

## RURAL DEVELOPMENT RESEARCH PROGRAMS OF SOUTHERN 1862 AND 1890 LAND GRANT INSTITUTIONS: CHARACTERISTICS, NEEDS, AND PRIORITIES FOR THE 1970'S\*

Carlton G. Davis

### INTRODUCTION

Acceptance and increased interest in rural development as a legitimate concern of land grant institutions is well documented. Although rural development research is not "new" for the discipline of agricultural economics, there is little doubt that the area has experienced renewed and greatly expanded interest at both the national and regional levels by the passage of the 1972 Rural Development Act [3, 4, 5, 8].

While much has been written on the importance and need for a direct frontal attack on this traditionally underfunded and low priority research area, the sad fact is that the profession is still without a clear sense of direction regarding research and extension needs and priorities [6]. The establishment of state and regional rural development centers is a positive step toward directing and coordinating the limited resources available in this area. Many southern states have demonstrated significant leadership roles in this first step, obviously recognizing the massive rural development problems of the region.

What has been lacking until fairly recently, however, is evidence of concerted action to: (a) identify the aggregate level and characteristics of regional rural development research activities, (b) specify research areas in which state or intrastate and interstate division of labor or cooperation between 1862 and 1890 institutions might have the greatest payoffs, and (c) implement plans for coordinated regional research activities designed to solve short-term and long-term rural development problems

of 1862 and 1890 institutions' clientele.<sup>1</sup>

### PURPOSE

This paper implicitly assumes that the long-term success of southern regional rural development research activities will depend not only on the magnitude of regional "inertia" in the form of resource availability and use, but upon identification of: (a) existing levels of resource use and concentration, (b) resource combination and complementarity and, (c) institutional factors that might impose major constraints on an integrated regional program. From this point of view the paper seeks to:

1. Identify the levels of support and disciplinary distribution of current southern regional rural development research activities,
2. Identify any apparent differentials in selected characteristics of 1862 and 1890 institutions' rural development research activities,
3. Identify short-term and long-term research needs of specific research clientele and examine the policy implications of continuation of the existing research structure for regional development, and
4. Suggest a general approach to regional rural development research organizations and coordination as a means of maximizing state and regional rural welfare.

Carlton G. Davis is assistant professor of food and resource economics at the University of Florida.

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<sup>1</sup>The Southern Regional Rural Development Center located at Mississippi State University came into being on Feb. 1, 1974. An ambitious program is now in the planning stages under the leadership of the center director, W. W. Linder, and his associate, W. C. Boykin, to develop an integrated research and extension program for the region's 1862 and 1890 land grant institutions.

## APPROACH

The study draws heavily on the conceptual framework developed by the Southern Regional Rural Development Research Council in its inventory of regional rural research programs at 1862 southern land grant institutions [4]. The council's activities were undertaken as a first step toward meeting its objective to "....coordinate all aspects of research on rural development for the Southern region" [4, p. 1]. Within this overall long-term objective, the council undertook: (a) an identification of the essential components of a comprehensive rural development research program and (b) a review of rural development research programs of 1862 land grant institutions in the South.<sup>2</sup>

The three major objectives of existing rural development research were identified as: (a) improving the level of rural community services, (b) improving the quality of human resources in rural areas, and (c) improving opportunity for income and employment in rural areas.<sup>3</sup>

Since the council's inventory did not include on-going programs of southern and border states' 1890 land grant institutions,<sup>4</sup> a review and inventory of these institutions' rural development projects were undertaken using the Cooperative State Research Service CRIS Research Projects Abstracts [4, 7]. All efforts were made to conform as closely as possible to the council's classification criteria.

### Rural Development Research Characteristics of 1862 and 1890 Land Grant Institutions

The council's data on research activities of the 1862 institutions for 1973 are summarized in Table 1 by research objectives and academic disciplines. A summary of on-going research of 1890 institutions is presented in Table 2 for the same period.<sup>5</sup>

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<sup>2</sup>The Southern Regional Rural Development Research Council is currently chaired by Fred H. Tyner of Mississippi State University. For a review of some of the conditions leading up to the creation of the council, see Tyner [6].

<sup>3</sup>A fourth objective suggested by USDA, "improving the quality of rural environment," was not included since it was considered to be a subset of the other three major research objectives.

<sup>4</sup>Projects were selected according to the following criteria: 1. Projects classified as RD-1 by CSRS. 2. Projects which fit under the Title V of the 1972 Rural Development Act. 3. Projects which the council felt should be included in only one cell of the matrix.

<sup>5</sup>State distribution of research projects for the 1862 and the 1890 institutions are given in Appendix Tables 1 and 2, respectively.

<sup>6</sup>Data for Scientific Man Years (SMY) were not available for research projects of the 1890 land grant institutions. The Southern Regional Rural Development Center has in the planning stage a project to identify the level of SMY's allocated to rural development research at 1890 institutions.

The relative distribution of research activities by academic disciplines is shown in Table 3 for the two groups of institutions in terms of projects and Scientific Man Years (SMY).<sup>6</sup>

Several key characteristics of regional rural development research activities stand out immediately. First, it is quite obvious that a relatively insignificant proportion of total regional resources is currently being allocated to rural development research. A grand total of only 202 research projects was identified as relating specifically to a wide spectrum of rural development problems. Second, there appear to be significant imbalances in research activities between: (a) the three broadly defined research objectives of community services, human resources, and income and employment; (b) the academic disciplines, and (c) the programs of 1862 and 1890 institutions.

With respect to resource allocation, Table 1 shows that only 139 rural development research projects representing 71.4 Scientific Man Years were allocated to rural development research along the 1862 institutions for fiscal year 1973. A total of 63 projects was identified for the 1890 institutions for the same period. Although the number of Scientific Man Years allocated to the 63 projects of the 1890 institutions could not be determined, it is reasonable to assume that their research manpower allocation in no way exceeds that of the 1862 institutions. The limited resource base and high service and instructional component of their activities would suggest an even lower level of manpower allocation.

