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One of the most significant trends in our nation has been the tremendous shift from the farm to the urban areas. Originally, of course, the state and the nation were predominantly rural but now both are predominantly urban and industrial. For the nation, this trend began more than a century ago and was proceeding rapidly at the beginning of the century. By 1920, a majority of the nation's population resided in cities and towns of 2500 or more in population.

In the South, in general, and in North Carolina, in particular, the trend got underway very slowly. It was not until the turn of the century that the shift away from an almost exclusively agricultural economy began to take place in the South, both mechanization and industrialization came slowly at first. Both processes were speeded up greatly by the two world wars. However, even as late as 1930, half of the people ~~in~~ in North Carolina still lived on farms.

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In spite of the above trend, there was no apparent decline of people living on farms in the nation until about 1914. There were several reasons for this, the period of greatest urban growth prior to 1920 was also the period of the greatest migration of people from Europe. Although many immigrants settled in farm areas, an overwhelming larger proportion of them flocked to the cities to seek industrial employment. In addition, there was plenty of farm land available, especially in the western states -- therefore, in spite of an extremely high birth rate among farm people, overpopulation in farm areas never before was an acute problem.

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World War I and its aftermath brought about sharp restrictions on migration to the United States. These restrictions were further tightened during the second World War. At the same time the two wars called for an unprecedented development and expansion of American industry. High-paying jobs in the city were available for all who sought them; however, as the

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last of the frontier areas was developed, most, if not all, of the opportunities for new land in the continental United States were cut off. Add this to the mechanization of farms which further curtailed the need for a large labor supply and one begins to see the forces at work which gave impetus to the mass movement of people off of the farm.

In 1900, North Carolina's population was still 90 per cent rural. Since that time, there has been an increase in the urban population of this State, and by 1950 -- only 70 per cent lived in areas considered rural. This compares with the South, which was 56 per cent rural and the United States which was only 41 per cent rural in 1950. At the same time, the farm population in North Carolina has become a continually decreasing proportion of the total. Even in 1930, half of the people in this State lived on farms, but by 1955 -- less than 30 per cent of all Tar Heels were farm residents. In 1955 in the South, farm population accounted for only 22 per cent of the population as compared with less than 14 per cent in the nation. It seems evident, therefore, that the process of urbanization has been progressing at a much slower rate in North Carolina than in other areas.

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Industry of the sort that provides employment for a large number of workers in urban centers has been very slow to become established in North Carolina. The mechanization and large-scale farming operations which tend to push the labor force off the farm and into the cities seems to be taking effect more slowly here than in either the South or the nation as a whole. Despite movements in the opposite direction, North Carolina still remains predominantly rural in character and still has strong agricultural influences.

Even though in 1950, North Carolina had more people living on farms than any other State, there were fewer people on farms in this State at that time than at any time since 1920. ~~Rural~~ Projections to 1955 and 1960 indicate further sharp declines in the State's population. Since 1920, with the

exception of the depression years, there has been a steady decline in the farm population of the nation. After 1940, except for a short period immediately following World War II, this drop in farm population increased sharply. The trend in the Southern Region has been very similar to that of the nation. In North Carolina, however, the decline in farm population did not begin until 1940 and even after World War II, there was a turn upward for a few years due to people returning to the farms. Although the full explanation cannot be ascertained, it would seem that these differences between the farm population trends in North Carolina and the Southern Region and the nation, particularly between 1920, 1930, 1945 and 1950 lie primarily in the pattern of industrial expansion in this State. During the earlier period, industrial expansion in North Carolina was relatively rapid, but the major development was in the textile industry which was widely dispersed throughout certain rural areas. This industry depends heavily on a female labor force so that a wife or a daughter could work in textiles while the father or husband continued to farm. The excellent road system which was developed during this time allowed for relatively easy access to the towns and their textile plants. The result was that much of the industrial labor force continued to live on farms.

In the 1945-1950 period, the lack of industrial development during World War II in North Carolina, as compared to some other parts of the South and the nation, meant that returning war veterans had limited opportunities for off-farm jobs. They remained on the farm longer in this State than in other areas before seeking employment elsewhere. Recent industrial expansion as well as increasing opportunities in other parts of the nation can be expected to attract more and more farm people to the cities and rural non-farm areas both within and outside North Carolina.

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As the number of agricultural workers declines and as productivity increases, the relative importance of each agricultural worker in our economy increases. The output per agricultural worker can be expected to continue to increase at a greater rate than the increase in the demand for agricultural products. The tremendous stock pile of agricultural surpluses today is evidence of this trend. New processes for utilizing agricultural products, such as utilizing parts of the tobacco plant not previously used in cigarettes can be expected to curtail further the need for much of the agricultural labor force of today. The further development and expansion of industry in North Carolina and elsewhere in the South probably will attract more young people from the farm. It has been estimated that less than 10 per cent of North Carolina's labor force and less than 5 per cent of the nation's labor force will be required for agricultural production in 1975.

