POPULATION AND ENVIRONMENT

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The extraordinary flood of information, opinions, and pleadings that has appeared in the last year on the subjects of population and environment—whether considered as separate topics or in their relation to one another—makes it difficult to say anything new on these issues. I will focus on some of the situations, key trends, and relationships that I think are relevant for an audience having a primary interest in rural and small town society.

The potential severity of pollution or other environmental impairment is obviously determined in part by population size. National boundaries are finite and the larger our population, the larger problems of waste disposal, pollutant control, or energy consumption will be—at least in the absence of a declining level of living. But environmental problems are not confined to densely settled areas, nor even to growing areas.

An end to population growth for the nation—and in time for the world—is a widely held objective today. Ultimately, there are limits to the number of people the world can accommodate under any standard of living. In our nation, however, it is not the rate of present or foreseeable population increase that is the paramount cause of environmental problems. Perhaps the best example is in the area of electric power production. Since 1950, electric energy production has increased by 300 percent, while population has risen 34 percent. Thus only one-ninth of the increased use of electric energy—with its serious attendant problems of air and water pollution and fossil fuel extraction and depletion—can be ascribed to population growth. The rest is the result of enormously increased per capita usage. The projection for the rest of the century is about the same. Thus, huge additions to present capacity will be needed, but only a fraction of the need will stem from increased population.

Natural gas usage in the same twenty-year span rose by about 250 percent, and use of crude petroleum by 100 percent. The number of automobiles and trucks in use has more than doubled since 1950. The percentage of families that own more than one car has gone from 7 percent in 1950 to 27 percent in 1969 and is still steadily rising. Estimated water use doubled from 1950 to 1970, with the largest single component of the gain resulting from the increased needs of

steam electric utilities. It is our rising standard of living that is bedeviling us in these areas of use.

The volume of farm production for human uses rose by 44 percent, only moderately above population growth. But to achieve this output, the application of fertilizers was doubled and that of pesticides apparently increased even more.

These are simple measures, but the wide disparity in growth rates between population and consumption items leaves no question that the rapid growth in demand for the items mentioned is due primarily to increased usage per capita. Thus, although we will add 100 million to the population by the year 2025—even if every woman entering the childbearing years between now and then has only enough children to exactly replace the parental population—this potential growth is not the crux of our environmental quality problems.

If there are too many people in the nation today, much of the blame can be placed squarely on rural people. Their level of childbearing has been considerably above the national average. Although rural women of age 35-44 comprised only 27 percent of all women in the nation of that age in 1960, they were responsible for 66 percent of all the childbearing from that age group that went toward increasing the nation's population rather than just maintaining it.

Much of the character of the human environment is determined by the extent and form of population concentration, rather than just by total size. The dominant worldwide trend has been rapid urbanization, in part caused by the decline of agricultural jobs in all reasonably developed countries, plus the movement to the cities of the surplus rural population created by high rural birth rates. These trends have been largely independent of political systems or agricultural policies. The forces of technological change in farming and the higher income earning opportunities in urban areas have transcended national and cultural boundaries.

We have all seen some of the major urban concentrations in this country and many of us have lived in them, but it still comes as a shock to many to hear that in 1960 the U.S. urban population, amounting to 70 percent of the total, occupied just 1.1 percent of the nation's land area. Yet, the density of urban settlement per square mile is actually less now than one or two generations ago—both in the central cities and the suburbs. It is the scale of urban settlement that is so much larger, with 33 of our metropolitan areas now containing a million people or more each, and many of them merging into one another to form chain-like urban regions.

It is this scale of settlement that seems so uniformly to result from the world's present forms of social and economic organization that poses the most obvious physical environmental hazards, such as air and water pollution. These hazards are at least susceptible to measurement and in many cases to alleviation, given enough money and time. But it is in more subtle and less predictable or manageable ways that the massing of huge populations many have psychological consequences that will challenge the public order and the ability of the society to provide adequate remedies for social ills.

I find it interesting to see how far back and how pervasive in human history firmly held views were expressed about the relative merits of rural and urban environments. In the fifth century B.C., Sophocles assured us that "The first requisite to happiness is that a man be born in a famous city." Three centuries later, in the book of Ecclesiasticus the question was asked, "How can he get wisdom who holdeth the plow?" At a later time Sydney Smith, the nineteenth century English writer, wrote that he had ". . . no relish for the country, it is a kind of healthy grave," and our own Henry Thoreau claimed that, "It makes but little difference whether you are committed to a farm or a county jail." On the other hand, Rousseau was adamant that "Cities are the sink of the human race," and his admirer, Jefferson, offers several quotes about the virtues of farmers and the evils of the city. "The mobs of great cities," said our founding father, "add just so much to the support of pure government as sores do to the strength of the human body." And in the 1950's Ezra Taft Benson assured us that America's rural people ". . . are her bulwark against crackpot programs and foreignisms."