### Community Service Research

A review of the data presented in Table 3 indicates some interesting characteristics of the relative disciplinary concentration of community services research activities of 1862 and 1890 institutions. Almost 27 percent of the total number of rural development projects and SMY's of 1862 institutions was allocated to this research area. In contrast, less than 5 percent of 1890 institutions' projects was allocated to such concerns. Of equal

**Table 1. SUMMARY INVENTORY OF SOUTHERN AGRICULTURAL EXPERIMENT STATIONS RURAL DEVELOPMENT RESEARCH PROJECTS BY SOUTHERN REGIONAL RURAL DEVELOPMENT RESEARCH COUNCIL, 1973<sup>a</sup>**

| Research Objective                                 | Academic Discipline |                   |                  |                    |            |      |           |      | Total All Disciplines |       |
|--|---------------------|-------------------|------------------|--------------------|------------|------|-----------|------|-----------------------|-------|
|  | Ag. Econ.           |                   | Rural Sociology  |                    | Home Econ. |      | Other     |      | No. Proj.             | SMY   |
| A. Improvement of Community Services               | No. Proj.           | SMY <sup>b/</sup> | No. Proj.        | SMY                | No. Proj.  | SMY  | No. Proj. | SMY  | No. Proj.             | SMY   |
| 1. Health  | 4                   | 1.7               | -                | -                  | -          | -    | -         | -    | 4                     | 1.7   |
| 2. Educ. & Training                                | 2                   | 0.7               | -                | -                  | -          | -    | -         | -    | 2                     | 0.7   |
| 3. Water System                                    | 2                   | 1.1               | -                | -                  | -          | -    | 1         | 0.2  | 3                     | 1.3   |
| 4. Waste Disposal                                  | 3                   | 0.85              | -                | -                  | -          | -    | -         | -    | 3                     | 0.85  |
| 5. Recreation                                      | 3                   | 0.7               | -                | -                  | -          | -    | -         | -    | 3                     | 0.7   |
| 6. Law Enforcement                                 | -                   | -                 | -                | -                  | -          | -    | -         | -    | -                     | -     |
| 7. Fire Protection                                 | -                   | -                 | -                | -                  | -          | -    | -         | -    | -                     | -     |
| 8. Trans. & Comm.                                  | -                   | -                 | -                | -                  | -          | -    | -         | -    | -                     | -     |
| 9. Gen. Comm. Service                              | 9                   | 4.20              | 4                | 1.6                | -          | -    | -         | -    | 13                    | 5.80  |
| 10. Planning                                       | 2                   | 2.25              | -                | -                  | -          | -    | -         | -    | 2                     | 2.25  |
| 11. Housing & Furnish.                             | 2                   | 1.1               | -                | -                  | 1          | 1.1  | 2         | 2.6  | 5                     | 4.8   |
| 12. Legal Inst. Services                           | 1                   | 0.1               | -                | -                  | -          | -    | -         | -    | 1                     | 0.1   |
| 13. Financial Services                             | 1                   | 0.9               | -                | -                  | -          | -    | -         | -    | 1                     | 0.9   |
| <u>Sub Total</u>                                   | 29                  | 13.60             | 4                | 1.6                | 1          | 1.1  | 3         | 2.8  | 37                    | 19.10 |
| B. Human Resources                                 |                     |                   |                  |                    |            |      |           |      |                       |       |
| 1. Human Development                               | 6                   | 3.28              | 9 <sup>c/</sup>  | 4.79 <sup>c/</sup> | 2          | 1.4  | -         | -    | 17                    | 9.47  |
| 2. Welfare   | 1                   | 1.1               | 1                | 0.2                | -          | -    | -         | -    | 2                     | 1.3   |
| 3. Health & Nutrition                              | -                   | -                 | -                | -                  | 3          | 1.21 | -         | -    | 3                     | 1.21  |
| 4. Demography                                      | 1                   | 0.2               | 8                | 3.18               | -          | -    | -         | -    | 9                     | 3.38  |
| 5. Ed. Program Effectiveness                       | 2                   | 0.2               | 3                | 2.5                | 1          | 1.4  | 1         | 0.25 | 7                     | 4.35  |
| 6. Household Decisions & Management                | -                   | -                 | -                | -                  | 2          | 1.56 | 1         | 0.9  | 3                     | 2.46  |
| 7. Comm. Decision Making                           | -                   | -                 | 1                | 0.25               | -          | -    | -         | -    | 1                     | 0.25  |
| 8. Level of Living and Quality of Life             | 1                   | 0.33              | 15 <sup>d/</sup> | 7.31 <sup>d/</sup> | 1          | 0.9  | -         | -    | 17                    | 8.54  |
| 9. Public Policy                                   | 1                   | 0.5               | 1                | -                  | -          | -    | -         | -    | 2                     | 0.5   |
| <u>Sub Total</u>                                   | 12                  | 5.61              | 38               | 18.23              | 9          | 6.47 | 2         | 1.15 | 61                    | 31.46 |
| C. Income and Employment                           |                     |                   |                  |                    |            |      |           |      |                       |       |
| 1. Holding & Attracting Industry                   | 2                   | 0.7               | -                | -                  | -          | -    | -         | -    | 2                     | 0.7   |
| 2. Plant Location                                  | -                   | -                 | -                | -                  | -          | -    | -         | -    | -                     | -     |
| 3. Inc. & Empl. Effects of Rural Industry          | 2                   | 0.75              | -                | -                  | -          | -    | -         | -    | 2                     | 0.75  |
| 4. Inc. & Empl. Effects of Natural Res. Invest.    | 8                   | 2.6               | -                | -                  | -          | -    | -         | -    | 8                     | 2.6   |
| 5. Alt. Uses of Natural Resource                   | 1                   | 1.3               | 1                | 0.32               | -          | -    | -         | -    | 2                     | 1.62  |
| 6. Rural Recreation Enterprises                    | 2                   | 0.8               | -                | -                  | -          | -    | -         | -    | 2                     | 0.8   |
| 7. Technology for Small Farms                      | 3                   | 3.3               | -                | -                  | -          | -    | 1         | 0.8  | 4                     | 4.1   |
| 8. Enterprises for Small & Part-time Farms         | 3                   | 0.76              | 1                | 0.5                | -          | -    | 1         | 0.1  | 5                     | 1.36  |
| 9. Economic Interactions in Rural Areas            | 13                  | 8.26              | -                | -                  | -          | -    | -         | -    | 13                    | 8.26  |
| 10. Inc. & Empl. Effects of Taxation & Regulations | 3                   | 0.65              | -                | -                  | -          | -    | -         | -    | 3                     | 0.65  |
| <u>Sub Total</u>                                   | 37                  | 19.12             | 2                | 0.82               | -          | -    | 2         | 0.9  | 41                    | 20.84 |
| <u>Grand Total</u>                                 | 78                  | 38.33             | 44               | 20.65              | 10         | 7.57 | 7         | 4.85 | 139                   | 71.4  |