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The amount of migration from the farm has been greater than the natural increase of the farm population; thus, despite the high birth rate in farm areas, heavy migration from farms has resulted in a net decline in farm population. There are two factors primarily responsible for the heavy migration from farms: (1) Population pressure caused by higher birth rates in the country than in the city; and, (2) relatively greater economic opportunity in the city than on the farm.

Population pressure is felt most effectively among farm youth about the time they are ready to enter upon their working career. They must either migrate to non-agricultural jobs or remain in agriculture at the expense of reducing their incomes and level of living. This is one of the reasons why our educational system and particularly our 4-H Club program is falling down in properly equipping these young people for life's work. We have never faced up to this fact and have continued as in the past assuming that they would be absorbed into agriculture. This

is absolutely not the case.

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In North Carolina, the Negro farm people do not move from the farm as fast as in other Southern States. There are several factors which must be considered in explaining the difference between North Carolina and the South in regard to trends in non-white population. One such factor has been the predominance of tobacco as the major crop on North Carolina farms. Tobacco farming requires more hand labor and uses less mechanization than most major crops. The Negro has been the major source of this labor supply, particularly as a sharecropper and farm laborer. The continuing employment opportunity for Negroes on the farms in this State has therefore contributed greatly to the relatively slow migration of non-whites from farm areas. Lack of economic opportunities for non-whites in North Carolina cities and towns is another important factor. The textile industry, along with many others which are found in North Carolina, depend almost exclusively upon a white labor force.

During the first 50 years of this century, some significant major changes occurred in the number and characteristics of American farms. The most outstanding changes occurred in size and the type of the farm. There have also been significant changes in the amount and uses of farm land and there has been a great increase in the number of small residential non-commercial and part-time farms. Nationally speaking, there has been a decrease in the number but an increase in the average size of farms used on a full-time basis for commercial agricultural production, but these changes in farm characteristics varies greatly by regions.

The picture in the South has changed drastically because of at least six factors: (1) Soil exhaustion and erosion, especially in the upland areas devoted to cotton; (2) the invasion of the boll weevil; (3) agricultural mechanization and the opening up of competing cotton-producing areas of the west; (4) urbanization which opened up markets for new

agricultural products; (5) the increased use of technology developed by research which resulted in more efficient and intensive methods of production; (6) the development of Soil Conservation and Production Control programs.

In North Carolina, the trend in number and size of farms is influenced by some of the same factors that affect the nation and the South, but in addition there are some unique factors. The continuing importance of tobacco, the development of rural industries, and the growth of part-time farming have caused trends in North Carolina to be somewhat different and distinctive. For example, there has not been as great an increase in the average size of farms in North Carolina as in the South or the rest of the nation.

Before 1930, unlike the national trend, the per cent of land in farms declined slowly in the South but more sharply in North Carolina. The decline in the South can be attributed largely to the reduction in cotton acreage brought on by the boll weevil. In North Carolina, however, the shift to tobacco farming which does not require large acreage made it possible for farmers to give up cotton acreage more rapidly than elsewhere. Trends in the South and in North Carolina since 1930 have followed national trends more closely. The depression, war and post-war adjustments have been the major factors in causing these changes.

With a sharp decline in the number of farms since 1950, North Carolina began to follow a national trend which has existed since 1920, and which has been particularly noticeable since 1940. Since the turn of the century, the number of farms in this State increased every decade except 1930-1940 which were depression years when little change took place.

The general picture throughout the nation since 1920 and in the South

since 1930 has been to consolidate and enlarge farm units. Mechanization and the more widespread use of hired labor allowed the individual farm owner to expand his holdings and to operate personally these larger units. As farming becomes more and more commercialized, the small marginal farmer is forced by economic pressure to seek opportunity in the industries of the towns and cities. Despite a sharp drop since 1950, the percentage change in the number of farms in this State was not nearly as rapid as in the South or in the nation as a whole. The major factor accounting for this is the surprisingly sharp increase in farms which are under 10 acres in size in North Carolina since 1950. The average acres per farm remains low in North Carolina, but rises sharply elsewhere. Prior to 1930, there was a steady decline in the average size in farms in both North Carolina and the South, but the shift from cotton to tobacco as the major money crop after the invasion of the boll weevil probably accounts for much of this decline. After 1930, however, the average size in the Southern Region began to increase sharply following a national trend which had begun 20 years earlier. Consolidation of farm units began on a large scale with widespread mortgage foreclosures and changes in tenancy patterns during the depression years. Mechanization and widespread use of hired labor made it economically feasible for a single operator to farm a large unit. Since 1930, the situation in North Carolina differed tremendously from the national and the Southern Region trend. Despite the sharp increases elsewhere, the average size of farms in North Carolina has remained relatively constant. As a result, in 1954 the average size of farms in North Carolina lagged further behind the nation and the region than at any time since 1900. Several factors account for this. There has been a sharp increase in the number of small farms under 10 acres which offset the small increase in the proportion of farms of 260 acres or more. The prevalence of tobacco as a major crop on most commercial farms also accounts for the fact that the

