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Feature articles highlight research or programs of merit as examples to professionals, researchers, and educators in rural development in the southern region. They should deal with one area or subarea of the four major concerns of rural development outlined by USDA:

- Community Services and Facilities
- People Building
- Economic Improvement
- Environmental Improvement

Opinion articles examine critical issues confronting Research and Extension practitioners in rural development, emphasizing implications for program planning and research.

Research notes are brief summaries of empirical research projects underway or recently completed.

Program notes are brief summaries of noteworthy rural development educational or assistance programs.

News and notes report events and personalities of interest to the region.

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Publications Planning and Art: Extension Information, Mississippi State University
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Printing: Central Duplicating

The Southern Rural Development Center, one of four such centers in the nation, focuses on specific rural development problems of the region. It serves the thirteen southern states and Puerto Rico by developing knowledge essential to rural development and by providing technical consultation where needed.

The SRDC is jointly sponsored by Mississippi State University and Alcorn State University. Its clientele is the Research and Extension staffs of the 27 land-grant institutions with rural development or community resource development responsibilities.

INFORMATION FOR SUBSCRIBERS

Rural Development Research and Education is published quarterly by the Southern Rural Development Center, Mississippi State, MS 39762. Subscriptions or sample copies are available at this time without charge.

Third-class mailing permit No. 39 at Mississippi State, Mississippi.

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WINTER 78-79 VOL. 2 NO.4
The following two articles are the last in a series of 10 general information papers prepared by the functional networks of the Southern Rural Development Center. The other eight papers are printed in the Summer and Fall 1978 issues of Rural Development Research and Education and are available on request.

In addition to the general information papers, each network is preparing a more lengthy synthesis paper and an extensive annotated bibliography. Seven of the synthesis papers and eight of the bibliographies are now in print and can be obtained from SRDC.

Land Use Policy Research and Extension Program

Dr. But F. Long
Associate Professor
Virginia Polytechnic Institute
and State University

When the Southern Rural Development Program was authorized by Congress in 1975, it was to undertake the difficult task of synthesizing research methods and results, land use policy issues ranked high in the priority list of rural development areas. Part of the area in which Southern Rural Development Program has received and continues to receive more attention from the citizenry and public officials. It has been said that land use has never been the adoption of public policies, although it has often resulted in policies which yielded effects quite different from those intended by policy makers. Even the casual observer might conclude that is nowhere more evident than in the area of land use. While every governmental unit at every level sooner or later finds itself confronted with land use issues.

The Land Use Issues Functional Network was formed to accomplish several objectives which can be summarized as follows:

1. To bring together a group of research and extension personnel from the region to focus on land use policy issues.

2. To inventory and assess approaches, methodology and results of land use research in the region, and to a lesser extent nationally.

3. To investigate land use extension.

4. To attempt an evaluation of past and current policies and suggest directions for future research and extension activities.

This paper attempts to summarize some of the thought, deliberations, and conclusions of the network in carrying out its functions. Considerable time and effort were spent in grappling with conceptual issues surrounding research and extension efforts in this area. Some of the complexity of the issues will be briefly highlighted in this paper. In addition, a brief summary of survey results and interpretations will be presented. However, no attempt is made to be inclusive of all topics considered or meriting consideration.

General Nature of Land Use Problems

Land use problems might be succinctly described as resource allocation problems. While such a description is concise, it contains an implicit truth which is not always apparent. Resource allocation, as used here, encompasses the entire process by which decisions are made and implemented regarding land use and the distribution of gains and losses derived from its use.

Land is a scarce resource, in the sense that there is not enough land for everyone to use land in every way that is desired or necessary. This means that resource allocation is the process of choosing between alternative uses of the resource.

One central fact remains, regardless of the method, procedure, system used, or even who makes allocative decisions. Because of certain characteristics which make land a somewhat unique, scarce resource, the allocation problem becomes an extremely difficult one. Several of these characteristics have been extensively discussed and debated, but it may be useful to briefly mention a few characteristics which underline many land use controversies.

A key feature of land use problems is that the activities (use) by one party affect the enjoyment or satisfaction of others. Economic analysis is, in part, the "technical externalities," which may lead to the situation of the market mechanism not taking account of all costs imposed or benefits accruing to parties other than the landowner.

Since most land use controversies center around the use of privately owned land, the issue of public and private property rights cannot be ignored. Much of the policy debate concerns the definition of property rights and the appropriate mix of public and private decision making roles.

Another aspect of this controversy concerns the level of government and the desirable use of constitutional powers:

1. Planning power to plan public investments for public regulation of private activities.
2. Eminent domain which provides for the taking of private property for public purposes with just compensation and the use of due process of law, and 3. Taxation of privately owned property.

These and many more factors complicate the allocation of resources among competing alternatives. Conflicts exist between uses, between individuals or groups, and between points in time. These conflicts must all be resolved in the allocation process, regardless of the institutional mechanism used. The question is not what is to be allocated, to what uses, to whose benefit, and to whose loss, as well as why and how the decision is to be made, must be dealt with in any land use decision.

Review of Land Use Research

In reviewing approximately 380 publications - primarily research, extension, research bulletins, and extension publications - which have appeared in the past 10 years, several striking points are revealed. Many major questions that very little empirical research has been reported by economists on the general topic of land use policy. Most publications have not provided a large deal of information which can be directly used to enlighten public policy participants. Space permits only a cursory look at some of the issues about which a considerable amount of useful information has been generated and others in which little has been done.

Real Property Taxation and Local Government Finance

Taxation, police power and eminent domain are perhaps the most important characteristics of which are used and are used to exercise a degree of public control over land use. By tradition, real property taxation has been used primarily as a source of local government revenue. Its role in influencing land use patterns has usually been a secondary concern. In recent years, however, the taxation role in determining land use and the development of a public policy instrument for influencing land use has received much public attention. The most common use in this regard has been adoption of legislation permitting certain lands used for specific purposes to be taxed at their value in use, rather than at full market value.