Source: Southern Regional Rural Development Research Council, *First Report of the Southern Regional Rural Development Research Council to the Southern Experiment Station Directors*, July 20, 1973.

<sup>a</sup>Research project inventory is for Southern 1862 land grant institutions (with the exception of Florida.

<sup>b</sup>SMY - Scientific Man Years (FY1973).

<sup>c</sup>Three projects are state projects with 1.59 SMY, while six projects are regional projects with 3.20 SMY (Regional S-81).

<sup>d</sup>Six projects are state projects with 2.38 SMY, while nine projects are regional projects with 4.95 SMY.

**Table 2. SUMMARY INVENTORY SOUTHERN AND BORDER STATES 1890 LAND GRANT INSTITUTIONS RURAL DEVELOPMENT RESEARCH PROJECTS, ACCORDING TO SOUTHERN REGIONAL RURAL DEVELOPMENT RESEARCH COUNCIL CLASSIFICATION, AND CRIS PROJECT ABSTRACTS, 1973<sup>a</sup>**

| Research Objective                                 | Academic Discipline |                   |                 |                  |            |     |           |     | Total All Disciplines |     |
|--|---------------------|-------------------|-----------------|------------------|------------|-----|-----------|-----|-----------------------|-----|
|  | Ag. Econ.           |                   | Rural Sociology |                  | Home Econ. |     | Other     |     |                       |     |
|  | No. Projects        | SMY <sup>b/</sup> | No. Projects    | SMY              | No. Proj.  | SMY | No. Proj. | SMY | No. Proj.             | SMY |
| <b>A. Improvement of Community Services</b>        |                     |                   |                 |                  |            |     |           |     |                       |     |
| 1. Health  | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 2. Educ. & Training                                | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 3. Water System                                    | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 4. Waste Disposal                                  | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 5. Recreation                                      | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 6. Law Enforcement                                 | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 7. Fire Protection                                 | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 8. Trans. & Comm.                                  | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 9. Gen. Comm. Service                              | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 10. Planning                                       | -                   | -                 | 1               | NA <sup>c/</sup> | -          | -   | -         | -   | 1                     | NA  |
| 11. Housing & Furnish.                             | -                   | -                 | 1               | NA               | -          | -   | 1         | NA  | 2                     | NA  |
| 12. Legal Inst. Services                           | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 13. Financial Services                             | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| <u>Sub Total</u>                                   | -                   | -                 | 2               | NA               | -          | -   | 1         | NA  | 3                     | NA  |
| <b>B. Human Resources</b>                          |                     |                   |                 |                  |            |     |           |     |                       |     |
| 1. Human Development                               | 2                   | NA                | 1               | NA               | 2          | NA  | 3         | NA  | 8                     | NA  |
| 2. Welfare   | 2                   | NA                | -               | -                | 1          | NA  | -         | -   | 3                     | NA  |
| 3. Health & Nutrition                              | 1                   | NA                | 2               | NA               | 10         | NA  | 4         | NA  | 17                    | NA  |
| 4. Demography                                      | -                   | -                 | 2               | NA               | -          | -   | 3         | NA  | 5                     | NA  |
| 5. Ed. Program Effectiveness                       | 1                   | NA                | 1               | 2.3              | -          | -   | 5         | NA  | 7                     | NA  |
| 6. Household Decisions & Management                | -                   | -                 | 1               | NA               | 1          | NA  | -         | -   | 2                     | NA  |
| 7. Comm. Decision Making                           | -                   | -                 | 3               | NA               | -          | -   | -         | -   | 3                     | NA  |
| 8. Level of Living and Quality of Life             | 4                   | NA                | 2               | NA               | -          | -   | 1         | NA  | 7                     | NA  |
| 9. Public Policy                                   | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| <u>Sub Total</u>                                   | 10                  | NA                | 12              | NA               | 14         | NA  | 16        | NA  | 52                    | NA  |
| <b>C. Income and Employment</b>                    |                     |                   |                 |                  |            |     |           |     |                       |     |
| 1. Holding & Attracting Industry                   | 1                   | NA                | -               | -                | -          | -   | -         | -   | 1                     | NA  |
| 2. Plant Location                                  | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 3. Inc. & Empl. Effects of Rural Industry          | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 4. Inc. & Empl. Effects of Natural Res. Invest.    | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 5. Alt. Uses of Natural Resource                   | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 6. Rural Recreation Enterprises                    | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| 7. Technology for Small Farms                      | 3                   | NA                | -               | -                | -          | -   | -         | -   | 3                     | NA  |
| 8. Enterprises for Small & Part-time Farms         | 2                   | NA                | -               | -                | -          | -   | 1         | NA  | 3                     | NA  |
| 9. Economic Interactions in Rural Areas            | 1                   | NA                | -               | -                | -          | -   | -         | -   | 1                     | NA  |
| 10. Inc. & Empl. Effects of Taxation & Regulations | -                   | -                 | -               | -                | -          | -   | -         | -   | -                     | -   |
| <u>Sub Total</u>                                   | 7                   | NA                | -               | -                | -          | -   | 1         | NA  | 8                     | NA  |
| <u>Grand Total</u>                                 | 17                  | NA                | 14              | NA               | 14         | NA  | 18        | NA  | 63                    | NA  |

Source: (1) Southern Regional Rural Development Research Council. *First Report of the Southern Regional Rural Development Research Council to the Southern Experiment Station Directors, July 20, 1973.*  
 (2) U.S. Dept. of Agriculture, Cooperative State Research Service. *Research Work Unit/Project Abstract* (CRIS No. 326100, Sept. 28, 1973).