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average size of farms in the State has remained considerably smaller than either the regional or national averages. Tobacco has been less affected by mechanization and the change from tenant labor to hired labor than have most other crops. At the same time, there has been less tendency to turn the livestock enterprises which have expanded the size of farms so rapidly in some parts of the South and the nation. The increase in the proportion of farms under ten acres in size reflects the increased use of farms for residential, subsistence, and part-time farming purposes. Urbanization and industrialization of our society has contributed to increase the number of very small farms. The use of small farms and garden farms for retirement purposes has increased partly because of the increase in the number of older people and because of changing retirement customs. In North Carolina since 1950, the number of farms under 10 acres has increased 21 per cent, while in the South and in the nation the percentage change in the number of small farms was considerably smaller.

In comparison with the South and the nation, the amount of land in crops in North Carolina has remained remarkably stable. It is surprising to note that the harvested crop acreage in North Carolina in 1954 was actually approximately two per cent below the 1899 level. In 1939, the acreage in crops harvested in North Carolina reached a high point but was only nine per cent above the 1899 level. In the South and in the nation, the acres in crops harvested reached a peak in 1929 of 31 and 27 per cent respectively above the 1899 level. The stability of North Carolina crop acres is largely due to the adaptability of North Carolina soils and climate to a wide variety of crops, the decline in cotton acres, for example, has been offset by an increase in tobacco, peanuts and truck crops.

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One of the unusual points to note is that North Carolina has a tendency to keep its non-white farms. Since 1920, except for the depression years, the proportion of farms in North Carolina operated by non-white farmers has



shown surprisingly little decline. This is in contrast to the sharp and consistent decline in the South as a whole. In North Carolina, because of the predominance of tobacco farming, which is relatively difficult to mechanize and probably because of the relative scarcity of off-farm opportunities for the non-white tenant, a comparatively high level of non-white operated farms has been maintained. Another factor is that tenancy declines less in North Carolina. It reached its peak in this State as well in the South and in the nation in 1930. Since 1930, tenancy has been declining in all section of the nation but the decline in North Carolina has not been as great as in other parts of the county. Between 1930 and 1954, farm tenancy in North Carolina declined from 49% to 37% of all farmers. During the same period in the South, it dropped from 56% to 30%, and in the nation as a whole from 42% to 24%.

Another factor worthy of note is that part-owners increased sharply.

A part owner is one who owns part and rents part of the land which he operates as a farm. The term has no relation to farm indebtedness or any connection with so-called part-time farming. Since 1945, there has been a large and significant increase in the number of part-owner farmers in the nation, in the South, and in North Carolina. In North Carolina, between 1945 and 1954 although the number of farmers and farm owners declined, the number of part-owner farmers more than doubled, increasing from 19,835 to 41,429. They increased from 6.9 per cent of all farm operators in 1945 to 15.5 per cent in 1954. In 1945, part owners made up 12.1 per cent of all farm owners in North Carolina, as compared with 24.3 per cent in 1954. Part-owner ~~farm~~ farms are larger than owner farms in both total acres and in cropland, are more highly mechanized and produce more livestock. As a group, part owners are younger than full owners. Part owner families have a level of living slightly higher than full owners and very much higher than that of tenants. The increase in

part-owner farming represents a major adjustment in the use of agricultural ~~resources~~ resources, machinery and labor. It provides a means for quickly enlarging the scale of farm operations with a minimum capital outlay by the part-owner.