While far too little research information on the effects and effectiveness of such approaches has been forthcoming, this is probably the area in which economists have generated the most generalizable results. A number of excellent studies, including several in the Southern region, have examined the implementation and effects of various differential assessment schemes (21, 11, 14, 22, 3, 12, 14, 17, 6). While the research results have been mixed with regard to the effectiveness of value-use assessment in preserving agricultural and open space land, there is general consensus that this tool by itself will not be effective in changing land use patterns over any extended period of time (12, 4).

Most state preferential assessment laws include an objective of improving the tax equity, which usually means shifting the relative tax burden away from farmers. If this is an objective of society, adequate and sound assessment laws and their implementation vary greatly between states (4), the distribution of the benefits and costs of such programs is difficult to determine (12, 13, 10).

Ownership and Control of Resources

Except for isolated case studies, very little is known about who owns and exercises entrepreneurial control over our resources and information system is in such a state that it is extremely difficult to determine ownership, much less control. As Wunderlich has stated, "Perhaps, although they may be in a legal sense, the public land records are not in fact a generally accessible display of land, interests, and interest holders" (31, p. 8). He further points out that public land records are not well suited for obtaining information on the ownership status of a whole a jurisdiction. If we hope to go very far in analyzing workings of the land markets, impacts of alternative public policies, or current and future trends in agriculture, it is essential to have a better understanding of population and economic activity with its accompanying resource demands, it will be necessary to know much more about the nature and control of land resources.

Except for the interest in favorable ownership, little information is available in interest in ownership quality or improvement of land data systems has been evident among economists in recent
TABLE 1. AGRICULTURAL ECONOMICS RESEARCH PROJECTS IN LAND USE POLICY, SOUTHERN REGION, BY STATE.

<table>
<thead>
<tr>
<th>State</th>
<th>Number of Projects by Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>1</td>
</tr>
<tr>
<td>Arkansas</td>
<td>1</td>
</tr>
<tr>
<td>Florida</td>
<td>2</td>
</tr>
<tr>
<td>Georgia</td>
<td>2</td>
</tr>
<tr>
<td>Kentucky</td>
<td>0</td>
</tr>
<tr>
<td>Louisiana</td>
<td>1</td>
</tr>
<tr>
<td>Mississippi</td>
<td>0</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>1</td>
</tr>
<tr>
<td>South Carolina</td>
<td>1</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1</td>
</tr>
<tr>
<td>Texas</td>
<td>3</td>
</tr>
<tr>
<td>Virginia</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5</td>
</tr>
</tbody>
</table>


*Column headings refer to categories as used in Table 2.*

TABLE 2. RESEARCH PROJECTS IN LAND USE POLICY FOR UNITED STATES AND THE SOUTH, BY MAJOR THREAT OF 1976.

<table>
<thead>
<tr>
<th>Primary Threat Of Project</th>
<th>Number of Projects</th>
<th>Percentage of Total Southern Projects</th>
<th>Percentage of U.S. Projects</th>
<th>South</th>
<th>Non-South</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Taxation, Public Finance, Use Value</td>
<td>5 13</td>
<td>28</td>
<td>38</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>(2) Impacts of Alternative Policies on Land Use</td>
<td>2 10</td>
<td>12</td>
<td>20</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>(3) Land Values, Market Prices</td>
<td>3 5</td>
<td>18</td>
<td>60</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>(4) Theory, Conceptual Framework, Comprehensive Policy</td>
<td>3 18</td>
<td>18</td>
<td>17</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>(5) Ownership, Tenure</td>
<td>1 6</td>
<td>6</td>
<td>17</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>(6) Regional Development, Non-Agricultural Demands</td>
<td>3 8</td>
<td>18</td>
<td>37</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>(7) Techniques and Models for Comprehensive Planning</td>
<td>0 19</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>(8) Unclassified</td>
<td>0 4</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>17 83</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Where several states have contributing projects to a Regional project, each state project is listed as a separate project. The South has no regional projects in this area.

going on in agricultural economics departments. These results also do not reveal the level of scientific effort. The CRIS search in August 1976 resulted in 90 project listings. It was determined by the authors that most of these did not deal directly with land use policy and planning. A somewhat arbitrary ritzation of these projects is listed in Table 2. Judgments of what constituted the major thrust of the research project were based on information presented on the CRIS forms.

The Southern region had 17 active projects, or about 20 percent of total projects nationwide (Table 2). The largest number of the Southern projects (five) deal largely with land taxation and local government finance. These projects focus primarily on land values and markets. It is interesting that no projects in the region focus on what we call planning, models, and techniques, the largest single area of concentration nationwide.

Review of Land Use Extension

A national survey of extension specialists with primary responsibilities in land use was conducted in the summer of 1976 to ascertain the nature of the land use programs in various states and the characteristics of the individuals involved. Ninety-six usable responses were received, 24 from the South.

The information obtained in the survey has been summarized in five areas: approaches, topics, clientele, colleagues and publics. The role of extension specialists as expressed by them has been analyzed. Based on this information, a few general and evaluative comments relating to conclusions drawn in other sections of this paper are offered.

Approaches

There are, of course, as many approaches to land use education as there are specific land use problems across the U.S. However, four general approaches might encompass the majority of specific possibilities: 1) citizen involvement and group organization; 2) education; general awareness of land use policy and planning; 3) education: specific land use policy topics; and 4) applied research and analysis.

Table 3 summaries survey results on the utilization of these four basic approaches. In both the South and the rest of the U.S., the most often utilized approach is general awareness education - 72 percent of all respondents in the U.S. and 87 percent in the South listed this as first or second in importance. Citizen involvement and specific topics education appeared fairly important in both regions. For purposes of the survey, the public policy educational process was summarized in four stages: 1) citizen awareness (identification of problems, alternatives, and so forth); 2) data collection (social, economic, physical); 3) evaluation of alternatives and specific approaches; and 4) implementation of state and local plans and action programs.

