Planning for Rural Industries -- Local Employment

Thomas L. Dobbs

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Planning for Rural Industries—Local Employment

SOUTH DAKOTA STATE UNIVERSITY
U.S. DEPARTMENT OF AGRICULTURE
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Planning for Rural Industries—
Local Employment

Thomas L. Dobbs
Extension economist - community resource development

Many rural South Dakota communities are embarked on efforts to industrialize. Motivations behind these efforts are mixed, and include the desire for more local employment opportunities, an increased tax base, and the increased retail and service trade associated with an expanding population.

Planning for rural industrial development must take into account each of these objectives, as well as others. Those considerations related to the generation of local employment opportunities are discussed in this paper. Other, perhaps equally important, considerations are left for separate treatment elsewhere.

Trends and Experiences in Manufacturing Employment

South Dakota is benefiting from a national trend which finds manufacturing industries locating at an increasing rate outside established, large metropolitan areas. Employment in these industries grew at an annual rate of only 1.7% nationwide during the decade of the 1960's, but expanded at a 3.4% annual rate in the nation's "rural areas" (towns and cities of less than 50,000 population) during the same period.

These trends in manufacturing employment, along with other non-agricultural employment, are shown for the United States and for South Dakota in Tables 1 and 2. While manufacturing employment has declined in importance relative to other wage and salary employment nationwide (from 29.7% of the total in 1965 to 23.8% in 1977), it has steadily gained in importance in South Dakota (from 8.7% in 1965 to 10.3% in 1977).
Table 1. Non-Agricultural Wage and Salary Employment in the United States*  

<table>
<thead>
<tr>
<th>Year</th>
<th>Industrial Category of Employment</th>
<th>Employment (1,000)</th>
<th>% of Total</th>
<th>Employment (1,000)</th>
<th>% of Total</th>
<th>Employment (1,000)</th>
<th>% of Total</th>
<th>Employment (1,000)</th>
<th>% of Total</th>
<th>Employment (1,000)</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>Total Non-Manufacturing</td>
<td>42,754</td>
<td>70.3</td>
<td>51,572</td>
<td>72.7</td>
<td>58,705</td>
<td>76.2</td>
<td>60,488</td>
<td>76.1</td>
<td>62,585</td>
<td>76.2</td>
</tr>
<tr>
<td></td>
<td>Manufacturing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>60,816</td>
<td>100%</td>
<td>70,921</td>
<td>100%</td>
<td>77,052</td>
<td>100%</td>
<td>79,444</td>
<td>100%</td>
<td>82,140</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>*Totals not all exact, due to rounding.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Non-Agricultural Wage and Salary Employment in South Dakota*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1,000)</td>
<td>% of Total</td>
<td>(1,000)</td>
<td>% of Total</td>
<td>(1,000)</td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>13.5</td>
<td>8.7</td>
<td>15.8</td>
<td>9.0</td>
<td>19.8</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>3.9</td>
<td>2.5</td>
<td>5.9</td>
<td>3.4</td>
<td>8.4</td>
</tr>
<tr>
<td>Non-durable Goods</td>
<td>9.6</td>
<td>6.2</td>
<td>9.9</td>
<td>5.6</td>
<td>11.4</td>
</tr>
<tr>
<td>Non-Manufacturing</td>
<td>141.2</td>
<td>91.3</td>
<td>159.2</td>
<td>91.0</td>
<td>189.5</td>
</tr>
<tr>
<td>Mining</td>
<td>2.4</td>
<td>1.6</td>
<td>2.3</td>
<td>1.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Contract Construction</td>
<td>8.6</td>
<td>5.6</td>
<td>7.2</td>
<td>4.1</td>
<td>10.2</td>
</tr>
<tr>
<td>Transportation and Public Utilities</td>
<td>10.1</td>
<td>6.5</td>
<td>10.5</td>
<td>6.0</td>
<td>12.1</td>
</tr>
<tr>
<td>Wholesale and Retail Trade</td>
<td>41.3</td>
<td>26.7</td>
<td>45.1</td>
<td>25.8</td>
<td>56.5</td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
<td>6.9</td>
<td>4.5</td>
<td>7.4</td>
<td>4.2</td>
<td>9.0</td>
</tr>
<tr>
<td>Services</td>
<td>25.2</td>
<td>16.3</td>
<td>33.4</td>
<td>19.1</td>
<td>43.4</td>
</tr>
<tr>
<td>Government</td>
<td>46.7</td>
<td>30.2</td>
<td>53.2</td>
<td>30.4</td>
<td>55.7</td>
</tr>
<tr>
<td>Total Non-ag Wage and Salary Employment</td>
<td>154.7</td>
<td>100%</td>
<td>175.0</td>
<td>100%</td>
<td>209.3</td>
</tr>
</tbody>
</table>

*Totals not all exact, due to rounding.