The size of farms in North Carolina is unusual. It is the only state in which the size of farms is not increasing. When you consider the size of farms operated by owners in the nation as well as the South and in North Carolina, you will find they are considerably larger than and have increased in size more than have farms operated by tenants. In 1940, North Carolina owner farms have increased from 75 acres to 80 acres. In 1954. While during the same period, tenant decreased from 56 acres to 41 acres. Owner farms in the South and in the nation are not only much larger than those in North Carolina, but also have increased much more. From 1940 to 1954, the South's average owner farm increase from 142 acres to 181 acres as compared with 185 acres to 241 acres for the nation. One of the most significant trends in American agriculture is the increasing tendency for farmers and members of their families to work either full or part-time off their farms. Closely related to this trend is the increasing practice by non-agriculturally employed people living in the country and operating small farms. Statistically the net result of these two trends shows up in the number of days worked off the farm and in the percentage of farm families who have non-agricultural income. For example, in 1954, 56 per cent of North Carolina farm families had some off-farm income and 27% had more off-farm income than the value of farm products sold. A USDA report shows that in 1956, 33% of the net income of American farm families came from non-agricultural sources. The more important reasons for the increase in off-farm employment are: (1) Increased urbanization and industrialization creating more opportunities for off-farm employment; (2) increased efficiency has decreased the need for farm labor; (3) farm people are seeking new sources of income as a means of maintaining and raising their standard of living; (4) the high

cost of land and of living in cities causes many families mainly dependent on non-agricultural jobs either to move to or to remain in the country and operate a small farm as a place of residence and possibly as a means of providing a partial food supply. In the case of low-income farm families working off the farm while continuing to live in the country is a desirable and profitable social adjustment. We see no reason why the trend will not continue and believe that it should be encouraged. This can be done by locating more industries in rural areas where we have a large low income farm population. It seems to me that this part-time farming is excellent in many respects, particularly as it serves as a transition device from true commercial farming to complete off-farm employment. It is inevitable that this change will take place sooner or later. Probably the worst feature of so-called part-time farming is the tendency to neglect the protection of the land from erosion. Land is a non-replaceable resource and it is a national as well as an individual responsibility that it be protected at all times. Part-time farming is not conducive to the best conservation practices.

The mechanization of agriculture is a highly significant part of the broad technological revolution which is bringing about so many changes in our society. It is going forward with increased tempo in both rural and urban communities. There is some alarm that mechanization and technology may have already set into motion certain forces which will bring about the extinction of our family farming system. Machinery has reduced costs, saved labor, speeded up production, and in general enlarged farms, but farmers as a class have not been able to take full advantages of all of these benefits. Study will reveal that the farmer has not retained unto himself the advantages that technology have made possible. He has shared the lower costs with his customers. This is a unique situation in many respects, because while the farmer has steadily lost relative position

financially, his customers have steadily gained in relative position yet it is the farmers' over-increasing efficiency that makes possible the fields of work for the non-farm employed people. Much of the income from mechanized farming is now shared by businesses and industries serving agriculture. We have a whole new concept of so-called "agri-business". At State College we have even changed our whole agricultural curriculum to fit this concept. Agriculture no longer means simply the production of farm commodities, but it has grown to mean the industries which supply agriculture with its needs and those industries that take the products of agriculture and convert them into more saleable units for the market.

It is true that while the production phase of agriculture requires less than 12 per cent of the total population, the later concept of agriculture in a broad sense employs nearly 40% of the employed workers in this country. Even though farms are larger and better managed and even though farmers are better organized and benefit from certain soil conservation programs, they are still very much in competition with each other. As a consequence, they are continually threatened by over-production and falling prices. Mechanization under such conditions and in many individual instances is not a means of enriching agriculture but rather an adjustment which the farmer must make if he is to stay in business at all. In spite of these disappointing aspects of mechanization, it must be said that in many other respects mechanization has been a means of improving the lot of the farmer and rural living as well as enriching society as a whole. Mechanization in its broader sense includes many tools and conveniences which make farm work much less burdensome and family living more pleasant.

The number of machines and gadgets in common use is almost limitless, but among those that can be briefly mentioned here are ~~run~~ piped running water, electric water pumps, feed grinders, hay balers, combines, automatic

mechanical feeders, mechanical milkers, weed killers, fertilizer distributors, sprayers and dusters, electric pig brooders. In the home there are laundering machines, hot water heaters, refrigerators, frozen food cabinets, dishwashers, sewing machines, radios and televisions.

Probably one of the best single indicators of the mechanization of agriculture is ~~the~~ tractor ~~ownership~~ ownership. The shift from the mule to tractor power is a major adjustment which has an impact on all aspects of farming and family living. Before World War I, which was less than 40 years ago, only 4% of the nation's farms had tractors. During the 1920's and the 1930's, tractor farming increased moderately in the nation to 23% by 1930. This was not true in the South and especially in North Carolina because only 4.3% of North Carolina farms reported tractors in 1940 and only 7.9% in the South. During the 1940's, the percentage of farms with tractors doubled rising to 47% in 1950 while in North Carolina the percentage of farms increased to 22% and 26% in the South. Since 1950, the increase as would be expected was greater in the South <sup>than</sup> and in the nation and greater in North Carolina than in the South. That is, North Carolina rose from 22% to 39%, the South from 26% to 40%, and the nation from 47% to 60%.