Topics

Within the framework of general approaches, there was a diversity of specific topics on which the extension educators concentrated their efforts. Clearly the most popular specific topic throughout the U.S. was "impacts of land use policies." If, as concluded earlier, the research in land use has been inadequate - and most assuredly on the subject of specific land use policy and planning, then it is reasonable to expect that there would be a "gap" in the most popular topic area. If extension is doing a good job here, and we have every reason to suspect it is, then the information must be coming from somewhere other than the reported responses.

When asked, 'Why have you addressed the above topics?' almost one-half responded that is was "professional choice as the most relevant issue." A somewhat smaller fraction cited "clientele requests" as the reason.

Clientele

Response to questions about clientele served in land use programs also produced a surprising result: farmers ranked at or near the bottom for the entire U.S. Farmers ranked behind the general public, elected and appointed officials, citizen groups, agency personnel and extension professionals. In rural areas, where much of today's effort in land use is focused, farmers and other property owners will be most affected. It would appear that they would be a logical audience for educational awareness programs of all types, given the importance of property rights to them.

When asked "Why?" about clientele groups, overwhelming response was "requests from them." Professional choice ranked a distant second as a reason for working with the above groups.

Role of Extension and Extension Specialists

The survey also questioned the specialists' perceived role of the Extension Service in contrast to how they perceived their own role in land use education. Results showed that the perceived role of the Extension Service was heavily oriented toward education, developing awareness and providing information. However, the perceived role of the extension specialist in his land use program was more oriented toward analysis with the traditional role cited less often.
The review of extension land use publications showed that publications from states with strong land use policies are to an immediate pressing land use problem (16). These efforts do not appear to be followed by development of related sets of educational materials with several clientele groups and over a longer period of time.

Some Concluding Comments
This paper has not dealt with the issue of alternative market and non-market alternatives. It did, however, suggest that issues other than planning techniques were important research and extension issues.

Economic theory suggests reasons why markets in land may not automatically achieve socially efficient solutions. A good deal of resource economists' efforts during the last decade has been spent demonstrating the existence of and complications caused by externalities and public goods in land use decisions.

There is an unfortunate aspect of this increased recognition of market failure, and in many ways it appears likely to have fairly tragic effects. Public planners and interest groups have latched onto the economists' demonstration of market imperfections in the land use area and, have made a rather dangerous jump to the position which asserts need for and efficiency of non-market (political) institutions, as though recognizing that markets "fail" implies that alternatives to the market do not "fail." We know that conditions required for markets to function perfectly are rarely, if ever achieved; what is often forgotten is that conditions to assure that pricing is in any sense "optimal" may be even more demanding than competitive market requirements. In short, if we apply performance criteria to market and non-market land allocation institutions, we are likely to find that they both "fail" to insure a socially efficient solution. So, we may be left with the question of which is to be preferred. Such a question cannot be answered within the framework of positive economics. It does seem appropriate to say that "socially efficient" solutions to land allocation problems are not guaranteed by either market ap- proaches. It can be demonstrated that non-market decisions are at least as likely, and often more likely, to diverge from efficient solutions (16).

If policy makers are serious about developing a land policy that serves the public interest, the what, why, who, when and related questions must be answered as well as the "how to" question. Such information would be useful in clarifying goals and objectives and would preclude making a decision re- garding the approach to be taken before the impacts are fully evaluated. As Barlow states: "If more of us had the time to assist and evaluate our resources, problems and possible solutions - to answer the question of why - the policy formulation process would be greatly simplified" (2).

Yet, results of the surveys discussed in this paper are cause for concern that information required to respond to these more difficult questions is not now available in published form and further, may not be forthcoming in the near future. Clearly, the interest in and the need for this more analytical information by extension specialists and the public has been documented.

"This article is based heavily on "Land Planning and Policy in the South," written by Burt F. Long, Craig L. In- fanger, and Leon Danielson and published in the July 1977 issue of the Southern Journal of Agricultural Economics. ERS in conjunction with the Soil Conservation Service is undertaking a national resource inventory study which will collect ownership data as well as other information.

References
The effectiveness of rural development efforts hinges, to a great extent, on improving the quality of the housing environment in rural areas. Because of the need for improved housing in rural areas and for a factual basis for such improvement efforts, the Southern Rural Development Center formed a Functional Network on Housing in 1976 to inventory and review housing research literature relevant to rural development and to prepare an annotated bibliography of selected studies (1). A supplementary bibliography is currently being prepared.

In reviewing the research literature, housing was viewed not only as an individual unit but also as a part of the community in which it is located. The physical quality of housing is a component of livability, but so too are personal security, neighbors, and community facilities and services. Thus, concern for rural housing must go beyond its sheltering function to include the larger package of housing and community related resources that determine overall livability and quality of life.

A review of the research literature on housing in the United States during the 1970's disclosed a neglect of rural housing. Even so, many studies aimed especially toward the urban sector have results which may be applicable to rural situations. Housing research in this decade has focused on assessment of the housing situation, constraints to quality housing, residential energy consumption and conservation, lower cost building systems, and housing satisfactions and aspirations of low income families. A brief overview of the results of some recent studies in these major problem areas follows.

Rural Housing Situation

The 1976 Annual Housing Survey by the U.S. Bureau of Census revealed that the quality of housing in rural (non-metropolitan) areas of the United States has improved markedly since 1970 (2). There has been a "turnaround" between metro and non-metro areas with the decline in substandard housing being much more rapid in non-metro areas. Crowded housing conditions have also declined more rapidly in non-metro areas. Several factors have contributed to improvement of housing conditions: expanding rate of new housing construction, rise in household incomes, and activity of Federal, state and local government (3).