Nearly 10,000 wage and salary jobs in manufacturing were added to South Dakota's economy between 1965 and 1977; this includes manufacturing connected to agricultural products as well as that unrelated to agriculture.

Although the total employment in manufacturing is still modest, the 72% employment increase in this sector in recent years has helped to offset continued declines in agricultural employment. As indicated in Table 3, agricultural employment declined in South Dakota by more than 15,000 jobs between 1965 and 1977. In spite of this, the manufacturing employment increases, added to increases in other non-agricultural sectors, facilitated a net overall employment increase in the state of approximately 56,000 during this period.

Employment in certain other South Dakota industries has increased over the last 12 years by greater amounts than in manufacturing (Table 2). Employment increased by

Table 3. Agricultural and Non-Agricultural Employment in South Dakota

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Agricultural Wage and Salary</td>
<td>154.7</td>
<td>175.0</td>
<td>209.3</td>
<td>218.6</td>
<td>225.6</td>
</tr>
<tr>
<td>Other (domestics, non-agricultural self-employed, etc.)</td>
<td>35.5</td>
<td>34.1</td>
<td>37.2</td>
<td>38.1</td>
<td>39.7</td>
</tr>
<tr>
<td>Total Employment*</td>
<td>252.0</td>
<td>259.6</td>
<td>291.5</td>
<td>296.1</td>
<td>308.5</td>
</tr>
</tbody>
</table>

*The total is less than the sum of the three individual categories, since it eliminates double counting due to dual job holders.

SOURCES: South Dakota Department of Labor, Research and Statistics Section, South Dakota Annual Planning Report No. 8, Fiscal Year 1979. Aberdeen, South Dakota: May 1978; plus additional data provided by the South Dakota Department of Labor, Research and Statistics Section.
20,600 in wholesale and retail trade and by 21,800 in services. However, a good deal of the growth in these industries is tied directly or indirectly to economic activity in the state's "export" sectors, such as agriculture, mining, and manufacturing. In that sense, these three sectors are basic to South Dakota's economy. So are those segments of retail trade and services which constitute sales to tourists. Recreation and tourism thus also constitutes a basic industry in South Dakota. That portion of the government sector financed from out-of-state sources (e.g., military forces) constitutes yet another source of basic employment in South Dakota.\footnote{The government sector contains a number of diverse groups, such as federal civilian and military employees, state employees, public school teachers, municipal employees, and so forth.}

How does this affect an individual community?

A community seeking new industry may have a number of goals in mind: (1) a larger tax base to support public services; (2) increased local spending to enhance earnings of construction, retail, service, and other businesses; and (3) increased employment opportunities for its residents. In any given situation, new industry may be beneficial with respect to some of these goals and ineffective or even disadvantageous with respect to other goals.

For example, a new manufacturing plant in some types of communities might result in expanded employment opportunities and increased service industry profits but cause municipal or school district costs to rise more than do taxes, utility revenues, and other service charges.

While each of these considerations affects the decision of a community on what kind of industry it wants and what it is willing to do to attract that industry, this
paper describes only some of the employment considera-
tions.  

How much will local residents benefit from employment gene-
rate by new industry? 

In any given community, this depends both on the total
number of jobs generated directly and indirectly by a new
plant and on the availability and capability of local
residents to fill those jobs (and jobs vacated by those
locals accepting new employment in the plant).

The type of plant and its size of operation determine
how many jobs are generated directly, while the character-

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Fact Sheet (FS 669) "Does industrial development
lower taxes?" discusses some of the municipal and school
district budget considerations of industrialization. A
procedure for estimating the magnitude of these effects
in any given community is described in EMC 715-A,
"Industrial development: Citizen's workbook for assessing
economic and public finance impacts." These publications
are available through county Extension offices.

The information cited in responses to this and the
following questions is drawn largely from (1) a compre-
prehensive review of rural industry experiences by Gene F.
Summers, et. al., Industrial invasion of non-metropolitan
America: A quarter century of experience, New York:
Praeger Publishers, 1976; (2) an unpublished manuscript by
Thomas L. Dobbs on "Impacts of new or expanding industries
on rural area employment;" (3) SDSU, "A case study of the
economic impact of the 3M Company on the Brookings com-

munity," M.S. thesis in Economics by Dwight G. Uhrich,
1974; and (4) a study of industries in several South
Dakota communities by Mike Keegan and V.E. Montgomery at
the University of South Dakota, The impact of industrial
development on selected South Dakota communities, Business
istics of the plant as well as of the community in which it is situated determine the number of jobs generated through indirect or "multiplier" effects.