Although North Carolina and the South have lagged in farm mechanization by comparison with the rest of the nation, there are indications that they may catch up with the rest of the nation in the relatively near future.

Another tremendous advance in farming has been the coming of the motor truck and the story is very similar to that in the growth of tractors. As a matter of fact, the curves showing these two items are very similar. In both cases, the lag in the South and especially in North Carolina, can be related to the small size of farms and the prevalence of sharecropping. The operator of a small unit simply cannot afford the financial investment for such high-priced items. It might be noted here that the truck often serves

a dual source for the national market for agricultural products. The only means of fairly free transportation for these products is a conveyor of agricultural commodities.

One of the phenomena that is not really appreciated is the hiring of machine work. In 1954, over one-half of the farms in North Carolina hired some machine work done for them. This is a sizeable increase over 1949. Much of the mechanized equipment used on farms today is of a highly specialized nature. The combine and the hay baler for example are large investments even for the operator of a moderate sized farm - to say nothing of the small farmer. Only the operator of the large relatively specialized farm can afford to buy such equipment, particularly since its use is highly seasonal and rarely he operates a few days a year. Small operators, even though they own tractors find it much more economical to hire certain types of work done by other machine owners. The hiring out of the services of their mechanized equipment has become a profitable part-time and in some cases full-time enterprise of some farmers. At the same time, they make a considerable contribution to the farm productivity of the areas by making such services available. As mentioned above, farm power and machinery ownership has contributed greatly to the so-called part-ownership type of farming because with the purchase of a number of pieces of high priced equipment, a farm owner can take care of more land than he owns - therefore, he has a tendency to rent or otherwise use land he does not own. This permits him to use his equipment more effectively and at a reduced cost per unit of production.

In America, we have a tendency to reduce everything to the common denominator represented by the dollar sign. Some say this is wrong and

that we emphasize material things well beyond their true importance. Be that as it may, if we are to be able to make reasonable comparisons -- they have to be made on ~~the~~ as a common basis. As long as comparative income statistics have been available, it has been known that per capita farm incomes were considerably lower than per capita non-farm incomes. Farm incomes in the South are lower than in other regions of the United States. Some of these differences can be easily explained, but there remains the stubborn sobering fact that farmers, especially those in the South, have low incomes by comparison. Not only do Southern farmers have low average incomes, but incomes have been unstable. That is, because of weather and market conditions, farm incomes have fluctuated from high to low, and from low to high. Good weather and bumper crops usually result in an over-supply of farm products which in turn causes a disproportionate drop in farm prices. Other causes of farm income instability are major disturbances in the total economy brought on by population changes, depressions, recovery, inflation and wars.

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During a period of high income, farm land values rise, farmers go into debt for both land and equipment, and generally over-expand their operations -- then when prices drop farmers suffer more losses than those related to current operating expense -- that is, they have land and equipment for which they cannot pay and which frequently they must sell at a loss. Because of the peculiar conditions under which the farmer must operate and because of the political aspects of the problem, we have developed at the national level ~~some~~ policies and programs designed to keep the farmer from suffering all the consequences of unstable economic conditions. Other groups than agriculture also have developed policies and programs to help them with their peculiar own particular economic problems. Recently through the interest in the so-called Rural Development program, the attention of the nation has been drawn to the problems of the low-income farmer, a large percentage of whom are in the Southern States. Out of 1209 counties designated as low-income

areas, more than three-fourths were in the South, and 70 of North Carolina's <sup>co</sup> counties fell in the low-income classification.

An important though imperfect measure of the farmers' economic status is the value of products sold per farm, but the weakness is that it does not reflect cash farm expenses. It, however, is useful in studying relative trends. Cash farm expenses per farm in North Carolina, which do not include unpaid family labor, are small in proportion to gross cash farm receipts than is the case for the nation as a whole. This simply means that among the states, North Carolina does not rank as low in net farm income as it does in gross farm income. In 1939, although considerably below the national average, the value of farm products sold per farm in North Carolina was ~~the~~ ahead of the South. From that time until 1949, however, this State has lost ground as compared to both the region and to the United States. In 1954, ~~the~~ despite some comparative gains in the previous five years, the sale of farm products in North Carolina averaged only \$2,736 as compared to \$3,032 for the region and \$5,152 for the nation. This is serious because North Carolina dollars must be spent for the same products and at the same price as those made in Illinois or Iowa.