The non-metro South has a disproportionate share of poor housing with almost 60 percent of all inadequate non-metro housing located in this region. The poor, the aged, and blacks occupy a large proportion of poor housing lacking conveniences and often needing repairs. Not only is the housing situation of non-whites proportionately worse than that of whites, but it has improved less rapidly. Rental housing in rural areas is of poorer quality than owner-occupied (3).

Home ownership is found to be high among rural families. Although owners' occupancy has increased in both non-metro and metro areas, it is more prevalent in non-metro areas.

The single unit structure is the most popular type of housing, particularly in non-metro areas of the United States, where four of every five households lived in such a home in 1976. Studies show that the mobile home is increasing in importance as a type of housing unit in rural areas as multiple units become less popular. Mobile homes account for nearly 10 percent of all non-metro housing units, a significant increase since 1970 (2).

A recent study examined the level of occupancy by blacks in mobile homes in 12 states, 10 of which are Southern
states, and found that black households fail to occupy mobile homes in proportion to their presence in the general population. Based on population proportions, black households are represented in mobile homes to only 25 percent of what might be expected. Two possible explanations given for this underrepresentation were differences in housing preferences between blacks and whites and discrimination in the sale, financing and location of mobile homes.

Constraints
Why has the quality of rural housing been slow to improve? Studies have shown that the quality of rural housing has lagged behind both the nation's average and community constraints in rural areas, including the shortage of credit, wide-spread absence of building and housing codes, low levels of new construction, lack of water and sewer systems, difficulty in managing funding programs because of low population densities, and unfamiliarity of rural residents with putting forth paperwork and loan procedures. Other limitations found to exist in rural areas were lack of income, employment and occupational opportunities, lack of lending and other financial resource institutions, the unawareness of and the unavailability of government housing programs, and a general lack of skills in home building and home improvement.

What are some of the constraints rural low-to-moderate-income families have in achieving adequate housing? A Southern regional study of randomly selected households in low-income areas of Georgia, Texas and Virginia showed that low-income families lack the money and desire for improving their housing, but the missing elements for attaining their housing goals were mainly financial resources and the necessary knowledge for managing their limited financial and other family resources.

A Florida study identified some family characteristics which act as constraints to the attainment of quality housing or to the maintenance of a dwelling in good condition. These included single head of household, black race, less than a full-time employment, renter status, low income, low educational level, lack of belief in living in older person household, and low skill level.

Housing costs are soaring in the United States, and affordability of decent housing is beyond the reach of many Americans. All housing costs— including purchase price, rents, taxes, utilities, and maintenance—have increased dramatically during the 1970's and are continuing to rise. A National Task Force on Housing Costs recently reported that the cost of housing-building, buying, and operating a home—has increased faster during the 1970's than family income. While rents have not increased as fast as incomes or homeownership costs, they have risen twice as fast since 1972 as in the preceding decade. The high cost of housing is a major problem for the young couple of limited means buying a first home, the lower income family, the elderly on fixed incomes, and families with special housing needs. In 1975, housing costs equalled 35 percent of an older person's income on the average, while households under 65 spent only 23 percent of their incomes on housing.

Studies of home financing indicate that low income families clearly lack the ability to acquire financing, and many have difficulty in obtaining the full access to the institutions through which to make housing financing available to rural families. A recent study, testing of lending practices of savings and loan associations and commercial banks in Kentucky found that home financing continues to be less favorable in rural than in urban areas. The amount of loans is smaller, down payments are larger, repayment periods are shorter, and the ratio of purchase price to income is more conservative. Home loans offered by banks were more stringent than those offered by savings and loan associations. Few loans were made across county lines.

Even though home mortgage credit is less favorable in rural areas, considerable improvement has occurred during the 1970's. Both building and loan assumption and the Farmers Home Administration have increased their lending activity in rural areas. Farmers Home Administration has been the major source of Federal housing assistance to rural residents during the 1970's. Types of Farmers Home Administration loans have included home ownership loans, home improvement loans, rural rental housing loans, and farm labor housing loans and grants.

The major factors for the increase in Farmers Home Administration home loans activity during the 1970's have been its increased lending authority, the higher interest rates, and an extension of the geographical areas served.

Residential Energy Consumption and Conservation
Energy shortages in 1973 and subsequent rising costs have created a whole new problem area in housing. Even though energy consumption is lower in rural homes than in urban, rural households pay more per unit of energy consumed because of the structured utility rates. On the average, most rural households pay about 15 percent of their annual income for energy costs. Indeed, in some households, utility bills now equal or exceed monthly mortgage payments. These high utility costs have become particularly burdensome to rural low income households which are least able to afford them.

Residential energy accounts for about 22 percent of the total energy used in the United States, and space heating consumption is two-thirds of the residential budget. Recent research has shown that single-family detached homes require more energy for space heating and cooling than either single family attached, multifamily units or mobile homes.

Residential energy consumption in the United States is not growing as rapidly as commercial energy consumption. Some of the forces producing a projected slowdown in growth of residential energy use include increasing household size, slowdown in the rate of household formations, higher rates of construction in warmer areas of the United States and increased use of electric appliances. A recent national study indicates that households are using less energy because of increased energy prices. Reducing lighting and heating are the most frequently mentioned actions taken. A Midland study shows that the emerging pattern is for large families in the middle stage of the life cycle living in large houses to use more energy than other families. Yet these same families have reduced their energy consumption by the same amount as the poor, the elderly and small families in small homes.

Results from energy studies indicate that there is considerable potential for savings of natural resources and money through the adoption of various residential energy saving strategies. Some specific conclusions are:

1. Except in areas with mild climates or very cheap utility rates, it is economical to fully insulate new homes and to improve the insulation in older homes (8).

