700	140100	90200	91100	98700	122500	133600	131300	130200	134100	129700	124200
	PRODUCTION	254.75	244.67	165.66	162.44	189.58	219.90	240.70	231.20	233.60	214.40	211.70	209.40
	YIELD (TONS)	1.73	1.74	1.83	1.78	1.92	1.79	1.80	1.76	1.79	1.59	1.63	1.68
				TOTAL FOR LRA	134								
134	ACRES	58200	59500	43200	37500	39300	53600	53100	49900	48100	48000	47900	45400
	PRODUCTION	110.03	107.79	88.41	76.65	81.20	106.90	106.80	99.90	92.20	85.70	88.30	78.60
	YIELD (TONS)	1.89	1.81	2.04	2.04	2.06	1.99	2.01	2.00	1.91	1.78	1.84	1.73
				TOTAL FOR KENTUCKY									
KENTUCKY	ACRES	1326600	1310500	1243700	1189300	1233200	1490100	1521000	1521200	1557100	1607800	1585300	1551300
	PRODUCTION	2649.59	2585.44	2552.71	2298.82	2536.76	2982.00	2881.70	2972.30	3069.60	3144.20	3113.20	2918.40
	YIELD (TONS)	1.99	1.97	2.05	1.93	2.05	2.00	1.89	1.95	1.97	1.95	1.96	1.90

NOTE: ALL PRODUCTION IS IN THOUSANDS - UNITS ARE LBS FOR TOBACCO, TONS FOR HAY AND BUSHELS FOR ALL OTHER COMMODITIES
SOURCE: U.S. DEPARTMENT OF AGRICULTURE STATISTICAL REPORTING SERVICE

Appendix 2
Fertilizer Sales Data
for Kentucky
1976-1981

Table A -- FERTILIZER SALES FOR KENTUCKY FERTILIZER YEARS (JULY 1 TO JUNE 30)