There are some hard data—social indicators—that can be mustered in support of comparative evaluations of the rural and urban environments. But they are not conclusive. Urban areas look best on some of them and rural areas on others. Large urban areas are usually superior in average family income, in access to goods and services, and in variety of employment opportunities. Most rural and small urban areas appear to have less crime, violence, and general social pathology, and less air pollution or traffic congestion. In the final analysis, the preferred environment is—as it has been over the centuries—a matter of personal taste and conviction. One fact is certain. We cannot live exclusively in either of these settings. Both are essential to our civilization.

The present U.S. population is estimated to be about 204.7 million. Of this number perhaps 63 million, or three-tenths, live in nonmetropolitan territory, that is, outside of cities of 50,000 or more people and the areas closely associated with them on a commuting

basis. The nonmetropolitan areas contain a declining proportion of the total population, not only because they have less real growth than the metropolitan areas, but also because some of their growing sectors become metropolitan in the process of growth and are reclassified.

I estimate from the preliminary 1970 census returns that the nonmetropolitan counties gained in population about 4.6 percent during the 1960's. This is less than half as rapidly as these counties would have grown if there had been no net outmigration from them in the decade. Their failure to retain the equivalent of their excess of births over deaths is indicative of unsatisfactory social or economic opportunities in them, or of a disparity between the typical life chances and life style that they offer and that to which their young people aspire.

If we look beneath the overall population change of nonmetropolitan areas, we find that the farm population within these areas dropped by about 4.5 million, or about one-third. The nonfarm people of nonmetropolitan areas, who comprise by far the great majority of this population residence class, increased by about 16 percent, or more than 7 million. This is clearly above the growth that could have resulted from natural increase alone. The nonfarm component of the nonmetropolitan population has been growing more rapidly than for the country as a whole, but the extent of this growth has been masked by the continued rapid decrease in farm people. The diminishing farm base will be less capable in the future of offsetting gains in the nonfarm population—assuming that such gains continue. Thus, we may well see a future growth rate in nonmetropolitan areas as a whole that more closely approximates that of the nation as a whole.

Change in local population size depends largely on economic change. Between 1962 and 1968 the number of wage and salary jobs in private nonfarm industries increased by 30.2 percent in nonmetropolitan counties, compared with a growth of 24.6 percent in metropolitan areas. The greatest comparative growth in nonfarm jobs in the nonmetropolitan areas was in manufacturing, but comparative gains were made in services and trade as well. The high rate of nonfarm wage and salary job growth extends even to the counties that are completely rural in population, having no towns of 2,500 or more people. Most of the completely rural counties failed to grow in population, however, because their dominant industry—agriculture—continued to drop in employment.

At the moment, the continued exodus from farms and from the southern coal fields, together with occasional other factors, has left about 1,500 counties, or half of the country's total, with fewer people

in 1970 than in 1960. And about the same number declined in the 1950's. As a result of the net migration trend toward metropolitan areas and away from the most heavily rural areas, the distribution of counties by population size has been steadily altered over the last thirty years. There has been a decline in the number of modal size counties—those with 10,000-50,000 people—and an increase in the number of both counties with more than 50,000 people and those with less than 10,000 people. Because so many agricultural and mining counties have dropped in population, there are more people living in counties with fewer than 10,000 residents today than there were thirty years ago.

To alter substantially the distribution of people in the United States by size of community may well not be possible, at least in the foreseeable future, nor even desirable. Large cities have emerged for very compelling reasons, and the enormous investment in cities is not going to be dismantled. What is perhaps not only feasible but necessary, however, is to insure that in a metropolitan dominated society the nonmetropolitan areas are at least given the chance to provide maximum working and living opportunities for people who prefer to reside in them.

Every opinion poll taken seems to indicate that the actual distribution of people does not conform to the popular wish. The responses in the now famous Gallup polls on the subject have repeatedly shown that more than half of the people would prefer to live in a small town or on the farm. Call this nostalgia on the part of urban people who give such an answer. Call it ignorance of what small town or rural conditions are like. Call the desired living pattern unrealistic and not feasible of being achieved. All of these reactions may be justified. But the survey responses do indicate a strong undercurrent of dissatisfaction with urban conditions, much of which can surely be classed broadly as environmental discontent. Given the opportunity, some of the city people will act on their dissatisfaction and try life in a smaller-scale community.