2. A 6-degree F setback of the thermostat can save 20 to 30 percent of energy previously used for heat (10).

3. Comparing the electric heat pump with electric resistance heat for homes with similar characteristics, the heat pump will save more energy in a colder climate than in a warmer climate (18).

4. Solar water heating seems to be a realistic alternative to the use of traditional water heaters in most areas of the country (17).

5. Energy consumption for lighting could be reduced up to 75 percent by converting from incandescent to fluorescent fixtures (18).

6. Storm windows reduce window infiltration by 50 percent and can result in a 22 percent savings in energy consumption (8).

7. An estimated 5 percent of cooling energy could be saved by using high performance air conditioners and a device to permit the occasional use of air blower (18).

The primary focus of many energy studies has been the development and utilization of solar energy to supplement other energy sources. Generally researchers have found solar energy expensive, varying by climate and construction and often not competitive with other fuels currently in use in residences. Most of the systems are adaptable to existing housing as well as new construction. Often more insulation than commonly used and double-pane windows are incorporated to utilize the solar energy systems to the maximum benefit.

Lower Cost Building Systems
A significant part of the Southern Region Housing Research Committee's activity involves the design and development of better engineered structures and building systems, particularly those that use wood-based materials and conserve energy.

Researchers at Clemson University and Virginia Polytechnic Institute and State University have developed innovative prototype houses for lower income families. The unique structural designs include simplified systems for cooling and heating and for reducing framing materials.

Researchers at Virginia Tech have developed and evaluated prototype houses that required less than one-half as much framing lumber as conventionally built homes. The savings in framing lumber and the money and time of using less lumber is significant. Several of these prototype houses have been built in Georgia, South Carolina, Virginia and West Virginia.

As a part of the southern regional activity the Rural Housing Research Unit at Clemson has been working on low-cost materials and innovative designs with special attention to energy conservation. These researchers have developed a solar reporter and dome systems for heating and cooling that will provide over 75 percent of the heating requirements of these solar attics built in Georgia and South Carolina (21). Experimental inground and underground houses have also been designed and built using the soil for insulation and heat storage. Pressure treated, red-poor wood prefabricated panels are being used in the construction of a prototype underground house.

Satisfactions and Aspirations
Are rural families satisfied with their present housing? Studies of housing satisfaction have indicated that a large proportion of rural families express general satisfaction with their housing. This finding may not be a true indication of satisfaction since many of these families may be resigned to existing conditions or feel that they are unable to improve their housing.

An Oklahoma study of rural families revealed that families in the latter stages of the family life cycle, having fewer persons per room, and living in newer homes of better quality were more satisfied with the living space and arrangement of their homes. Greater satisfaction with the structural quality and appearance of their homes was expressed by white homeowners and in more house space, lived in newer homes and lived in their homes for a longer period of time (22). A South Carolina study found housing satisfaction significantly related to tenure, type of structure, location of friends and satisfaction with neighbors. Housing satisfaction, neighborhood satisfaction and home satisfaction are interrelated and significantly related to one another (23).

Older rural people on the whole seem to be relatively well satisfied with both their neighborhood and homes. The most important predictors of community satisfaction of older adults related specifically to physical safety and satisfaction with the design and maintenance of their
Mobile homes are becoming increasingly important as housing units in rural areas. Studies show that mobile homes now make up nearly 10 percent of non-metro housing.


A CHANGING AGRICULTURE AND ITS IMPLICATIONS FOR RURAL DEVELOPMENT

Dr. James E. Martin
Vice President for Agriculture
University of Arkansas

Community development—or rural development—involves public decisions which are totally different from family decisions or firm decisions. Public decisions involve the inter-relationships among individuals, among organizations, and among communities. Development also involves both the level of incomes and the quality of life of rural areas.

Frequently, we tend to think that development always means growth. It may or may not mean growth in certain areas. But development, if it is to be a sustained improvement, does in fact involve the ability to continue to generate the quality of life that the community desires. There are numerous ghost towns in the West which didn’t develop and are no longer there today.

A viable community has to be able to continue to generate the quality of life desired by the inhabitants. Therefore, development involves the way in which all community resources are utilized by individuals and by firms for the public good. The development, or lack thereof, in many states certainly is closely related to agriculture.

Many people can recall 20 or 30 years ago when the farm was an entity which represented a way of life. The farm was very diverse. The farm family used its own labor; it produced most of its feed for its livestock; it had its own garden and its own laying flock. It produced practically everything necessary to sustain the operation.

As technology was introduced into agriculture following the second world war, massive and rapid changes began taking place. The agriculture production unit has been specialized into larger units. There has been a shift from manpower to horsepower in the form of machinery. Agricultural operations have become not a way of life, but a business and, in many cases, a larger business involving all of the business requirements that any other major corporation or business entity has to have.

In order to support this type of production unit, there has been a rapid development of a supply and service sector to serve farmers, as well as an increased use of capital for both the financing of production operations and the financing of additions to the size of the farm. New agricultural chemicals and all of the special requirements that are necessary in order to use these materials effectively and efficiently in agriculture have also been introduced.

As a result of this increased specialization, farm producers (the farm production units) are no longer as diversified as they were 20 years ago. They have become almost totally dependent upon the supply and service sector in agriculture to supply the necessary inputs for production on farms as we know them today.

Increases in prices occur, and as a result, additional developments in the processing, marketing, and distribution sector are now being sought. As the farm unit has become larger, the individual farmer is finding it more and more difficult to carry the risk of price changes while he is in the production process of his product. With this change, a growth in various forms of marketing, processing, and distribution organizations takes place. For example, numerous cooperatives have grown into major operations during the last 30 years. Also, specialized firms which are more nearly vertically integrated, such as in the poultry industry, have developed since the second world war. And more and more of this change is going to take place.

Many rural areas have benefited from this growth in agriculture. They have benefited from the increased incomes; they have benefited because technology has required the supply and service sectors to support agriculture and these new firms have located in rural areas to supply the inputs required by modern agriculture.