FERTILIZER MATERIALS		1976 TONS	1977 TONS	1978 TONS	1979 TONS	1980 TONS	1981 TONS
NITRATE OF SODA	(16 - 0 - 0)	918.	1205.	1347.	1023.	938.	1310.
AMMONIUM SULFATE	(20/21 - 0 - 0)	1533.	1261.	917.	1735.	2178.	3095.
NITROGEN SOLUTIONS	(28/32 - 0 - 0)	64187.	71631.	47770.	49709.	56086.	59263.
AMMONIUM NITRATE	(33/34 - 0 - 0)	125423.	128825.	107655.	126866.	148411.	183019.
UREA	(45/46 - 0 - 0)	22507.	46654.	43179.	37768.	35455.	52607.
ANHYDROUS AMMONIA	(82 - 0 - 0)	39025.	45291.	42905.	34421.	51295.	48261.
OTHER NITROGEN		3118.	2297.	2734.	2405.	2259.	1817.
TOTAL NITROGEN MATERIALS		256712.	297164.	246507.	253927.	296622.	349372.
SUPERPHOSPHATE	(0 - 18/20 - 0)	347.	1862.	1404.	176.	92.	52.
TRIPLE SUPERPHOSPHATE	(0 - 44/46 - 0)	44991.	53262.	49396.	58202.	54401.	58306.
OTHER PHOSPHATE		1549.	455.	104.	34.	108.	283.
TOTAL PHOSPHATE MATERIALS		46886.	55579.	50905.	58411.	54601.	58641.
SULFATE OF POTASH-MAGNESIA	(0 - 0 - 20/22)	1336.	1826.	1690.	2385.	2794.	4189.
SULFATE OF POTASH	(0 - 0 - 50/52)	12849.	14531.	16952.	16424.	17734.	22429.
MURIATE OF POTASH	(0 - 0 - 60/62)	93097.	123982.	127028.	144409.	139315.	154949.
OTHER POTASH		43.	117.	140.	88.	522.	1853.
TOTAL POTASH MATERIALS		107325.	140456.	145810.	163306.	160365.	183419.
MIXED FERTILIZERS							
	(18 - 46 - 0)	66920.	101069.	99011.	109209.	101721.	126483.
	(5 - 10 - 15)	126515.	116066.	99983.	87960.	96916.	105695.
	(10 - 10 - 10)	123255.	108501.	87374.	84530.	76437.	78935.
	(6 - 24 - 24)	39254.	44911.	35649.	33226.	33509.	28950.
	(5 - 20 - 20)	47284.	42822.	30912.	29970.	24081.	21826.
	(8 - 24 - 24)	1859.	2018.	858.	777.	12780.	7666.
	(0 - 23 - 30)	4431.	8969.	7757.	7090.	7207.	6114.
	(3 - 9 - 27)	1479.	2661.	1500.	5524.	7492.	4058.
	(9 - 23 - 30)	5907.	6863.	7653.	6091.	6405.	5439.
	(0 - 26 - 26)	2962.	3878.	3369.	4237.	5468.	4656.
	(6 - 12 - 18)	5650.	6664.	6618.	5952.	5975.	6387.
	(7 - 28 - 28)	9524.	11251.	8595.	9232.	8137.	8298.
	(19 - 19 - 19)	3534.	5060.	5702.	6830.	5465.	6860.
	(6 - 12 - 12)	15136.	11103.	8613.	6437.	5181.	4780.
TOTAL OF ABOVE MIXTURES		453710.	471837.	403596.	397066.	396773.	416145.
OTHER MIXTURES		149164.	158549.	135491.	142033.	126518.	125162.
TOTAL MIXTURES		602874.	630386.	539087.	539099.	523291.	541308.
TOTAL FERTILIZERS		1013797.	1123585.	982309.	1014743.	1034878.	1132740.
PRIMARY NITROGEN AVAILABLE	(N)	156435.	182034.	157863.	157046.	176639.	199392.
PRIMARY PHOSPHATE AVAILABLE	(P2O5)	127871.	149104.	132656.	140704.	134708.	144722.
PRIMARY POTASH AVAILABLE	(K2O)	147410.	168770.	157732.	166942.	164680.	173783.

Appendix 2

Table B -- FERTILIZER SALES FOR KENTUCKY FOR LRA 120

FERTILIZER YEARS (JULY 1 TO JUNE 30)