<sup>a</sup>Research objective classification is that used by the council while projects were obtained from the CRIS data bank and reclassified by academic disciplines and areas according to (a) objectives and (b) methodology.

<sup>b</sup>SMY - Scientific Man Years (FY1973).

<sup>c</sup>NO - Not available.

**Table 3. AREA CONCENTRATION OF RURAL DEVELOPMENT RESEARCH ACTIVITIES OF 1862 AND 1890 SOUTHERN LAND GRANT INSTITUTIONS, 1973**

| RESEARCH OBJECTIVE                | 1862 INSTITUTIONS            |                         |                                   | 1890 INSTITUTIONS            |                         |                                   |
|-----------------------------------|------------------------------|-------------------------|-----------------------------------|------------------------------|-------------------------|-----------------------------------|
|                                   | Proportion of Total Projects | Disciplinary Discipline | Distribution Percent <sup>a</sup> | Proportion of Total Projects | Disciplinary Discipline | Distribution Percent <sup>b</sup> |
| Improvement of Community Services | 26.6<br>(26.8)               | Agri. Econ.             | 78.4<br>(71.2)                    | 4.8                          | Agri. Econ.             | -                                 |
|                                   |                              | Rural Socio.            | 10.8<br>( 8.4)                    |                              | Rural Socio.            | 66.7                              |
|                                   |                              | Home Econ.              | 2.7<br>( 5.8)                     |                              | Home Econ.              | -                                 |
|                                   |                              | Others:                 | 8.1<br>(14.7)                     |                              | Others:                 | 33.3                              |
| Human Resources                   | 43.9<br>(44.1)               | Agri. Econ.             | 19.7<br>(17.8)                    | 82.5                         | Agri. Econ.             | 19.2                              |
|                                   |                              | Rural Socio.            | 62.3<br>(57.9)                    |                              | Rural Socio.            | 23.1                              |
|                                   |                              | Home Econ.              | 14.8<br>(20.6)                    |                              | Home Econ.              | 26.9                              |
|                                   |                              | Others:                 | 3.3<br>( 3.7)                     |                              | Others:                 | 30.8                              |
| Income and Employment             | 29.5<br>(29.2)               | Agri. Econ.             | 90.2<br>(91.7)                    | 12.7                         | Agri. Econ.             | 87.5                              |
|                                   |                              | Rural Socio.            | 4.9<br>( 3.9)                     |                              | Rural Socio.            | -                                 |
|                                   |                              | Home Econ.              | -                                 |                              | Home Econ.              | -                                 |
|                                   |                              | Others:                 | 4.9<br>( 4.3)                     |                              | Others:                 | 12.5                              |

<sup>a</sup>Figures not in parentheses represent research projects, while figures in parentheses represent Scientific Man years (SMY).

<sup>b</sup>SMY's not available for this group.

interest is the relative distribution of disciplinary research activities between the two groups. Agricultural economics research accounted for 78 percent of total research projects and 71 percent of total SMY's in this area of 1862 institutions. In contrast, agricultural economics research relating to community services is virtually non-existent in the 1890 schools. Rural sociological research accounted for almost 70 percent of the research projects of the 1890 institutions, compared to 11 percent at 1862 institutions. The relatively large proportion of "other" disciplinary projects (33 percent) among 1890 institutions might suggest, among other things: (a) the absence of high level economic research capability in this area, and (b) a natural gravitation toward the more production-oriented disciplines, as a result of existing research competence and/or technical information service orientation.

Sub-area research characteristics of the two groups of institutions can be identified by reviewing this research area within the context of the area sub-objectives given in Tables 1 and 2. From this perspective, it appears that agricultural economics

research at 1862 institutions is highly concentrated in the area of "general community services." This sub-area accounted for 31 percent of the area agricultural economics research projects and SMY's. Token emphasis appears to be given to research relating to health, education and training, housing, and planning. Economic research relating to legal and financial institutions and services, transportation and communication, and law and fire protection is practically non-existent. On the other hand, two-thirds of the research (two or three projects) representing the 67 percent area distribution of sociological research at the 1890 institutions dealt with housing and planning. Home economics research is conspicuously absent at the 1890 institutions for all of the 13 sub-area research objectives. Home economics research activity is relatively insignificant at 1862 institutions and is largely confined to the area of housing.

#### Human Resources Research

One of the interesting and probably significant findings in the human resource area is that the 1890

institutions appear to have concentrated a relatively high proportion of their research capability here. These institutions allocated almost 83 percent (52 of a total of 63) of their projects to research dealing with human resources. In contrast, 1862 institutions allocated only 44 percent of their total projects and SMY's (Table 3). The unavailability of equivalent SMY's for 1890 institutions does not permit a definitive statement as to the actual level of resources committed to this area. It is quite possible that the 83 percent could actually account for significantly less than the 44 percent SMY's and area projects of the 1862 institutions. This uncertainty of resource allocation notwithstanding, the fact is that if the number of projects is used as a rough indication of resource allocation, the evidence tends to support Williams' [9] contention that, historically, the research of the 1890 institutions has been more attuned to "people problems" than that of 1862 institutions.<sup>7</sup>

On a disciplinary basis, the 1890 institutions appear to have a much better balance (in terms of projects) in their human resources research program than the 1862 institutions. Although agricultural economics research accounted for the least number of area projects (19 percent), the skewness in disciplinary research was significantly less than in the case of the 1862 institutions. Interestingly enough, the number of human resource agricultural economics projects was roughly similar for the two groups of institutions. Rural sociological research accounted for 62 percent and 58 percent of all human resources research projects and SMY's, respectively, for 1862 institutions. Thus, this discipline had over three times the number of agricultural economics projects, four times the number of home economics projects, and almost twenty times the number of projects allocated to "other" disciplines. For 1890 institutions, the maximum difference among disciplines was only one-and-one-half times the lowest figure.