The agricultural marketing, processing, and distribution sectors have a tremendous future in terms of growth and development. Many rural areas still ship a tremendous percentage of their production out of the state for further processing. This provides other locations with jobs which might be attractive, and perhaps even more efficiently performed, nearer the source of production. Increasing the marketing and processing sector is something that involves public decisions. It involves input from agriculture, and it involves the type of public development thrust where decisions made today may not pay off for four, five or six years.

Agriculture has provided a tremendous contribution to the development of the rural states of this country, and there is tremendous opportunity left for additional development, particularly in processing, marketing, and distribution of agricultural products.

Other developments are also taking place in agriculture. There is a need to bring into the agricultural community and the industry of agriculture expertise which has not been relied upon to the extent in the past that it will probably be needed in the future. We are rapidly getting to a stage in which, even in production agriculture, no longer is an individual farmer decision regarding some cultural practice the best alternative for efficient production.

An example can be seen in some of the programs being conducted in the state of Arkansas with respect to integrated pest management. In some of these programs research and extension efforts have demonstrated that the amount of chemicals used in production agriculture can be reduced by 70 to 80 percent, thereby reducing the cost of application and the cost of the chemicals without loss in yields, provided action is taken on an area basis. We may be facing a situation in the future in which not only is the correct cultural practice necessary, the timing of the practice must also be optimal and, in addition, it must be applied on an area basis rather than on an individual basis.

There is also going to be increased need in agriculture for business management programs and educational programs. These programs will strengthen rural communities by adding that expertise in the community. One area of increased need in the future is for legal assistance in agriculture. Business legal work is not normally found in colleges of agriculture, but these disciplines must be brought into agriculture to assist not only the supply and service and the marketing, processing, and distribution sector, but also the production sector.

Another area requiring additional expertise involves government requirements and regulations with respect to taxes and government programs. I visited a company in California several years ago which reorganized on a periodic basis in order to, according to the manager, “farm the government just like they did their land.” They checked the legal requirements and found out that they could do different things with their organization to give them a more viable business operation by organizing according to the laws of the land at that time.

While agricultural development is important, there is a hazard in relying too heavily on agriculture as the sole basis for economic development. Modern communities have to provide other services in the rural areas and other types of businesses than just agriculture. Despite all of the advanced technology, agriculture is still heavily dependent upon weather. Farmers still pay the price for not being able to control the weather. Even if they could, price, demand and supply conditions will still vary, because of conditions in other countries. American farmers now are heavily dependent on weather conditions and crop yields world wide which impact on them. Thus, community leaders need to be looking at not only the contributions that agriculture has made and can continue to make.
to rural areas, but also at the types of firms, types of organizations, and types of services that can complement and strengthen this base so that rural areas do not rely solely on agriculture.

One of the major problems in rural communities is the loss of what could be called "leadership capital." It involves the young men and women who have the ability, the desire, and the drive to get additional education but who never return to the community. In any number of communities, the most valuable resource that the community has lost are some of the bright young people who left. There is no easy solution to the problem of keeping these types of people in the community so that they can make their contributions, but this is a most serious loss in many rural areas.

Some changes take place in this exit, however, as society moves from one which might be called a disposable society—one in which we have too much waste—to one in which people are becoming more conscious of the need for conservation. Perhaps this change, along with what appears to be an increasing desire by more and more people to live in rural areas and have a little space around them, will be helpful in keeping some of these young people in rural areas.

Agriculture is going to continue to change! In fact, it is going to change at an even more rapid rate in the future. There will continue to be increased costs in farming operations, and in all probability, the size of the farms which produce the major portion of America's food and fiber will continue to grow for some time in the future. Of course, the energy situation will impact on this change. But even if the energy situation does not cause change, there will be other causes and other directions to change.

The desire of farmers for quality community life will continue to be strong just as it is among city or urban community residents.

There are tremendous opportunities in agriculture. For example, the average starting salary of the last eight Ph.D.s in agricultural fields graduated from the Fayetteville Campus of the University of Arkansas this past year was $24,500. These salaries illustrate the fact that, in large part, industry is convinced that there are going to be changes in agriculture. They are convinced that it is going to be much more technical, that it is going to require additional assistance in order to improve the timing and use the optimal cultural practices, and that there will be continued increases in technology that will be utilized in the industry of agriculture.

Community development leaders need to take a greater interest in their communities and to become more involved in those public decisions that affect not only their own lives but their communities and the type of communities they want to live in five and 10 years from now and beyond. They need to develop an inventory of community resources—natural and human—because these resources are all inter-related. Then they need to decide what the community's priorities are and what their desires for the community are and become involved in the public discussion and public decisions in the setting of those priorities. For today's decisions will form the base that establishes the kind of community they will have in five and 10 years, and even in the year 2000.

This is not a "one-shot" process. Today's decisions will have to be modified. The resources in the communities will change, and communities need to be developing the expertise, the framework, and the basis upon which these public decisions can be made. If this is accomplished and additional interest is generated in communities for determining what their goals are, what their resources are, and what the alternatives to those goals are, rural communities will have taken another step towards the continued strengthening of their quality of life.

COUNTY'S HISTORY REVEALED THROUGH ART

Thanks to leaders in Clay County, Alabama, its citizens now have a unique set of paintings to remind them of their heritage. Entitled "Our Community—Past and Present," the 24 paintings show scenes of past and present significance in communities throughout the county. They were done by Clay County artist Mrs. Judith Hornsby Jordan, and presented to the people of the county by Arts and Crafts League president Mrs. W. G. Campbell. Judge Charles William Carpenter accepted the paintings on behalf of the county. The paintings were shown by the artist in the newly remodeled courthouse, where they will remain on permanent display for all citizens and visitors to enjoy for years to come.