FERTILIZER MATERIALS		1976 TONS	1977 TONS	1978 TONS	1979 TONS	1980 TONS	1981 TONS
NITRATE OF SODA	(16 - 0 - 0)	138.	112.	60.	94.	70.	120.
AMMONIUM SULFATE	(20/21 - 0 - 0)	68.	105.	6.	0.	67.	5.
NITROGEN SOLUTIONS	(28/32 - 0 - 0)	30782.	32245.	21321.	25011.	27032.	26780.
AMMONIUM NITRATE	(33/34 - 0 - 0)	13358.	12228.	9942.	11325.	11086.	14078.
UREA	(45/46 - 0 - 0)	5176.	7687.	7651.	9351.	10876.	14668.
ANHYDROUS AMMONIA	(82 - 0 - 0)	22117.	25140.	22458.	18920.	26580.	24707.
OTHER NITROGEN		405.	47.	59.	54.	154.	116.
TOTAL NITROGEN MATERIALS		72045.	77564.	61498.	64754.	75865.	80473.
SUPERPHOSPHATE	(0 - 18/20 - 0)	35.	5.	11.	2.	0.	0.
TRIPLE SUPERPHOSPHATE	(0 - 44/46 - 0)	12973.	14882.	15847.	18132.	15226.	19249.
OTHER PHOSPHATE		96.	2.	0.	0.	55.	0.
TOTAL PHOSPHATE MATERIALS		13104.	14889.	15858.	18135.	15282.	19250.
SULFATE OF POTASH-MAGNESIA	(0 - 0 - 20/22)	363.	136.	81.	578.	332.	917.
SULFATE OF POTASH	(0 - 0 - 50/52)	838.	1033.	1310.	1470.	1120.	1161.
MURIATE OF POTASH	(0 - 0 - 60/62)	25783.	33444.	35408.	41191.	35714.	43216.
OTHER POTASH		20.	0.	11.	10.	140.	1239.
TOTAL POTASH MATERIALS		27003.	34613.	36809.	43249.	37305.	46534.
MIXED FERTILIZERS							
	(18 - 46 - 0)	15396.	21496.	21099.	22788.	22810.	29114.
	(5 - 10 - 15)	12541.	10465.	9971.	8736.	9248.	10591.
	(10 - 10 - 10)	14165.	10827.	7622.	8146.	7724.	7493.
	(6 - 24 - 24)	20456.	19373.	12920.	11559.	12190.	8727.
	(5 - 20 - 20)	8457.	6112.	3483.	2625.	2574.	2050.
	(8 - 24 - 24)	274.	119.	100.	110.	2671.	4085.
	(0 - 23 - 30)	4143.	8266.	6880.	6084.	6874.	5626.
	(3 - 9 - 27)	781.	1445.	726.	2537.	3942.	2080.
	(9 - 23 - 30)	5227.	5796.	6395.	4284.	4588.	3652.
	(0 - 26 - 26)	1461.	1286.	743.	910.	1133.	899.
	(6 - 12 - 18)	208.	748.	398.	671.	726.	1315.
	(7 - 28 - 28)	1885.	1938.	1253.	727.	268.	153.
	(19 - 19 - 19)	1653.	1812.	1570.	2304.	1816.	1992.
	(6 - 12 - 12)	1157.	669.	545.	257.	203.	172.
TOTAL OF ABOVE MIXTURES		87804.	90352.	73705.	71736.	76767.	77948.
OTHER MIXTURES		40185.	39666.	32398.	36094.	27083.	21036.
TOTAL MIXTURES		127989.	130019.	106102.	107830.	103851.	98984.
TOTAL FERTILIZERS		240141.	257085.	220268.	233968.	232303.	245241.
PRIMARY NITROGEN AVAILABLE	(N)	44755.	49185.	41542.	41213.	48205.	49824.
PRIMARY PHOSPHATE AVAILABLE	(P2O5)	33137.	36495.	32245.	34245.	32589.	34694.
PRIMARY POTASH AVAILABLE	(K2O)	37759.	42446.	39447.	42914.	38896.	41286.

Table C.-- FERTILIZER SALES FOR KENTUCKY FOR LRA 121

FERTILIZER YEARS (JULY 1 TO JUNE 30)