Multiplier effects on both income and employment result from expenditures by the industry itself on supplies produced within the local community; from further processing, wholesaling, or retailing of the plant's product if any of this takes place locally; and from increased local consumption expenditures by owners and employees of the industry.

Each of these types of expenditures induced in a community by new industry is followed by additional rounds of expenditure as those who benefit from initial sales in turn increase their expenditures on local supplies and consumer goods. The cumulative effect of these successive rounds is referred to as the total or "multiplier" effect on local income and employment.

The larger the "community," the larger these multiplier effects will tend to be. For example, if the community represents only the interests of those within the municipal boundaries of the town in which a new industry locates, the employment multiplier may take on one value. However, if the community is considered to include not only the town where the plant locates but also the rural area and several other small towns in the county (from which some plant employees may commute and in which they make purchases), then expenditures retained within this community will tend to be somewhat greater. Therefore, the employment multiplier will take on a somewhat larger value.

In general, the more supplies, housing, services, and so forth that are available within a community, the more expenditures will remain within that community and the greater will be the multiplier effect on employment and income.

Employment multipliers averaged 1.29 in 12 of the different counties across the U.S. in which rural manufacturing has been studied. This means that for each new manufacturing job created, an average of .29 other jobs in each county were generated as a result of the increased spending.
Stated another way, for approximately every three and one-half manufacturing jobs, one additional job in related businesses, services, and so forth was created \((3.5 \times 0.29 = 1)\). Similar studies of manufacturing in five multi-county areas were found to be slightly larger: 1.39. In effect, the larger geographic areas retained higher proportions of the multiplier effect.

A number of studies have examined the origins and characteristics of people who obtain employment in rural manufacturing plants. A study of 26 plants in southern areas of the U.S. found that 77% of the new manufacturing jobs were obtained by local area residents. The remainder were obtained by in-migrants and former residents returning to the areas studied. Other studies showed that around 30% of a new plant's work force typically migrates into the community from outside the county.

Closer to home, a study of the 3M plant in Brookings, S.D. found that 47% of the plant's employees moved to the community to work at the firm; it is not known how many of those came from outside the county, however.

Many communities can expect a significant number of new manufacturing jobs to go to commuters from surrounding towns and outlying rural areas. (Some of this surrounding territory may of course be within the community in the sense of having the same school, police, or fire protection services.) At the Brookings 3M plant, for example, 32% of the employees commuted from outside the city, some coming from as far away as a 45-minute drive. Commuters in several other South Dakota communities make up 27% to 58% of the work force of plants in each community.

Although studies often show commuting distances to be substantial at the outset, many employees tend to relocate later in or near the town in which the plant is located, as both the plant and the employees' status with the plant become more permanent.

Some employees can be expected to commute 10, 15, or more miles indefinitely, however, especially when another member of the household has employment elsewhere. This often occurs when women accept new manufacturing employment.
and their husbands continue in farming or other occupations at the existing place of residence.

It is a fact that many manufacturing plants now locating in rural areas draw heavily on the female work force. Four studies of manufacturing employment in South Dakota found females constituting from 0% to 86% of plant work forces. Studies of 26 manufacturing plants in rural areas across the U.S. found an average of 40% of plant work forces to be females; in some cases, 80% to 90% or more of the workers were female. The ratio of female to male workers was heaviest in such industries as apparel manufacturing and electronic systems components.

What these studies indicate is that manufacturing growth in rural areas often provides employment directly for many local residents and commuters from surrounding areas; that perhaps one fourth to one half of the work force may consist of migrants into the community; and that plant employment frequently consists of females, who in many cases are probably spouses adding a second income to the household. Additional employment is provided for local residents through the multiplier effects on other businesses and services linked to new plants by expenditures of the firm or its employees.

How does a new industry affect unemployment and underemployment in a community?

At first glance, it might seem that unemployment and underemployment would of course be reduced by addition of new industry to a community. If industrialization is looked at as a one-shot process, in which all employment impacts of a new plant are experienced at the outset or in very early years, this may be true. However, industrialization often introduces a dynamic sequence of changes in the work force.

A distinction should be made between unemployment and underemployment. Unemployment refers to the status of persons actively but unsuccessfully seeking employment. Underemployment is broader, including workers employed less than full time or in jobs which substantially underutilize their skills or productive capacities. Since underemployment is difficult to measure statistically, published data
are almost all in terms of unemployment. It is generally safe to assume that underemployment in a given area exceeds recorded unemployment.