How was this project developed and brought to completion? The idea originated with the Clay County Arts and Crafts League, which itself was formed several years ago through the work of the Clay County Resource Development Committee. William E. Wilson, Extension specialist in community development, and Mrs. Dora-Grace F. Smith, county agent for home economics, helped the League locate funds and develop the project proposal. In 1977, the League applied for and received a Comprehensive Employment Training Act (CETA) grant to obtain an artist to do 20 or more paintings of historical scenes, buildings and activities throughout the county. Mrs. Becky DeVore, a board member, served as volunteer project director. After the grant was approved, the Alabama Employment Office announced the job opening. Mrs. Jordan applied and the League's board of directors recommended that she be hired. She did research and worked on the paintings over a 10-month period. When they were completed, the Clay County Commissioners' Court provided funds for framing the paint-
Many of the nation’s railroads have gone bankrupt in the past few years, and numerous branchlines have been abandoned to cut costs, leaving farmers without dependable transportation to get their products to market.

USDA BACKS RURAL TRANSPORTATION STUDIES

Joseph R. Corley
SEA Extension
USDA

Without dependable transportation, farmers may not get their products to market, and consumers may not always find a broad variety of foods at their supermarkets. Transportation facilities are becoming more important as agricultural production and consumer demands increase. Adequate transportation is not always available. Several railroads are bankrupt; others are financially marginal, and many branchlines may be abandoned. State transportation agencies are now preparing transportation plans that will lay the groundwork for state transportation systems for years to come.

To encourage planning by the state agencies that will adequately encompass agricultural and rural area needs, several agencies in USDA, including SEA-Extension, support demonstration projects to develop methodologies to assist state rail planners to build into their rail systems adequate plans to meet future needs of agriculture and rural communities. A SEA-Extension request for proposals was sent to states last July with a mid-October deadline. Currently, these proposals are being reviewed and those selected will be funded in the near future to address this need.

These projects are supported by five USDA agencies including the Agricultural Marketing Service, the Farmers Home Administration, the Agricultural Stabilization and Conservation Service, and the Science and Education Administration. The project proposals are being developed and submitted by State Cooperative Extension Services.

*Reprinted from Agriculture and Natural Resources Newsletter, October 1978, p. 7.

RESEARCH NOTES

FEDERAL GRANT MANAGEMENT CAN BENEFIT SMALL COMMUNITIES

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Administrators of small cities and counties wear many hats. Perhaps this feature alone accounts for their consistency in receiving fewer Federal grants than do larger communities. This paper investigates the problem of Federal grants administration in small cities and counties. Suggestions for managerial improvements are offered to administrators who rely on Federal grants as a source of revenue.

An assessment of the Intergovernmental Grant System has been conducted by the Advisory Commission on Intergovernmental Relations covering the five-year span of fiscal year 1969 through 1974. The bulk of these findings by ACIR comprised the primary source of information for this paper. The ACIR assessment found that the smaller the city or the county, the less chance that the jurisdiction would be receiving Federal grants.

Along those same lines, the smaller cities or counties were found to have fewer separate Federal grants than the larger jurisdictions.

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Why are the small and often rural communities so low on the totem pole of Federal grants? The ACIR did not conclude that smaller communities were occupied with some problems which were different and unique from the larger local governments. Perhaps this stems from the observation that the rural management problems of small cities and counties were not singled out for any special study. In fact, a summary of ACIR comments on the unique problems of small communities regarding grant administration must be carefully qualified. None of ACIR findings in 14 publications covering a recent two-year span involve a survey in the frequently quoted ACIR-ICA questionnaire on Federal grants to local city and county officials. Perhaps more than 10,000, nor counties under 50,000 were surveyed. This means that two years of study almost completely neglected the impact of Federal grants on more than 26 million people in more than 16,500 cities, more than 41 million people in more than 2,400 counties, and more than 20 million people in more than 16,000 townships.

![Table data](table-url)
Briefly, the five problems of Federal grants of special interest to small, rural communities are summarized as follows:

1. All Federal grants are not cumulative. In that some additional local expense is required.
2. Small, rural communities need Federal grants as a substitute to supplant local funding, not supplement community's own new programs.
3. Management attention of small communities should be directed to the enthancement of categorical grants.
4. The smaller the jurisdiction, the greater the emphasis that should be put on the local level.
5. The overhead costs associated with Federal grants can not be reduced by the small, rural communities.

The management of small communities can deal with these problems more effectively in a variety of ways. Taking each problem separately, the following activities should begin:

Although all grants stimulate additional expenditures, some are more than others. As new grants are considered, priority should be given to those which are the most stimulative in nature. The most stimulative are the grants that are required local matching of hard cash dollars. The least stimulative are the direct grants which do not require any local matching and have few strings attached. The easiest grants and perhaps the best known of all are the general revenue sharing funds.

Include in this group are the categorical, categorical sharing grants. Almost as popular are the CETA grants of Title II and Title VI. The local costs associated with these Federal grants are limited to the overhead expenses which are incurred. Community consideration of these funds will result in the serious erosion of local revenues at a later date. For example, CETA funds are often a source of income for an increase in the wages or number of positions of the traditional jobs in rural communities. It may be quite difficult to reduce the size of the police force or for any other vital service component of local government once expanded.

Local groups who accept easy funding of these non-stimulative grants should be encouraged to adopt policies which will not politically commit them to continued financing with local money at a later date. This can be done by using the funds for non-recurring purposes such as capital improvement or wages for jobs with low public visibility such as unskilled laborer assignments.

Admittedly, this file in the face of those communities which need Federal grants to supplement their revenue sources. However, other methods are available to accommodate this need. For example, the present local matching of cash dollars required by stimulative type grants can be reduced and thereby free dollars which are contributed to local costs. The best example, perhaps, is the Federal grant program for community recreation. The Bureau of Outdoor Recreation required at least 50% of the cost of the project. The usefulness of going through the red tape to get paid for overhead costs may be questionable; however, San Diego County, a large, well-staffed community, successfully sought payment for its overhead costs. Total costs of $5,5 million in 1974. While this sum is substantial, it represents only 1.3 percent of the city's $340 million budget.