Perhaps because of the overriding concern about rural-to-urban migration, there has been little awareness of the extent of urban-to-rural movement that has taken place concurrently, and of the proportion of the total rural population in the United States that is of urban origin. Data from a national survey in 1967 show that 23 percent of the rural population 17 years old and over consisted of people of urban childhood origin. There were more than 8 million such people. Some of them were essentially suburban, living in the fringes of metropolitan areas. But even in the nonmetropolitan rural population, 20 percent of the adults were of urban origin.

Rural residents of urban origin are common in all adult age groups, but more so below age 50 than above it. The educational attainment of urban migrants to rural areas is considerably higher than that of rural natives. Twenty-five percent of the inmigrants have finished at least one year of college compared with just 10 percent of the rural natives. A majority of the inmigrants hold white collar or craftsmen jobs. As a result, the incidence of poverty among urban migrants to rural areas is very low (11 percent), and only half as high as that of rural natives (22 percent). The number of urban-to-rural migrants and their good economic status indicate that such migration is attractive to a substantial number of people and that they are already an important element in the economy, labor force mix, and general vitality of rural communities. Efforts to foster the movement of urban people to rural or small-city areas need not begin from scratch. There is an established base of such people.

A further element in the relationship between population distribution and environment is that of differences in regional preferences. For example, it has been commonly observed that most areas of the United States that have mild winters have been growing rapidly. This growth has by no means been limited to the movement of retired people.

Peter Gould, a geographer, has developed a series of "mental maps" of the United States based on the perceptions of students from different universities who were asked to list their preferences for states in rank order. From these rankings maps have been constructed that reflect for this population group the relative residential desirability of various areas. A remarkably similar map emerged for most groups of American students. The West Coast is an area of high desirability, with the rating then going downward in Utah but rising again in Colorado. There is a general decline in rating in the Great Plains, with a low in the Dakotas. Near the 100th meridian the rating rises toward the Northeast but drops toward the South, except for Florida. Preference maps for students from California, Minnesota, and Pennsylvania are generally similar to one another, except that each gives high ratings to the home state. The map for Alabama students shows the North as undesirable, and the South rather differentiated, with high loyalty to Alabama but mixed ratings for other southern areas. In the case of North Dakota, even local loyalty does not make the home area the most preferable. The areas of greater attraction for North Dakotan students were the West Coast and Colorado.

Such variations in residential preference would be expected to play a role in decision making with respect to migration. Presumably, areas of high preference would be areas of net inmigration, unless their

economic condition was known to be unfavorable. Areas of high level preference, but low national image, such as Alabama, could still have ample population growth if their economies were healthy enough to hold the locally reared population in the areas. Areas such as the Dakotas, on the other hand, are handicapped at present not only by low economic growth, but by the negative image of the region held by many of the natives as well as by outsiders. It is probably valid to conclude that the population losses that presently characterize the entire Northern Plains stem from both the economic conditions and the perceived environmental disadvantages of the region, and that more than average economic developmental assistance and intervention would be required to overcome these drawbacks.

The population distribution policy stance of the present administration has been to encourage the growth of population in rural areas. The most notable instance of this determination was expressed by the President in early 1970 when he spoke of the desirability of not only stemming rural-to-urban migration but reversing the flow. Specific recommendations for action relating to the location of economic growth—and thus of population growth—have not yet been made, but the next Congress may receive legislative proposals on this subject.

The weight of much outside opinion seems to heavily favor the growth center, central place theory approach to development, but with explicitly pessimistic views about the prospects for nonmetropolitan scale communities. In addition, nonmetropolitan areas are rather casually described as being within commuting distance of metropolitan centers and thus adequately served by further metropolitan development. The growth center approach per se is not inimical to nonmetropolitan interests. But unqualified pessimism about the potentials of nonmetropolitan cities and areas is based, I believe, on a seriously inadequate perception of what is transpiring in many of them. The assertions about commuting are usually based on the maximum range of commuting found, without regard to whether a meaningful proportion of workers is involved. In short, population distribution policy discussions are not well served by oversimplified notions of nonmetropolitan conditions and of the interrelationships of such areas with metropolitan centers.

Beyond economic development considerations, the public still views rural areas as having—and envies rural people for enjoying—clear water and clean air. And freedom from urban forms of trash and dirt are presumed rural amenities, too. But our increasing awareness of the existence of rural pollution problems calls for greater candor in acknowledging such problems and greater efforts at their control or correction. By virtue of their smaller scale, rural and small-city

areas are never likely to equal larger urban areas in availability of services to residents or variety of overall economic opportunity. And the rural-urban income gap may never be closed. This makes all the more imperative attention to the quality of the rural physical environment if the superiority of this asset is to be maintained, not only for the satisfaction of present and would-be rural residents, but also for the periodic enjoyment of the masses who occupy the ever-spreading cities and suburbs.