Cross-categorization of sub-area research by academic discipline shows a strong tendency for concentration of agricultural economics research in the sub-area of human development at 1862 institutions. Economic research dealing with welfare, health and nutrition, community decision-making, household management decisions, and quality of life is negligible. Rural sociological research at these institutions is heavily concentrated in human development, demography, and level of living. A significant level of interstate (regional) cooperative

research projects appears to have been achieved in sociological research; particularly in the areas of human development, level of living, and quality of life. Agricultural economics research at 1890 institutions emphasizes research dealing with level of living, quality of life, and to a lesser extent, human development and welfare.

In general, however, economic research at these institutions tends to exhibit a striking similarity in sub-area research gaps to the 1862 institutions. Thus, it would appear that 1890 institutions' rural development research efforts have done no better than their 1862 counterparts in generating problem-solving information in many crucial areas of human resources. It is quite possible, however, that the factors associated with this phenomenon could be quite different for the two groups of institutions. Low priority given to some of these sub-areas could be related to the traditionally commercial agriculture orientation of 1862 institutions, while it might be associated with more limited financial and manpower constraints among 1890 institutions.

Rural sociological research of 1890 institutions tends to be somewhat more oriented toward community decision-making and health and nutrition than its 1862 counterparts. A point of some significance, however, is the high emphasis given to health and nutrition studies within the discipline of home economics at 1890 institutions, relative to 1862 institutions. Again, as in the case of community services research, the relatively large number of projects classified as "other" for the 1890 institutions would tend to reflect some tendency for specialization in areas in which research competence is likely to be the greatest.

### **Income and Employment Research**

Approximately 29 percent of all 1862 institutions' rural development projects and SMY's involved income and employment studies (Table 3). This is in contrast to 13 percent of all projects for 1890 institutions. The disciplinary distribution of projects in this area indicates a high concentration of research activities in the field of agricultural economics. This tendency is probably related to the generally high economic content of income and employment policy considerations. Both types of institutions allocated some 90 percent of their area rural development projects to economic studies. However, in terms of the absolute number of projects, 1862 institutions had more than five times

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<sup>7</sup>Williams [9, p. 947] states, ".....in 1972 these colleges spent over 70 percent of their Public Law (PL) 89-106 research funds on human resource studies."

the number of economic-related projects than the 1890 institutions. Rural sociological and other disciplinary research tends to be minimal in this area.

Area and sub-area cross-categorization from data given in Tables 1, 2, and 3 indicates significant differences in sub-area agricultural economics research concentration between the two types of institutions. Specifically, agricultural economics research at 1862 institutions was highly concentrated in the areas of: (a) income and employment effects of natural resource investment, and (b) economic interaction in rural areas. The two areas accounted for almost 57 percent of total area research projects and SMY's. In contrast, agricultural economics research at 1890 institutions was concentrated in: (a) technology for small farms, and (b) enterprises for small and part-time farms. These two areas accounted for 71 percent of all agricultural economics research projects.

#### CONCLUSIONS AND POLICY IMPLICATIONS

Analysis of the characteristics of rural development research programs of Southern 1862 and 1890 land grant institutions shows certain tendencies that conceivably could reduce the long-run impact of regional rural development efforts. First, despite increased state and regional funding and interest in rural development research, regional effort appears short of creating a "critical minimum effort" that is likely to generate solutions to crucial problem areas. Second, despite the voicing of support for cooperative and integrated research between 1862 and 1890 institutions by state and federal research administrators, there is little evidence to suggest that concerted efforts are underway to operationalize this philosophy. Third, agricultural economics as a discipline that has historically been concerned with rural welfare has yet to demonstrate a strong commitment to: (a) cooperative regional rural development research, (b) research partnership with other disciplines, and (c) willingness to launch a frontal attack on the problems associated with human resources.

Disciplinary concentration appears to exist with respect to rural development research objectives. Agricultural economics research could exploit to a much greater degree the potential for reducing the "knowledge gap" by participating selectively in multidiscipline research; whereas, other disciplines are likely to enhance ability to more adequately identify crucial problem areas. Selectivity with respect to academic disciplines in multidisciplinary research is crucial. The agricultural economist should not lose sight of those problem areas in which economic analysis might be the primary need. This is likely to

be the case for problems associated with the development of viable community services. Agricultural economists at 1862 institutions have assumed a leadership role in this research area. Unfortunately, this cannot be claimed for their counterparts at 1890 institutions, where such research is virtually non-existent. In the latter institutions, activities are highly concentrated in the area of sociological research. This characteristic is obviously related to the absence of economic research capabilities or interest in this type of research at the 1890 institutions. The situation appears to offer a unique opportunity for interinstitutional cooperative research in the crucial areas of health, transportation and communication, housing, and legal and financial institutions, to name a few. By undertaking this type of cooperative research, the 1862 institutions can satisfy the needs of a wider clientele and simultaneously meet the needs of state and regional minority groups outside the general mainstreams.

The 1890 institutions have demonstrated their research commitment to "people problems," despite severe financial and institutional constraints. Their traditional concern for minority low income people has obviously enhanced a unique sensitivity to the socio-economic variables associated with human resource adjustment problems. The 1862 institutions could capitalize on this sensitivity by entering into a full and equal partnership with these institutions in concerted attempts to identify state and regional human resource problems. On the other hand, 1890 institutions might have to broaden their research orientation to include wider community problems than those historically associated with Black clientele, if meaningful research cooperation is to be attained with 1862 institutions. From the characteristics of existing regional human resource research, it would appear that agricultural economics research priority should be assigned to: (a) assessment of the effectiveness of welfare and educational programs, (b) health and nutrition, (c) household decision-making, and (d) community decision-making. The paucity of regional human resource research directed to these problem areas is consistent with the general pattern found by Bawden [1] in U.S. and Canadian agricultural economics research. However, the problems associated with human resource adjustment are likely to be aggravated in the South as a result of its unique historical and institutional characteristics [2]. The relatively low levels of agricultural economics research input in the above areas suggest, among other things, that these are areas where short-term and long-term payoffs to solutions of crucial rural development problems are likely to be as great for the region as it is expected to be for the

nation in the decades ahead [1].