FERTILIZER MATERIALS		1976 TONS	1977 TONS	1978 TONS	1979 TONS	1980 TONS	1981 TONS
NITRATE OF SODA	(16 - 0 - 0)	103.	91.	191.	84.	128.	104.
AMMONIUM SULFATE	(20/21 - 0 - 0)	696.	855.	707.	1510.	1547.	2926.
NITROGEN SOLUTIONS	(28/32 - 0 - 0)	11121.	13537.	12292.	12327.	12364.	14363.
AMMONIUM NITRATE	(33/34 - 0 - 0)	47010.	54165.	45075.	51894.	60147.	76168.
UREA	(45/46 - 0 - 0)	3602.	9037.	5882.	4862.	3351.	4841.
ANHYDROUS AMMONIA	(82 - 0 - 0)	421.	452.	207.	313.	29.	374.
OTHER NITROGEN		1439.	1207.	1584.	1256.	1535.	1104.
TOTAL NITROGEN MATERIALS		64441.	79393.	65939.	72247.	79100.	99878.
SUPERPHOSPHATE	(0 - 18/20 - 0)	106.	1418.	1348.	40.	66.	25.
TRIPLE SUPERPHOSPHATE	(0 - 44/46 - 0)	7839.	8551.	6845.	7879.	6725.	8214.
OTHER PHOSPHATE		168.	139.	7.	11.	10.	49.
TOTAL PHOSPHATE MATERIALS		8113.	10108.	8200.	7930.	6801.	8288.
SULFATE OF POTASH-MAGNESIA	(0 - 0 - 20/22)	441.	1225.	1090.	1183.	1114.	1590.
SULFATE OF POTASH	(0 - 0 - 50/52)	7656.	8150.	8639.	8098.	9335.	12038.
MURIATE OF POTASH	(0 - 0 - 60/62)	16435.	18187.	17511.	19365.	19788.	24575.
OTHER POTASH		17.	73.	123.	63.	9.	4.
TOTAL POTASH MATERIALS		24548.	27634.	27363.	28709.	30246.	38207.
MIXED FERTILIZERS							
	(18 - 46 - 0)	8810.	10531.	9642.	12843.	10633.	15664.
	(5 - 10 - 15)	55339.	53344.	42661.	38236.	45079.	49129.
	(10 - 10 - 10)	31877.	30109.	25791.	24825.	23858.	24756.
	(6 - 24 - 24)	1606.	1855.	1234.	1667.	1566.	1692.
	(5 - 20 - 20)	5235.	5816.	4326.	4128.	3368.	3326.
	(8 - 24 - 24)	0.	94.	0.	15.	42.	13.
	(0 - 23 - 30)	72.	410.	416.	383.	17.	36.
	(3 - 9 - 27)	0.	38.	0.	71.	23.	51.
	(9 - 23 - 30)	442.	698.	450.	406.	44.	65.
	(0 - 26 - 26)	43.	197.	128.	285.	228.	463.
	(6 - 12 - 18)	888.	923.	776.	598.	569.	443.
	(7 - 28 - 28)	148.	64.	24.	111.	27.	34.
	(19 - 19 - 19)	113.	518.	777.	1135.	908.	1185.
	(6 - 12 - 12)	922.	666.	464.	439.	352.	457.
TOTAL OF ABOVE MIXTURES		105495.	105262.	86689.	85143.	86715.	97314.
OTHER MIXTURES		39040.	42733.	39061.	40331.	36333.	36632.
TOTAL MIXTURES		144535.	147994.	125751.	125474.	123048.	133945.
TOTAL FERTILIZERS		241639.	265130.	227253.	234359.	239195.	280318.
PRIMARY NITROGEN AVAILABLE	(N)	32837.	39089.	32359.	34940.	36330.	45060.
PRIMARY PHOSPHATE AVAILABLE	(P2O5)	22483.	24308.	20845.	22351.	20183.	23951.
PRIMARY POTASH AVAILABLE	(K2O)	32660.	34563.	31470.	31626.	32365.	37641.

Appendix 2

Table D -- FERTILIZER SALES FOR KENTUCKY FOR LRA 122

FERTILIZER YEARS (JULY 1 TO JUNE 30)