One of the major factors accounting for the lag in North Carolina's per farm sale is the sharp increase in the average size farm in the other areas of the nation and of the South as compared to North Carolina. As mentioned above, the size of North Carolina's farms has remained constant for a number of years whereas in the nation as a whole ~~approx~~ approximately one hundred acres ~~ex~~ per farm have been added. This really begins to pay off when this acreage can be farmed with large, heavy duty power units. Another economic aspect which should not be overlooked is that in North Carolina even with a sharp increase in the value of land and buildings since 1940 -- that is, \$2,647 per farm to \$8,059, the State has lost ground as compared to both the South and the nation. The South jumped



form \$3,231 per farm to \$12,755 -- while the United States rose from \$5,500 to over \$20,000. Thus, the average farm in the South was worth half again as much as the average unit in North Carolina, while the average farmer in the nation was two and one-half times as valuable as those in North Carolina. On the other hand, the value of land per acre in North Carolina was far greater than either the region or the nation. This simply reflects the high premium placed on tobacco acreage. The average value per acre in North Carolina as \$128 compared to \$77 and \$84 in the nation. The small size of the average farm, however, cuts the average value of the farm in this state down considerably.

The term "level of living" has become common in our conversation and it is no idle boast that Americans have many of the material possessions which make up this so-called level of living. It should be recognized, however, that there is not one level of living in America -- there are several "levels of living". There is great variation from farm to farm, from city to farm and from region to region. Although the urban areas of North Carolina compare favorably with the urban areas in other parts of the nation, the rural and farm sections of the State and region have lagged ~~behind-farm-beh~~ far-behind far behind other areas in the availability of those material things associated with the high living level. Many factors account for the relatively lower living status of the farm family in North Carolina. Over-population, small size of farm, single crop agriculture, a high proportion of tenancy, a ~~slower~~ slower adoption of mechanization and technical improvement, fewer and poorer off-farm employment opportunities -- all are factors which contribute along with others to the situation. One of the most important factors which is related to this is the relatively poor level of education in the rural farm areas of the South. Despite the fact that in recent years rapid strides have been made in the improvement of these conditions, the simple fact is that the region still lags although we are closing the gap. The increasingly high proportion of farms in North Carolina

with tractors and the overwhelmingly large proportion of farms with electricity are examples which are fundamental and point out our opportunity for future improvement. Nearly all farms in North Carolina as well as the nation have electricity available. In 1935, less than four per cent and today practically 95 per cent can enjoy the benefits coming from the use of this most versatile form of power.

Although it is hard to believe, North Carolina farmers do not have as many automobiles as do the farmers of the nation. In 1954, three out of every five farms in the State had at least one car. It is predicted that 75 per cent will have automobiles by 1960.

There has been a decided upturn in the number of telephones on farms since 1940. It is more noticeable in both the nation and in the south than it is in North Carolina, although since 1950 North Carolina has made a great deal of progress. The widespread use of REA assistance for telephone service has been effective in North Carolina. In the nation, about 50 per cent of all farms have telephones, but only one out of six North Carolina farms enjoy this useful device.

To me, one of the modern mysteries of progress has been the failure of the efforts of all agencies to secure running water for the majority of our farm homes. In spite of all other industries indicating progress, the use of running water which is so closely connected with modern life has lagged behind in the farms and the farm homes of North Carolina. Of all the modern facilities now available to farm people, none can contribute any more to profitable farming and good living than running water with its associated facilities such as electric water pumps, water storage tanks, automatic watering devices for livestock and poultry, kitchen sinks and dishwashers, automatic laundry machines, hot water heaters, laboratories, bath tubs, showers, and sewage disposal facilities. Perhaps the availability of running water is more highly correlated statistically with the level of family living in the

country than is any other single convenience. The availability of running water is highly correlated with other conveniences because it either depends on other facilities such as electricity or other facilities such as the modern bathroom depends upon running water. Sanitation, hence good health, obviously are dependent upon running water. It is interesting to note that the adoption and use of running water by farm people has lagged far behind the adoption of electricity, radio and automobile. Even today in North Carolina, the percentage of North Carolina farms with running water still lags about five years behind the nation according to the curves and less than fifty per cent of our farms enjoy this relatively inexpensive necessity and convenience.

~~Exam~~ Two other facilities -- home freezers and television sets -- which were almost non-existent ten years ago -- can be found in a rapidly growing portion of farm homes. Over one-fifth North Carolina farms have frozen food units for preserving the family food supply and while this is slightly behind the figure for the southern region, it is considerably behind the nation where one-third of the farms have this facility.