Research relating to problems associated with income and employment generation in rural areas traditionally has been given relatively high priority by agricultural economists at both 1862 and 1890 institutions. Activities should be consolidated and expanded in this area. However, the profession should give greater priority to studies dealing with: (a) income and employment effects of rural industry, (b) plant location, (c) technological and enterprise packages for small and part-time farms, and (d) the effects of regulation on rural communities. As in the case of increased human resource research, the rationale for expansion and reallocation of resources in these areas can be made in terms not only of a

relatively small backlog of information, but also in terms of potential contribution to the solution of current and future major social issues of our time [1].

It is recognized that it will be impossible to wage a concerted attack on all fronts simultaneously, given resource constraints. Decisions will have to be made regarding feasible intra- and interstate division of labor with respect to research objectives among and within 1862 and 1890 institutions. However, research activities will have to be coordinated on a regional basis to a much greater degree than they are currently, if state and regional rural development is to become a reality in the decades ahead.

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**Appendix Table 1. SUMMARY OF RURAL DEVELOPMENT RESEARCH PROJECTS AND 1972-1973 SMY ALLOCATIONS FOR EXPERIMENT STATIONS OF 1862 INSTITUTIONS IN THE SOUTH<sup>a</sup>**

| Discipline                | Community Services (A)                           |                        |                        |                                       |                                   |                 |                 |                                  |   |                          |                                       |                                       |                    |
|---------------------------|--|------------------------|------------------------|---------------------------------------|-----------------------------------|-----------------|-----------------|----------------------------------|---|--------------------------|---------------------------------------|---------------------------------------|--------------------|
|                           | 1.01   | 1.02                   | 1.03                   | 1.04                                  | 1.05                              | 1.06            | 1.07            | 1.08                             | 1.09  | 1.10                     | 1.11                                  | 1.12                                  | 1.13               |
|                           | Health   | Education and Training | Water Systems          | Waste Disposal                        | Recreation                        | Law Enforcement | Fire Protection | Transportation and Communication | General Community Services  | Planning                 | Housing Equipment and Furnishings     | Legal Institutions and Legal Services | Financial Services |
| Agricultural Economics    | M4008(.1)<br>S046(.2)<br>Ar747(.7)<br>OK1494(.7) | K77(.6)<br>N13326(.1)  | M4303(.1)<br>S932(1.0) | G1121(.25)<br>A363(.3)<br>V616154(.3) | A048(.1)<br>A052(.1)<br>F1623(.5) |                 |                 |                                  | F1630(.4)<br>OK1457(1.4)<br>L1612(0)<br>Tx3026(.5)<br>L1617(0)<br>K85(.7)<br>Ar745(.7)<br>N13357(.3)<br>V616152(.2) | S987(1.9)<br>OK1492(.35) | Ar678(1.0)<br>N13327(.1)              | V152(.1)                              | L1555 (.9)         |
| Rural Sociology           |  |                        |                        |                                       |                                   |                 |                 |                                  | Tx3148(.53)<br>M4304(.37)<br>F1630(.2)<br>Ar674(.5)   |                          |                                       |                                       |                    |
| Home Econ.<br>Agrl. Engr. |  |                        | K123(.2)               |                                       |                                   |                 |                 |                                  |   |                          | V626116(1.1)<br>S872(.6)<br>T333(2.0) |                                       |                    |
| Total No. Projects        | 4  | 2                      | 3                      | 3                                     | 3                                 | 0               | 0               | 0                                | 13  | 2                        | 5                                     | 1                                     | 1                  |
| Total SMY's               | 1.7  | .7                     | 1.3                    | .85                                   | .7                                | 0               | 0               | 0                                | 5.80  | 2.25                     | 4.8                                   | .1                                    | .9                 |

Projects - 37  
SMY's - 19.10

APPENDIX  
TABLE 1. - cont.  
Human Resources (B)

| Discipline             | 2.01  | 2.02       | 2.03                                 | 2.04  | 2.05                               | 2.06                               | 2.07                      | 2.08  | 2.09          |
|------------------------|---|------------|--------------------------------------|---|------------------------------------|------------------------------------|---------------------------|---|---------------|
|                        | Human Development   | Welfare    | Health and Nutrition                 | Demography  | Educational Program Effectiveness  | Household Decisions and Management | Community Decision Making | Level of Living and Quality of Life   | Public Policy |
| Agricultural Economics | K93(.68)<br>T285(.65)<br>T365(.25)<br>Ar746(.7)<br>N13231(.4)<br>N1332(.6)  | F1629(1.1) |                                      | G442(.2)  | FAMU(.2)<br>Tx1995(0)              |                                    |                           | G432(.33)   | F1632(.5)     |
| Rural Sociology        | G425(.4)<br>K811(1.09)<br>Tx1969(.1)<br>A327(.4)<br>B439(.8)<br>A1231(.1)<br>M4006(.3)<br>S982(1.2)<br>Tx2811(.4) | F1629(.2)  |                                      | M4004(.75)<br>G442(.2)<br>S965(.2)<br>S970(.3)<br>T274(.33)<br>N3265(.4)<br>N3266(.4)<br>Tx1833(.6) | A318(.2)<br>FAMU(2.3)<br>Tx1839(0) |                                    | Tx1895(.25)               | Ar693(1.0)<br>K813(.29)<br>L1147(.1)<br>L1556(.1)<br>M4101(.89)<br>N13388(0)<br>A316(1.0)<br>G432(.67)<br>K815(1.21)<br>L1557(.1)<br>M4102(.4)<br>N11079(.3)<br>P276(1.0)<br>T331(.25)<br>Tx2791(0) | Tx2586(0)     |
| Home Econ.             | S826(.2)<br>T265(1.2)   |            | Tx1967(.1)<br>M4003(.81)<br>A341(.3) |   | V616158(1.4)                       | L1558(.66)<br>N13323(.9)           |                           | T354(.9)  |               |
| Agri. Ed.<br>Education |   |            |                                      |   | Ok1523(.25)                        | N13325(.9)                         |                           |   |               |
| Total No. Projects     | 17  | 2          | 3                                    | 9   | 7                                  | 3                                  | 1                         | 17  | 2             |
| Total SMY's            | 9.47  | 1.3        | 1.21                                 | 3.38  | 4.35                               | 2.46                               | .25                       | 8.54  | .5            |