This is especially true of a state like South Dakota, where few people generally experience outright unemployment, but where the jobs performed often underutilize workers' skills and, in turn, provide lower pay than might be received by the same workers elsewhere. The seasonality of some activities, such as farming, can also result in greater underemployment at certain times of the year than others.

Studies which have examined the effects of new manufacturing plants on unemployment reveal mixed results. Of 16 studies which measured area unemployment before and after establishment of a new manufacturing plant or plants, approximately two thirds revealed decreases in the unemployment rate. In the remainder of cases, new manufacturing activity either was insufficient to prevent an increase in the unemployment rate or actually somehow helped induce a higher unemployment rate.

There are several reasons why new manufacturing activity may not always decrease unemployment rates as much as expected:

1. New workers, frequently wives, enter the work force when a new plant comes into town. If they were not previously seeking employment, they were not counted among the unemployed.

Thus, a new plant could increase employment earnings by utilizing previously underutilized productive capacities but not decrease the rate of unemployment as much as if all new employees were simply drawn from existing roles of the formally unemployed.

However, if the plant should later shut down for some reason, the families of those working wives will have come to rely on the extra income; the wives may seek but not find substitute employment in the area; and the rate of unemployment could actually end up higher than it was prior to initial establishment of the plant.
2. The increased possibilities for employment in a particular area may both slow out-migration and attract workers from other areas.

Hence, though new manufacturing activity adds jobs to the community, there may be more people available in the community for those jobs. Employment in absolute terms could thus go up without necessarily affecting the rate of unemployment.

Of course, the fact that fewer young people have to migrate out of the community to find work may be highly valued by many community members, and should not be discounted.

3. The overall employment picture may become more dynamic as a community becomes industrialized.

The demands for many manufacturing products are highly dependent on national and international forces. There may be a ready market for the product of a new manufacturing plant at the time of plant establishment; yet demand may slump and the product may even be completely replaced as a result of new technology a few years later.

Also, as labor, energy, and other costs of production change over time, manufacturers may relocate either to other parts of the United States or to foreign countries.

These realities should serve as a reminder to communities and small regions not to become too reliant on a single manufacturing plant or line of manufacturing activity. Diversity in a community's manufacturing activities can help cushion the ups and downs among industries, just as a mixture of manufacturing, agricultural production, and other activities can help balance an area or state economy.

How will income levels of various groups in a community change with new industry?

There are two places where significant but widely varying increases in income show up in communities impacted by new industry. These are in average per capita
income and in earnings of households directly affected by the new industrial jobs.

Per capita incomes increased an average of 58% for the population as a whole in 28 areas (counties, in most cases) across the country affected by industrialization. However, the average increase ranged from 5% in one area up to 184% in another. It should be born in mind, of course, that the magnitude of new industrial activity was probably substantial in relation to the population of some counties, and that other economic activities may have been responsible for significant portions of some of the income increases.

Employees in the Brookings 3M plant who had been previously employed just prior to joining 3M increased their salaries by 57%. Earnings of new industrial employees increased by an average of 20% to 49% in three other South Dakota communities. In yet another two South Dakota communities, where the earnings of new industrial employees were expressed on a household basis, the average increases in income per household were found to be 33% and 50%.

These very limited findings for South Dakota, coupled with the studies done elsewhere, indicate that industrialization effects on household incomes of new employees, as well as on per capita income for the impacted community as a whole, can often be substantial. However, the increases may be quite modest in the case of some industries and communities.

What most figures do not reveal is the distribution of income effects among different population groups.

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4 Gene F. Summers, et. al. (1976); see footnote 3 for complete citation. These figures were adjusted for inflation, and thus reflect real changes in per capita income.

5 It is not apparent that data in the South Dakota studies were adjusted for inflation to arrive at changes in real income. If the time frame used in each income comparison was short enough, however, that may make little difference.
One way to look at income distribution effects is to categorize population groups according to their occupational skills and relationship to the labor market. Three interdependent segments of an area's labor market are (1) the skilled, (2) the semi-skilled, and (3) the unskilled. (This is an artificial grouping, of course, since there is a continuum, as well as a diverse mix, of skills among individuals in the labor market.)

The poorest or most disadvantaged persons in the working age population tend to be in the unskilled category. In time periods or regions of weak demand for labor, many of these unskilled may experience outright unemployment, while some of the skilled and semi-skilled may experience underemployment.

The nature of new jobs created will strongly influence how each of these groups is affected by industrialization. In some cases, already employed semi-skilled workers benefit most directly from new opportunities in industry, but the jobs they vacate open up new opportunities for the unskilled to become employed. Thus, even those on the lower rungs of the skills and income ladder may benefit from industrial growth.