The growth and the use of the television in the farm home is even more striking with over one-fourth of the farms of North Carolina reporting this new communication facility by 1954 as compared to practically none in 1950. On the other hand, over one-third of the nation's farms have television sets. We should not overlook the widespread use of the radio as a means of mass communications and the spread of new technology and new ideas which broaden the social horizons of farm people.

Perhaps to sum up the facts which I have tried to present above, the following summary will help focus our thinking on the present situation. Despite the remarkable strides made in the past 30 years, North Carolina continues to lag well behind the South and far behind the nation in many of the important criteria which are basic to a high level of living. There

is no single item that can adequately represent the over-all picture of change that has been taking place in the level of living of farm people. In an attempt to meet the need for such a ~~stander~~ year yardstick, several items have been combined into a single index which will allow for comparison of the progress being made by farm families. This index is composed of four items: (1) Percentage of farms with electricity; (2) percentage of farms with telephones; (3) percentage of farms with automobiles; and (4) the average value of farm products sold.

Using this combined index, North Carolina lags both behind the region and the nation. As a matter fact, in 1954, North Carolina just passed ~~but~~ the baseline used for the nation ten years earlier. However, percentage wise North Carolina farm families have increased their level of living index by over one-fourth since 1950, and while this is a greater increase than either the region or the nation, the relative rank or ~~posititon~~ position of the State remains about the same.

If appreciable gains are to be made in the level of living of North Carolina farm families, so as to be reflected in the reduction of the gap that now exists between North Carolina and the rest of the nation, there must be improvements in a number of related areas. Very important among these areas are: (1) the greatly increased use of agricultural resources and technological improvements of agricultural production; (2) improvement in the general level of education, including technical and vocational training; and (3) further expansion of industry, particularly in the manufacture of products of the heavy, durable type. There are indications now appearing that we will move ahead in these areas and that we can raise the level of living of our farm people in the next decade.

Up to this point I have been giving you some information as it is related to a comparison of North Carolina with the south and with the nation as a whole. Digressing for a little bit, I would like to point out the great problem that exists today in relation to the overall world situation. Perhaps North Carolina is, or should be, as much concerned with the economic situation in the world as any of the states in the nation. Our present economic level is dependent upon the exporting of a considerable proportion of our major agricultural commodities. The ability and willingness of the rest of the world to buy these commodities will undoubtedly have a very decided effect upon the future of North Carolina's agriculture. For a moment, I would like to discuss the world situation in summary form.

Generally speaking, the economic situation in the world as a whole is not very good. If we group the countries of the world into three groups based upon the per capita income in 1950, Group I - countries having above \$450 per person income, those with \$150 to \$450, and those with less than \$150 per person, we would have a basis for discussion.

One factor that distinguishes the more highly economically developed countries is the amount of inanimate energy they use -- coal, oil, gas, hydro-electric power to drive ~~locomotives~~ locomotives, tractors, automobiles, factory machines, home appliances and to supply light and heat. In the United States in 1950, we used an amount of energy equivalent to 7.3 tons of coal or 12,200 kilowatt hours of electricity for every man, woman and child. Reduced to the equivalent of human labor, that is the use of muscles per person, this means that the average American has 81 mechanical - chemical slaves. India on the same basis has only four mechanical - chemical slaves per person, Iran - five; and Mexico - nine. A few other revealing comparisons bearing on the standard of living are: Health - the average length of life in economically underdeveloped countries is only about half of that in the

highly developed countries. Sickness is very frequent and parents must expect to lose a large proportion of their children in infancy. There are less than one-sixth as many doctors in proportion to population.

Food - measured in calories, the food supply of economically underdeveloped countries is perhaps a third less than in the more advanced countries.

When one takes into account the relatively expensive "protective" foods, such as <sup>milk and</sup> meat, the disparity in nutrition is very much greater.

Clothing - the consumption of cloth for clothing, home furnishings and other purposes is only about one-fourth as great in the underdeveloped areas. Education - only one person in four on the average in underdeveloped countries knows how to read and write. The opportunity to attend school is limited to less than half the children of school age. Lack of education, low productivity and poverty form a vicious circle. Poor people cannot afford the expense of good schools and teachers to raise the low educational level and people without educational opportunities cannot learn modern methods of production which would let them work more efficiently on their farms or in their shops, thus enabling them to purchase more educational opportunities.