Projects - 61  
SMY's - 31.46

APPENDIX  
Income & Employment (C)

TABLE 1. - continued.

| Discipline             | 3.01<br>Holding and Attracting Industry | 3.02<br>Plant Location | 3.03<br>Inc. & Empl. Effects of Rural Ind. | 3.04<br>Inc. & Empl. Effects of Natural Res. Invest.   | 3.05<br>Alternative Uses of Natural Resource | 3.06<br>Rural Recreation Enterprises | 3.07<br>Technology For Small Farms  | 3.08<br>Enterprises for Small and Part-time Farms | 3.09<br>Economic Interactions in Rural Areas   | 3.10<br>Inc. & Empl. Effects of Taxation and Regulation |
|------------------------|---|------------------------|--|--|--|--------------------------------------|-------------------------------------|---|--|---|
| Agricultural Economics | G1146(.2)<br>G435(.5)                   |                        | M4302(0)<br>K96(.75)                       | M4301(.2)<br>A315(.4)<br>A359(.5)<br>F1473(.3)<br>L1554(.3)<br>G412(.25)<br>T303(.25)<br>Ar715(.4) | A053(1.3)                                    | A299(.5)<br>G436(.3)                 | L1552(.2)<br>P267(1.0)<br>P277(2.1) | G1120(.16)<br>G1122(.4)<br>P245(.2)               | F1436(.2)<br>L1553(1.8)<br>G440(.6)<br>OK1456(.35)<br>Tx1768(.75)<br>M4402(.2)<br>F1628(.5)<br>G1071(1.0)<br>K89(.86)<br>T327(1.0)<br>T328(.4)<br>V616155(.3)<br>V626179(.3) | M4009(.2)<br>G434(.25)<br>S986(.2)                      |
| Rural Sociology        |   |                        |  |  | K814(.32)                                    |                                      |                                     | P245(.5)  |  |   |
| Agronomy               |   |                        |  |  |  |                                      | P267(.8)                            |   |  |   |
| Animal Science         |   |                        |  |  |  |                                      |                                     | Tx1972(.1)  |  |   |
| Total No. Project      | 2                                       | 0                      | 2  | 8  | 2  | 2                                    | 4                                   | 5   | 13   | 3   |
| Total SMY's            | .7                                      | 0                      | .75  | 2.60   | 1.62   | .8                                   | 4.1                                 | 1.36  | 8.26   | .65   |

Projects - #1  
SMY's - 20.84

<sup>a/</sup> Letters represent states: Ar=Arkansas, A=Alabama, N=North Carolina, P=Puerto Rico, Tx=Texas, etc.

Source: Southern Regional Rural Development Research Council: *First Report of the Southern Regional Rural Development Research Council to the Southern Experiment Station Directors, July 20, 1973.*

<sup>a</sup> Letters represent states: Ar=Arkansas, A=Alabama, N=North Carolina, P=Puerto Rico, Tx=Texas, etc.

**Appendix Table 2. SUMMARY OF RURAL DEVELOPMENT RESEARCH PROJECTS AT 1890 SOUTHERN AND BORDER STATE LAND GRANT INSTITUTIONS ACCORDING TO SOUTHERN REGIONAL RURAL DEVELOPMENT RESEARCH COUNCIL CLASSIFICATION, 1973<sup>a</sup>**

| Discipline             | Community Services (A) |                          |                       |                        |                    |                         |                         |                        |                                   |                  |                                |                                      |                            |
|------------------------|------------------------|--------------------------|-----------------------|------------------------|--------------------|-------------------------|-------------------------|------------------------|-----------------------------------|------------------|--------------------------------|--------------------------------------|----------------------------|
|                        | 1.01<br>Health         | 1.02<br>Educ. & Training | 1.03<br>Water Systems | 1.04<br>Waste Disposal | 1.05<br>Recreation | 1.06<br>Law Enforcement | 1.07<br>Fire Protection | 1.08<br>Trans. & Comm. | 1.09<br>General Community Service | 1.10<br>Planning | 1.11<br>Housing Equip. & Furn. | 1.12<br>Legal Inst. & Legal Services | 1.13<br>Financial Services |
| Agricultural Economics |                        |                          |                       |                        |                    |                         |                         |                        |                                   |                  |                                |                                      |                            |
| Rural Sociology        |                        |                          |                       |                        |                    |                         |                         |                        |                                   | SCX-PR-0003-08   | M-URP-06-71                    |                                      |                            |
| Home Economics         |                        |                          |                       |                        |                    |                         |                         |                        |                                   |                  |                                |                                      |                            |
| Others: Agri. Science  |                        |                          |                       |                        |                    |                         |                         |                        |                                   |                  | G116-15-08                     |                                      |                            |
| Total No. Projects     | 0                      | 0                        | 0                     | 0                      | 0                  | 0                       | 0                       | 0                      | 0                                 | 1                | 2                              | 0                                    | 0                          |
| Total SMY's            | NA <sup>b/</sup>       | NA                       | NA                    | NA                     | NA                 | NA                      | NA                      | NA                     | NA                                | NA               | NA                             | NA                                   | NA                         |

Projects: 3

TABLE 2. - continued.