FERTILIZER MATERIALS		1976 TONS	1977 TONS	1978 TONS	1979 TONS	1980 TONS	1981 TONS
NITRATE OF SODA	(16 - 0 - 0)	491.	805.	764.	652.	580.	917.
AMMONIUM SULFATE	(20/21 - 0 - 0)	382.	264.	128.	225.	297.	145.
NITROGEN SOLUTIONS	(28/32 - 0 - 0)	11286.	11281.	7518.	7386.	7701.	9557.
AMMONIUM NITRATE	(33/34 - 0 - 0)	46785.	40806.	35921.	45639.	52173.	60506.
UREA	(45/46 - 0 - 0)	7952.	18735.	18448.	16501.	13954.	20928.
ANHYDROUS AMMONIA	(82 - 0 - 0)	10853.	12291.	13622.	10054.	15508.	15890.
OTHER NITROGEN		952.	588.	514.	845.	338.	366.
TOTAL NITROGEN MATERIALS		78700.	84770.	76916.	81301.	90551.	108308.
SUPERPHOSPHATE	(0 - 18/20 - 0)	122.	66.	22.	19.	10.	10.
TRIPLE SUPERPHOSPHATE	(0 - 44/46 - 0)	17750.	21414.	20152.	24166.	24164.	24113.
OTHER PHOSPHATE		698.	312.	97.	23.	22.	170.
TOTAL PHOSPHATE MATERIALS		18570.	21793.	20270.	24208.	24197.	24293.
SULFATE OF POTASH-MAGNESIA	(0 - 0 - 20/22)	427.	446.	477.	614.	1325.	1563.
SULFATE OF POTASH	(0 - 0 - 50/52)	3602.	4091.	5006.	5117.	5175.	6407.
MURIATE OF POTASH	(0 - 0 - 60/62)	31245.	40088.	43590.	52238.	47847.	51810.
OTHER POTASH		6.	45.	4.	4.	299.	468.
TOTAL POTASH MATERIALS		35281.	44669.	49077.	57973.	54646.	60248.
MIXED FERTILIZERS							
	(18 - 46 - 0)	26973.	41739.	40195.	46883.	40715.	51354.
	(5 - 10 - 15)	36269.	31225.	27227.	22502.	23901.	25619.
	(10 - 10 - 10)	58203.	48651.	39055.	35724.	30735.	31258.
	(6 - 24 - 24)	9492.	13144.	11193.	11387.	14642.	14229.
	(5 - 20 - 20)	22390.	22002.	17208.	17737.	14020.	12587.
	(8 - 24 - 24)	222.	79.	179.	86.	691.	687.
	(0 - 23 - 30)	73.	168.	358.	564.	255.	156.
	(3 - 9 - 27)	220.	323.	176.	1042.	1974.	1137.
	(9 - 23 - 30)	64.	188.	463.	745.	1185.	508.
	(0 - 26 - 26)	1454.	2379.	2470.	3004.	4075.	3262.
	(6 - 12 - 18)	3576.	3582.	3857.	3814.	3894.	3997.
	(7 - 28 - 28)	4707.	4987.	3341.	3955.	4294.	4890.
	(19 - 19 - 19)	1756.	2406.	3168.	3209.	2646.	3451.
	(6 - 12 - 12)	7877.	5093.	3732.	2584.	1794.	1759.
TOTAL OF ABOVE MIXTURES		173275.	175967.	152620.	153235.	144822.	154893.
OTHER MIXTURES		47143.	51735.	48380.	49862.	47117.	52084.
TOTAL MIXTURES		220418.	227702.	201000.	203097.	191938.	206977.
TOTAL FERTILIZERS		352969.	378934.	347263.	366580.	361331.	399826.
PRIMARY NITROGEN AVAILABLE	(N)	52108.	58692.	54844.	55495.	59376.	68643.
PRIMARY PHOSPHATE AVAILABLE	(P2O5)	48146.	57194.	51944.	56965.	53697.	58896.
PRIMARY POTASH AVAILABLE	(K2O)	50055.	55921.	54675.	59938.	57643.	60680.