However, some groups may be bypassed by the expanded employment opportunities and most other beneficial effects and, in fact, may be made even worse off as a result of industry moving in.

Those outside the labor market, particularly retired people on relatively fixed incomes, can be particularly vulnerable. By the nature of their age and work status, they do not benefit from the strengthened local labor demands brought about by new industry. But if the new industry and associated population growth in the community should cause their taxes and the costs of local goods and services they purchase to rise, these persons are faced with real income declines. (This could be offset if and when they sell their homes, as the new industry may substantially push up home values.)

In other words, industrial growth can make it more, rather than less, difficult for some individuals in the community to maintain their standard of living. Careful
consideration needs to be given to compensating those in the community who are so affected. Unless industrial growth is carefully planned and tailored to the overall needs of the community, adverse side effects for some are very real possibilities.

Implications for Industrial Development Planning in South Dakota Communities

It is well for communities to look closely at how well a proposed new industry matches local labor force needs and potentialities. This involves some examination of existing labor market conditions in the area, of expected future work force demands of existing employers, of potential skills and availabilities of employees, and of demands for local employment likely to be created directly and indirectly by new industry. Very briefly, such an examination might consist of the following steps:

1. Obtain existing published and unpublished information on the structure of local employment and the local economy.

Both the community and potential new firms need information on the existing employment pattern and size of work force, degree of unemployment, age and sex characteristics of the labor force, and labor force participation rates.

This labor force information needs to be supplemented by other information on the area's economic structure, including the relative importance of various industries and probable multiplier effects emanating from new industry.

Among the key sources for these types of information in South Dakota are the Research and Statistics Section of the South Dakota Department of Labor, local Job Service offices, the Planning Information Assistance Section of the State Planning Bureau, and the Cooperative Extension Service.

2. Survey existing employers in the area.

Although not necessary in all cases, a survey of existing employers in the community or within the general commuting area can provide valuable information on wage
patterns, union practices and union-employer relationships, short- and long-term hiring plans, job turnover, use of on-the-job training, and skill and educational requirements for employees.

If there is a large number of employers, a survey of only a sample from different industrial categories may be sufficient. Mail, personal interview, or other techniques may be used to obtain information, but they must be tailored to the individual situation to both hold down time and costs and assure that the information obtained is sufficiently reliable.

3. **Survey the area labor force.**

A sample survey of the local labor force may be necessary to determine numbers of existing and potential workers in various age and skill categories, wages required to attract workers into new industrial employment, willingness and ability to commute various distances, and short- and long-term employment aspirations of members of the community.

As in the case of employer surveys, there are various sampling and survey technique options, some of which are better suited to particular situations than others. (The South Dakota Department of Labor can provide some assistance in planning and conducting labor market surveys.)

If there are few or no significant changes in local employment patterns or levels, information obtained in a labor force survey may be usable for several years. However, a single major change -- such as the start-up of a new plant employing many local people -- could quickly make information such as that on labor availabilities and willingness to commute to new jobs obsolete.

4. **Examine the labor force needs and employment practices of potential new industries.**

With the above information in hand, communities can begin to look at job demands of potential new industries and to analyze how well those demands complement labor availabilities and job aspirations of the local populace.
This involves looking not only at the types of jobs, wages, and fringe benefits to be offered by industry, but also at company policies on recruitment and training. The extent to which new industry expects to purchase supplies locally also must be considered, as that will influence the magnitude and types of community employment generated indirectly.

In addition to the above steps, local planning for new industry should be coordinated with surrounding communities and with educational and vocational training institutions in the state. Though nearby communities are often vying with each other for new industry, a degree of joint planning and cooperation may sometimes be more effective and less costly for both than independent action. For example, two nearby towns might join together in emphasizing their collective advantages for industry, recognizing that many facilities can be shared and that commuting between the two towns is a practical possibility for workers.

The cooperation of educational and training institutions is important to assure that those preparing for entry into particular jobs are aware of all available preparatory opportunities, whether in the form of short-term vocational-technical training or college and university programs. Also, it may be that appropriately targeted vocational education programs could serve as inducements to high-skill manufacturing plants seeking new locations.

Finally, it must be stressed that employment is only one of several necessary considerations in planning for rural industry. Effects on the tax base, on the demands for community services, on community character, and on the well-being of persons on fixed incomes are among the other important factors to be weighed and incorporated in development planning activities of communities.

For further information on planning for industry in non-metropolitan communities, contact the Cooperative Extension Service. Your local county Extension office can obtain materials and some forms of assistance through SDSU Extension economists specializing in community resource development.