The areas classed as economically underdeveloped include almost all of the countries of Asia and Africa, most of the countries of Latin America and several in Southeastern Europe. Their total population is roughly one billion eight hundred million. This is two-thirds of the entire world population of two billion seven hundred million. Somewhat more than one-sixth, that is five hundred million, live in countries classed as intermediate -- of which there are seven in Europe, five in Latin America plus Japan, Russia, Israel, and the Union of South Africa. The highly developed countries are all in Northwestern Europe except for the United States, Canada, Australia and New Zealand, which were settled by Northwestern Europeans. The highly

developed group totals five hundred million persons, somewhat less than one-sixth of the world's population.

It is striking that nearly all the countries of the Tropics are underdeveloped. All the highly developed countries are in the temperate zone but ~~they are also~~ there are also underdeveloped in the temperate zone, such as China, Iran, Turkey, Greece and others.

Among the underdeveloped countries -- some like India, Indonesia and Egypt have very high ratios of population to cultivatable land and to other potential resources. If the United States had as many people per square mile as India, nine hundred million would have to make a living in this country instead of our present one hundred and seventy million. The development problem is greatly complicated in such cases by the tendency of the birth rate to remain high (high birth rates and death rates are characteristic of underdeveloped countries) even after the death rate has been lowered by the advances in public health and food supply which are usually among the first objectives of development programs.

The ability of the economically less developed countries to make themselves heard in World affairs has grown enormously in the last few decades. While sheer numbers is not, of course, the main factor determining a people's influence either in peace or in war, it seems likely that two-thirds of mankind, once they have acquired more of the tools of modern production, higher levels of education and more experience in modern management and government, will have much to do with shaping the course of civilization on this planet.

Some may wonder at our interest in this sort of thing, but I believe a thinking person reflecting upon modern transportation and communication and the knowledge that two-thirds of the world's people are hungry cannot fail to see the implications. Perhaps in this time of plenty and abundance, some of our efforts at least should be directed towards helping solve these world problems.

Extension As I See It Today: All the foregoing is to show our situation, which means our opportunity and our responsibility. In spite of great progress, there is much to do! Are we prepared, are we ready? Do we have the "manpower", the tools, the know-how and other resources? Can we effectively communicate? Motivate? Remember the Smith-Lever Act says "And to encourage application of the same".

It's not enough for an Extension "teacher" to just teach like a classroom instructor. Our students are not classroom captives, sent by their parents to "get educated". They are the men, women and children of the farm!. The food producers for the nation, the homemakers and mothers of future national leaders. They haven't time to fool around with Greek philosophy, they want facts, techniques, hard-core solutions to their problems. They want help in decision-making.

They look to us, to Extension, for guidance, for leadership, for facts, for methods and above all for results!

These needs, and these vast world shaking changes bring us to our problem here today. Progress and time march on. But progress has BY-PASSED many. Where do we go from here? I don't know and you don't know, but I do know THIS: If each of us, in our own way will study and think and try, we can lick this thing. But if each individual and each agency sits back and says, "I'm too busy, let those other fellows or those other agencies do it," then we will not lick this problem. If this is our attitude, we might as well give up and say it can't be done. I now want to ask you - in his own time, WHAT SHOULD A MAN DO? What can he do? If it is easy to do, is it worth doing? Why should, in our time, Tensing and Hillary climb Mt. Everest? WHY? Why should Roger Bannister spend his life training to run the four minute mile? Why should Einstein spend his life developing the simple formula  $E = M \times C^2$  which is changing the world? Why should Jonas Salk search for a vaccine that would conquer polio? And why did Sam Woodson in his do or die



effort to rescue little Bennie from the well as the last cave-in started say, "It wasn't Bennie's voice I heard, it was God's!" What difference to them personally, 20 years from now? The sun comes up and the sun goes down, doesn't it? Who cares if somebody did something or somebody else didn't?

Man is an animal, isn't he? Why should he go to a lot of trouble about the KIND of animal he is? What is he trying to PROVE? Who is he trying to IMPRESS? Yes, man is an animal but he is an animal PLUS - and the PLUS is what counts! PLUS a mind! PLUS a memory! PLUS a heart and love. And the heart and love are the greatest of all. "For as ye do unto the least of these, so also ye do unto me!"

Yes, these are our challenges and our responsibilities - this is OUR WORK. But what of OURSELVES - each of us, a creature with a mind and a soul. What is our PERSONAL CHALLENGE? Mine is this. And I think it is yours. Just a little prayer: "Oh Lord, let me help someone each day. Let me do what I can for others. Let me do it now, for I shall not pass this way again." And so let me close with a little poem that has helped me, and I know will help you as you go about your never-ending effort to help people:

"It is my joy in life to find,  
At every turning of the road  
The strong arm of a comrade kind  
To help me onward with my load.  
And since I have no gold to give,  
And love alone must make amends  
My only prayer is, while I live -  
God make me worthy of my friends!"