FERTILIZER MATERIALS		1976 TONS	1977 TONS	1978 TONS	1979 TONS	1980 TONS	1981 TONS
NITRATE OF SODA	(16 - 0 - 0)	185.	175.	304.	175.	141.	144.
AMMONIUM SULFATE	(20/21 - 0 - 0)	19.	37.	76.	0.	267.	14.
NITROGEN SOLUTIONS	(28/32 - 0 - 0)	996.	809.	569.	541.	619.	994.
AMMONIUM NITRATE	(33/34 - 0 - 0)	8819.	11099.	9237.	9270.	9954.	14248.
UREA	(45/46 - 0 - 0)	190.	347.	372.	188.	177.	1890.
ANHYDROUS AMMONIA	(82 - 0 - 0)	346.	25.	4.	115.	162.	538.
OTHER NITROGEN		254.	303.	357.	206.	194.	197.
TOTAL NITROGEN MATERIALS		10810.	12795.	10918.	10496.	11514.	18025.
SUPERPHOSPHATE	(0 - 18/20 - 0)	84.	45.	23.	15.	16.	17.
TRIPLE SUPERPHOSPHATE	(0 - 44/46 - 0)	759.	859.	692.	617.	489.	1098.
OTHER PHOSPHATE		408.	1.	0.	0.	0.	0.
TOTAL PHOSPHATE MATERIALS		1251.	905.	715.	632.	505.	1115.
SULFATE OF POTASH-MAGNESIA	(0 - 0 - 20/22)	3.	4.	35.	4.	17.	101.
SULFATE OF POTASH	(0 - 0 - 50/52)	158.	154.	283.	283.	926.	1537.
MURIATE OF POTASH	(0 - 0 - 60/62)	1022.	1411.	1475.	1342.	1758.	2609.
OTHER POTASH		0.	0.	1.	10.	1.	0.
TOTAL POTASH MATERIALS		1182.	1569.	1795.	1639.	2702.	4247.
MIXED FERTILIZERS							
	(18 - 46 - 0)	2072.	3036.	3892.	4371.	3864.	5677.
	(5 - 10 - 15)	20613.	19237.	18529.	17090.	17473.	18697.
	(10 - 10 - 10)	18311.	18355.	14486.	14948.	13546.	14675.
	(6 - 24 - 24)	201.	421.	377.	400.	465.	841.
	(5 - 20 - 20)	5862.	6095.	5130.	4899.	2980.	3404.
	(8 - 24 - 24)	0.	3.	1.	6.	9.	150.
	(0 - 23 - 30)	0.	0.	0.	0.	0.	2.
	(3 - 9 - 27)	0.	0.	0.	16.	0.	30.
	(9 - 23 - 30)	0.	0.	0.	0.	4.	1.
	(0 - 26 - 26)	1.	15.	28.	33.	31.	33.
	(6 - 12 - 18)	345.	261.	308.	177.	120.	103.
	(7 - 28 - 28)	20.	0.	0.	0.	4.	8.
	(19 - 19 - 19)	13.	216.	187.	182.	95.	232.
	(6 - 12 - 12)	4662.	4242.	3579.	2880.	2587.	2099.
TOTAL OF ABOVE MIXTURES		52101.	51881.	46518.	45006.	41178.	45950.
OTHER MIXTURES		8647.	9647.	9132.	9840.	9507.	10653.
TOTAL MIXTURES		60748.	61527.	55650.	54847.	50685.	56603.
TOTAL FERTILIZERS		73991.	76796.	69078.	67614.	65405.	79990.
PRIMARY NITROGEN AVAILABLE	(N)	8365.	9181.	8171.	8149.	8072.	11403.
PRIMARY PHOSPHATE AVAILABLE	(P2O5)	8668.	8928.	8410.	8441.	7570.	9244.
PRIMARY POTASH AVAILABLE	(K2O)	8506.	8856.	8137.	7844.	7827.	9419.

Table F -- FERTILIZER SALES FOR KENTUCKY FOR LRA 134 FERTILIZER YEARS (JULY 1 TO JUNE 30)