APPENDIX  
Human Resources (B)

| Discipline                    | 2.01<br>Human<br>Development                         | 2.02<br>Welfare                     | 2.03<br>Health &<br>Nutrition   | 2.04<br>Demography                              | 2.05<br>Educational<br>Program<br>Effectiveness                         | 2.06<br>Household<br>Decisions &<br>Management | 2.07<br>Community<br>Decision<br>Making       | 2.08<br>Level of Living<br>and<br>Quality of Life            | 2.09<br>Public<br>Policy |
|-------------------------------|--|-------------------------------------|---|---|---|--|---|--|--------------------------|
| Agricultural<br>Economics     | NC.00107-<br>35-A<br>SC.00003                        | NC.00307<br>-C<br>NC.00307-51<br>-B | K.PR-0001-<br>13  |   | NC.00107-35-C   |  |   | A-PR-0003-1-73<br>D-PR-0003-3235<br>TXG-1727(2)<br>TX.G-1798 |                          |
| Rural<br>Sociology            | M.TF-VECA  |                                     | K.PR-0001-<br>24<br>K.PR-0001-<br>24(A)   | OK. PR-<br>0004-2745<br>TX. PR-<br>0002-G-1968  | Fl. (FAMU)<br>(2.3)   | TX. PR-0004-<br>G-1969                         | L.PR-0001-<br>8-15-1<br>L.00004<br>OK. AR. 05 | D.00916-15-44<br>G.PR.0004-72HR                              |                          |
| Home<br>Economics             | NC.00307-20<br>-A<br>TN.PR-0001-<br>34566            | NC.PR-<br>0004-08                   | Fl. (FAMU)<br>K.PR-0001-<br>19<br>TX.PR-0002-<br>G-1967<br>MI.1971-01<br>NC.00107-<br>35-B<br>NC.00307-<br>20-9<br>OK.PR-2001-<br>4.277<br>TN.0001-4166<br>344-34<br>TN.01-4122-<br>34204<br>TN.PR-0004-<br>34536 |   |   | TN. 06250                                      |   |  |                          |
| Others:<br>Agri.<br>Education | OK.PR-01<br>MO. PR-0003-<br>204<br>M.PR-0003-<br>URP |                                     |   | TN.PR-0001-<br>34556<br>MI.1970-01<br>MI.1968-1 | A.00-0005-71<br>OK.AR-04<br>OK.AR-03<br>OK.PR-0004-<br>2745<br>TX.G1920 |  |   |  |                          |
| Chemistry                     |  |                                     | K-PR-0001-<br>14<br>K.00102   |   |   |  |   |  |                          |

TABLE 2. continued.

## APPENDIX

## Human Resources (B) continued

| Discipline                              | 2.01<br>Human<br>Development | 2.02<br>Welfare | 2.03<br>Health &<br>Nutrition | 2.04<br>Demography | 2.05<br>Educational<br>Program<br>Effectiveness | 2.06<br>Household<br>Decisions &<br>Management | 2.07<br>Community<br>Decision<br>Making | 2.08<br>Level of Living<br>and<br>Quality of Life | 2.09<br>Public<br>Policy |
|---|------------------------------|-----------------|-------------------------------|--------------------|---|--|---|---|--------------------------|
| Physiology                              |                              |                 | K.X-PR-0001-<br>15            |                    |   |  |   |   |                          |
| Agronomy<br>Biology                     |                              |                 | K.PR-0001-<br>12              |                    |   |  |   | Fl.(FAMU)   |                          |
| Total No.<br>Projects<br>Total<br>SMY's | 8<br>NA <sup>b/</sup>        | 3<br>NA         | 17<br>NA                      | 5<br>NA            | 7<br>NA   | 2<br>NA  | 3<br>NA                                 | 7<br>NA   | 0<br>NA                  |

Projects: 52

## Income &amp; Employment (C)

| Discipline   | 3.01<br>Holding &<br>Attracting<br>Industry | 3.02<br>Plant<br>Location | 3.03<br>Inc. &<br>Empl.<br>Effects of<br>Rural Ind. | 3.04<br>Inc.<br>Empl.<br>Effects of<br>Nat. Res.<br>Invest. | 3.05<br>Alternative<br>Uses<br>of Natural<br>Resource | 3.06<br>Rural<br>Recreation<br>Enterprises | 3.07<br>Technology<br>for<br>Small Farms                                | 3.08<br>Enter-<br>prises for<br>Small &<br>Part-time<br>Farms | 3.09<br>Econ-<br>omic Inter-<br>actions in<br>Rural Areas | 3.10<br>Inc. & Empl.<br>Effects of<br>Taxation &<br>Regulations |
|--|---|---------------------------|---|---|---|--|---|---|---|---|
| Agricultural<br>Economics  | M.TFVECE                                    |                           |   |   |   |  | TX.PR-0003-<br>G-1970<br>TX.PR-0003-<br>G-1971<br>TX.PR-0003-<br>G-1970 | L.PR-0002-<br>8-15-5<br>SC.PR-0003<br>010                     | TN.PR-0001-<br>34816                                      |   |
| Rural<br>Sociology<br>Home Econ-<br>omics<br>Others:<br>Agronomy |   |                           |   |   |   |  |   | G.PR-0003-<br>72PS  |   |   |
| Total No.<br>Projects<br>Total<br>SMY's                          | 1<br>NA <sup>b/</sup>                       | 0<br>NA                   | 0<br>NA   | 0<br>NA   | 0<br>NA   | 0<br>NA                                    | 3<br>NA   | 3<br>NA   | 1<br>NA   | 0<br>NA   |

Projects: 8

Source:

(1) Southern Regional Rural Development Research Council. *First Report of the Southern Regional Rural Development Research Council to the Southern Experiment Station Directors*, July 20, 1973.(2) U.S. Dept of Agriculture, Cooperative State Research Service. *Research Work Unit/Project Abstract* (CRIS No. 326100, Sept. 28, 1973).

<sup>a</sup>Letters represent states: A=Alabama, Ar.=Arkansas, D=Delaware, Fl.=Florida, G=Georgia, K=Kentucky, L=Louisiana, M=Maryland, MI.=Mississippi, MO.=Missouri, NC.=North Carolina, OK.=Oklahoma, SC.=South Carolina, TN.=Tennessee, TX.=Texas.

<sup>b</sup>NA = Not Available.