Grant proceeds, and as recently as June of this year, the use of General Revenue Sharing funds.

The "in-kind" local match can be increased dramatically in a number of ways. Normally, a community submits its cost of direct revenues to the project as a source of "in-kind" contribution. These services are the value attached to the cost of labor and equipment for the grubbing and clearing of the new land to be used for recreation. Often, the community can do this work with its own equipment. These are usually called "force account" services. In other cases, Federal grants allow "in-kind" match from services of third parties who may volunteer to supply equipment and operators. Small cities can help from the county board. Small counties may be able to secure similar assistance from a large central city. Private enterprise will often contribute equipment on weekends. The local branches of Georgia Power and Southern Bell Telephone have supplied men and equipment to dig trenches, lay wire, and set poles on numerous recreation projects at no cost to the community. The U.S. Army at Fort Benning provides community service outreach programs involving the construction of sanitary landfill sites for small communities in Georgia and Alabama.

Vocational technical schools frequently offer support for "in-kind" services, all of which can be used to reduce the matching share in dollars. For example, restroom buildings, recreation tables, park benches, and parking lot curb stops can be poured by students in the construction classes of these schools. The welding class can fabricate steel barbecue grills and frames for portable bleachers. The value of these services can be translated into a part of the cost of the community on the project. In some instances, local industry supplies materials to these schools which can be used on the job. The value of these materials enhances the "in-kind" contribution all the more.

Beyond these ways of dealing with the problem of stimulative effect on local spending and the need to find other ways to use grants as a substitute for existing expenditures, the categorical grants are an excellent means of improving the revenues of small rural cities and counties.

One way to do this, of course, is to develop an organization resulting in more frequent applications. This is perhaps easier said than done. The small community must depend on outside help from regional planning and development agencies, universities, state departments of community affairs, and grant officers of state and Federal agencies. However, the majority of categorical grants to local communities go to agencies other than the general government of the city or the county. The typical categorical grants are for educational, health, and general government can go to these local recipients of categorical grants proceeds for assistance. In this example, the local
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FOOTNOTES

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2Ibid., pp. 7-8.
3Ibid., p. 3.
4Statistical Abstract of the United States 1975, Table No. 436, p. 259.
6Ibid., p. 41.
7Ibid., p. 42.
8Ibid., p. 49.
9ACIR, A-53, pp. 121-123.
10ACIR, A-54, p. 47.
11This information supplied by Tom Brown, Grants Administration Officer, Regional Office, U.S. Bureau of Outdoor Recreation, Atlanta, October 1978.
14Experiences of the Floyd County, Georgia, road construction superintendent and the paving foreman, 1971.
16A-52, p. 233.
An ever increasing amount of secondary socio-economic data has been and is being generated by public and private information sources. The sheer magnitude and abundance of this data generated, commonly referred to as the information explosion, has strained the capacity of storage methods such as traditional libraries. Three basic difficulties arise from this abundance of information from the standpoint of the typical user such as those individuals and groups who participate in rural development activities. The difficulty in learning that needed information exists, (2) difficulty in determining the location of data once the data are known to exist, and (3) difficulty in collecting or assembling the information once it is located.

One option to alleviate these problems is the use of a centralized computer storage, retrieval, and dissemination system. One example of this is the system proposed for the state of Kentucky. However, this option too is subject to tests of efficiency and costs. Costs in this context may be thought of as "accounting costs" instead of "out-pocket costs." With this notion of "accounting costs," it is assumed that no such retrieval system or portions of that system are presently available to the "owner" at zero costs. Alternately, if some portion of the system is currently available, this portion is costly in terms of replacement cost.

What are the costs of a centralized computer storage system that would be large enough to serve the needs of a geographic area such as a state? A 1975 study at the University of Tennessee constructed costs using three sizes of each of two computer models that were being used for retrieval systems. These costs included equipment for the computer and office personnel, building and land, labor, and programming costs. Constructing these costs for each alternative computer size using a budgeting technique yielded an average annual cost over the expected technological usefulness for the computer of five years of $884,000 (assuming leasing of computer hardware) and $924,000 (assuming purchase of the computer hardware). Other durable and semidurable inputs were costing using the usual assumptions concerning useful life of the input. These costs represent the annual costs of equipment, materials, facilities, and personnel at the central location but do not include costs for each terminal user.

Government Accounting Office (GAO) surveys support the conclusion that where the acquisition of computers was not coordinated, individual agencies and groups tend to acquire computers which they cannot put to full use, thus making the total cost to users higher than necessary. When computer acquisition is coordinated and terminals used to connect many groups, not only does the cost per unit decrease but the most expensive single element of a computer, the central processing unit (CPU), is better utilized.

Thus a centralized social and economic data information base in a state such as Tennessee possibly has two basic benefits to the direct users of the system: (1) the reduction in costs of computer equipment relative to the number of users served, and (2) the reduction in the duplication of data gathering and processing functions. Economic development research and extension that utilizes analytical and predictive techniques which require timely data input could be made more effective and useful because of ready access to data. Also, the information center could provide secondary data to users who need information for other approaches; for example, chambers of commerce, economic development districts, county planning commissions, and others needing to know about population, incomes, and jobs for promotional advertising, policymaking or similar activities.

Obviously, a centralized social and economic data information center has potential benefits to owners, users, and others. A centralized system would not insure that users would make better decisions, and information content and use would be dependent upon the decision capability of the user. A centralized data information system probably could aid policymakers, agencies, groups, and individuals in more efficient, timely collection, storage, retrieval, and dissemination of data than is presently possible in most cases.