FERTILIZER MATERIALS		1976	1977	1978	1979	1980	1981
		TONS	TONS	TONS	TONS	TONS	TONS
NITRATE OF SODA	(16 - 0 - 0)	2.	22.	28.	18.	19.	25.
AMMONIUM SULFATE	(20/21 - 0 - 0)	368.	0.	0.	0.	0.	7.
NITROGEN SOLUTIONS	(28/32 - 0 - 0)	10002.	13709.	6070.	4444.	8371.	7570.
AMMONIUM NITRATE	(33/34 - 0 - 0)	9451.	10527.	7479.	8738.	15051.	18019.
UREA	(45/46 - 0 - 0)	5587.	10848.	10827.	6866.	7096.	10280.
ANHYDROUS AMMONIA	(82 - 0 - 0)	5288.	7383.	6613.	5020.	9017.	6752.
OTHER NITROGEN		18.	152.	219.	43.	38.	34.
TOTAL NITROGEN MATERIALS		30715.	42641.	31236.	25129.	39592.	42688.
SUPERPHOSPHATE	(0 - 18/20 - 0)	0.	328.	0.	99.	0.	0.
TRIPLE SUPERPHOSPHATE	(0 - 44/46 - 0)	5670.	7556.	5861.	7407.	7796.	5632.
OTHER PHOSPHATE		178.	0.	0.	0.	20.	64.
TOTAL PHOSPHATE MATERIALS		5848.	7884.	5861.	7507.	7817.	5696.
SULFATE OF POTASH-MAGNESIA	(0 - 0 - 20/22)	102.	16.	6.	6.	6.	18.
SULFATE OF POTASH	(0 - 0 - 50/52)	596.	1104.	1715.	1456.	1179.	1286.
MURIATE OF POTASH	(0 - 0 - 60/62)	18613.	30852.	29044.	30272.	34209.	32739.
OTHER POTASH		0.	0.	0.	0.	72.	142.
TOTAL POTASH MATERIALS		19311.	31971.	30766.	31735.	35467.	34184.
MIXED FERTILIZERS							
	(18 - 46 - 0)	13669.	24268.	24184.	22326.	23698.	24674.
	(5 - 10 - 15)	1753.	1796.	1594.	1396.	1215.	1659.
	(10 - 10 - 10)	699.	559.	420.	888.	574.	753.
	(6 - 24 - 24)	7499.	10119.	9925.	8213.	4647.	3462.
	(5 - 20 - 20)	5341.	2797.	765.	581.	1138.	459.
	(8 - 24 - 24)	1363.	1724.	579.	560.	9367.	2730.
	(0 - 23 - 30)	143.	125.	103.	59.	61.	294.
	(3 - 9 - 27)	478.	855.	599.	1859.	1552.	760.
	(9 - 23 - 30)	174.	181.	345.	656.	585.	1213.
	(0 - 26 - 26)	3.	1.	0.	0.	0.	0.
	(6 - 12 - 18)	634.	1150.	1279.	693.	665.	530.
	(7 - 28 - 28)	2764.	4261.	3976.	4439.	3544.	3213.
	(19 - 19 - 19)	0.	108.	0.	0.	0.	0.
	(6 - 12 - 12)	517.	433.	293.	276.	246.	293.
TOTAL OF ABOVE MIXTURES		35035.	48376.	44064.	41946.	47292.	40041.
OTHER MIXTURES		14149.	14769.	6520.	5906.	6477.	4757.
TOTAL MIXTURES		49184.	63144.	50584.	47851.	53769.	44798.
TOTAL FERTILIZERS		105058.	145641.	118447.	112222.	136644.	127366.
PRIMARY NITROGEN AVAILABLE	(N)	18369.	25888.	20946.	17249.	24654.	24457.
PRIMARY PHOSPHATE AVAILABLE	(P2O5)	15438.	22179.	19212.	18701.	20670.	17936.
PRIMARY POTASH AVAILABLE	(K2O)	18430.	26984.	24003.	24619.	27950.	24757.

Appendix 3
Costs and Prices
for Selected Inputs and Products
for Kentucky
1970-1981

Appendix 3-Table A-- Average annual prices paid by farmers for selected production inputs for Kentucky, 1970-1981.

	Unit	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
							dollars		index				
Fertilizers													
5-10-15	ton	62.50	71.66	68.50	74.00	120.00	137.50	117.50	125.00	120.00	135.00	166.25	186.25
10-10-10	ton	61.00	63.50	64.50	71.00	115.00	127.50	107.50	110.00	106.25	120.00	143.75	147.50
ammonium nitrate	ton	60.00	65.00	67.50	76.50	167.50	182.50	140.00	142.50	140.00	141.75	165.00	186.25
urea	ton	85.00	84.00	82.00	95.00	200.00	230.00	165.00	177.50	173.75	183.75	223.75	248.75
anhydrous ammonia	ton	73.00	74.50	76.00	82.50	197.50	250.00	185.00	188.75	173.75	177.50	231.25	247.50
triple superphosphate	ton	75.50	78.5	80.5	90.50	165.00	192.5	14.75	151.75	148.75	187.50	745.00	235.00
murrate of potash	ton	59.00	64.00	65.00	68.50	93.50	104.00	100.00	111.75	106.75	123.75	146.25	162.50
ag. limestone	ton	4.05	4.23	5.35	4.25	4.93	5.35	6.35	6.10	6.93	7.55	9.07	8.80
Fuels													
diesel	gal	.202	.194	.196	.223	.370	.385	.415	.468	.468	.666	.951	1.144
leaded gasoline	gal	.305	.310	.320	.348	.472	.512	.540	.588	.604	.796	1.157	1.299
Feeds													
mixed dairy (16% protein)	ton	75.25	79.60	79.30	112.00	138.08	133.75	140.42	141.00	133.25	158.00	183.00	196.25
beef supplement	cwt.	4.99	5.30	5.57	7.90	8.68	8.66	9.03	9.34	9.29	10.40	11.71	12.21
corn meal	cwt.	3.32	3.54	3.22	4.67	6.60	6.52	6.38	5.55	5.43	6.01	7.24	7.67
soybean meal	cwt.	5.68	5.78	6.68	14.00	10.43	9.06	10.78	12.88	11.63	12.88	13.68	15.17
Supplies													
4 point barbed wire,	80 rod	12.50	13.60	14.90	16.30	29.38	30.98	23.38	28.63	29.68	32.75	36.50	41.38
baler twine	40 lb.	7.10	7.20	7.70	8.80	27.30	32.00	13.50	13.40	14.20	17.38	26.75	27.13
Machinery													
4 row corn planter	910		1000	1200	1300	1600	2600	3400	3100	3350	4000	3350	3700
3 bottom plow	570		590	640	675	790	960	1025	1200	1250	1450	1525	1725
50-59 h.p. tractor	5450		5850	6000	6300	7250	8550	8800	9650	10233	11167	12333	14000
Farm labor ¹	\$/hour	N.A.	N.A.	N.A.	N.A.	1.68	1.83	2.15	2.36	2.64	2.80	3.03	3.49
Rented cropland	\$/acre	N.A.	N.A.	N.A.	29.40	34.80	37.50	40.60	49.50	50.00	51.90	57.40	62.30
Average value													
per acre of													
land and													
buildings	\$/acre	253	267	295	327	385	427	514	619	715	861	955	991

¹ Field and livestock workers.

N.A. = Not Available

Source: Statistical Reporting Service; Louisville, Kentucky and Washington, D.C.

Appendix A3-Table B-Prices received by farmers for selected commodities¹ and livestock² for Kentucky, 1970-1981

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
	dollars											
Corn bu.	1.56	1.13	1.72	2.65	3.08	2.57	2.22	2.19	2.40	2.72	3.35	2.60
Wheat bu.	1.33	1.47	1.47	3.28	3.77	2.96	2.95	2.10	3.15	4.00	3.85	3.50
Soybeans bu.	2.8	2.96	4.06	5.64	6.84	4.87	6.74	6.18	6.82	6.42	7.75	6.40
Tobacco cwt.	72.20	81.20	79.40	93.20	114.10	106.70	115.00	121.80	131.80	145.80	166.00	181.00
All Hay ton	29.00	29.00	32.00	35.00	38.50	40.00	47.00	47.50	48.50	51.0	59.50	63.00
Beef cattle cwt.	26.20	27.40	32.20	43.00	31.80	27.40	31.40	31.60	46.60	65.10	59.30	51.00
Milk cows head	253	270	310	419	405	337	400	396	523	890	1040	1040

¹Prices received for commodities are marketing season monthly averages weighted by monthly sales.

²Beef cattle prices received are monthly averages, weighted by sales for a calendar year. Milk cow prices received are straight monthly averages for a calendar year.

Source: Kentucky Crop and Livestock Reporting Service, Statistical Reporting Service, Louisville, Kentucky.



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