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## REVITALIZING A RURAL REGION'S ECONOMIC BASE

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# **REVITALIZING A RURAL REGION'S ECONOMIC BASE\***

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## **INTRODUCTION**

Rural regions are vulnerable to changing market conditions and government policies. They are extremely vulnerable to these changes when they affect the region's economic base. Revitalizing a natural resources-based rural region under existing global economic conditions is a challenge, therefore, that entails much uncertainty about its successful resolution.

This paper addresses the challenging tasks of revitalizing a rural region's economic base. It redefines the concept of the economic base. It differentiates among rural areas by proximity to their metropolitan core area. It identifies important economic linkages between rural and metropolitan areas of the larger region that work to the mutual advantage of both areas. It addresses this challenge from an international perspective by focusing on steps towards revitalizing two rural areas: one in the US--Cook County, Minnesota; the other in Norway--the adjoining municipalities of Grong and Overalla in North Trondelag County. This paper is also a joint effort of members of two educational institutions working under a cooperative agreement to further such efforts.

## **OVERVIEW**

### **Delineating the Economic Base**

A first step in deciding how to restructure a rural community is to delineate its economic base--the main sources of its prosperity and economic well-being. The economic base of a rural community is its first concern (Maki, 1991). Without the economic base the community would not exist. It provides the means of trade with the rest of world and the income payments for maintaining the industry production processes.

However, use of different delineation criteria complicate its measurement. They include the basic-service ratio,

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the area income multiplier and the social accounting matrix.

**Basic-service ratio.** Homer Hoyt, an economist with the US Federal Housing Administration, formulated the essential outline of the economic base idea more than 55 years ago. His initial formulation of the economic base ratio was very simple: basic-to service employment in a city is in the ratio of 1 to 1.

Hoyt's intent was to use the basic-service ratio to predict employment and population growth in a city. Given well-founded forecasts of export producing employment and reliable estimates of the basic service multiplier and the employment-producing employment and reliable estimates of the basic service multiplier and the employment-population multiplier, it is possible to construct employment and population forecasts for the housing and other urban planners in the large cities and metropolitan areas of the US.

**Area income multipliers.** More than 25 years ago, Charles Tiebout published a series of articles critical of the existing economic base concept. He proposed, instead, the use of income rather than employment as a measure of the economic base. He proposed, further, to identify the income affected by exogenous determinants of change as basic and the endogenously affected income as service or residentiary.

In 1962, the Committee for Economic Development published Supplementary Paper No. 16--The Community Base Study by Charles Tiebout. It joined the economic base idea with the mainstream of current economic thought. He introduced use of Keynesian multiplier as a model for the construction of the community base multiplier. It also provided a rationale for the implementation of a community base study. To this day Tiebout's model of the community economic base serves as an inspiration and a guide to graduate students writing masters' theses and doctoral dissertations in the regional sciences. Urban and regional planners use this model in forecasting future economic activity.

**Social accounting matrix.** A growing number of countries, including those in the Organization for European Economic Development that sponsored Sir Richard Stone's early studies, adopted the national income and product accounts and input-output modeling systems he proposed. The accounting systems followed the principles and procedures he had established over the previous quarter century of research and reporting. The social accounting matrix is at the heart of the third generation of economic base modeling.

The most recent uses of economic base modeling rest upon the theoretical and empirical advances of a half century or more of economic research and, particularly, the improvements in data collection, processing

and analysis of the last two decades. They rest, finally, on access to data and constructs for estimating income flows in a regional economy. Income flows that bring into the local community the new dollars for buying locally produced goods and services, as well as imports, now define the dimensions and determinants of the community economic base.

### **Differentiating the Economic Base**

One region's economic base differs from another for many reasons. One region may specialize in a particular product or commodity, like farming. Such a region risks much by its extreme dependency on one industry. Another region may have a manufacturing industry as well as farming in its economic base. Its manufacturing may not compete, however, because of high costs. These costs are high because of high material input costs, like energy or labor. They may be high, also, because of low output per worker. Still another region may have a wide variety of manufacturing and service industries in its economic base, but still lack flexibility in adjusting to changing market conditions. Thus, a multiplicity of criteria must apply in the assessment of a region's economic base. Among such criteria are the risks and costs of production and the productivity and flexibility of resource use in production.

**Risk.** Extreme specialization of economic activity in a region usually incurs high risks for its trade and services sectors. They are dependent upon a stable and viable economic base for their business successes. Risk thus correlates with industry specialization for businesses that cater to local markets.

Risk also correlates with both early and late stages of a product cycle. Introduction of a new product incurs costs of investing in its development and marketing. Cost recovery depends on the market success of the new product.

Alternatively, an old product is in danger of losing its market to competing products on a quality or cost basis. Again, businesses dependent on the economic base created by the successful entry of a locally produced product that now faces stiff competition that results in uncertainty about the future for other local businesses. High risk businesses face reduced prospects for business loans and favorable credit terms from suppliers.

Rural regions, removed from access to large consumer and producer markets, are singularly

dependent on farming, fishing or mining. They lack prospects for diversifying their local economic base. In such cases, local credit sources soon disappear while distant credit sources heavily discount high-risk loans.

**Costs.** Risk, when discounted heavily, adds to production costs. High wages and high regulatory and environmental costs also add to the costs of doing business in a particular region.

Many rural regions offer cost advantages for export-producing businesses because of low site costs--land and buildings, labor, environmental regulations, and congestion. Transportation, business, and related services cost less in many rural areas than in metropolitan areas. Personal services and housing also cost less in rural than metropolitan areas. For these regions, low costs are an advantage when accompanied, also, by low-cost access to large consumer and producer markets.

**Productivity.** Productivity of resource use correlates with investment per worker. Investment per worker is generally low in rural areas. It is much higher in metropolitan areas. Capital substitutes for labor, which increases overall factor productivity.

High labor productivity also correlates with investment in the "human agent"--education, on-the-job training, life-long learning. Attitudes, life styles, and social and political stability make a difference, too. Convenient access to nearby educational institutions in rural areas and to information sources in metropolitan areas provides opportunities for rural residents to improve existing skill and develop new ones.

Despite an initial disadvantage in low investment per worker, residents in rural areas have opportunities to reduce these disadvantages by wisely directed investment in education and training for a changing job market. A strong work ethic and supportive attitudes and values, when coupled with new and superior skills development, make some rural areas superior places for new business formation, branch plant location, and expansion of existing businesses.

**Flexibility.** A fast-changing global economy makes flexibility in work practices and organization an essential pre-condition for successful business enterprise. Flexibility of access to input supply sources and procurement practices is important, too. In both cases, the flexibility is a function of the learning processes in an organization and the ability to gauge the likely outcomes of improved learning capacities.

Successful business organizations have the robustness or capacity for adaptation to changing market conditions and new production technologies. They are successful learning organizations.

**Synthesis.** Table 1 summarizes the four criteria for assessing the vulnerability of an area's economic base--risk, costs, productivity, and flexibility. It relates the four criteria to the location of a rural area in the larger regional settlement system. Both the metropolitan core area and the rural area are parts of the larger system. It also differentiates between site costs and transfer costs.

**Table 1. Criteria for Assessing a Region's Vulnerability to Changing Market Conditions and Government Policies**

Criterion	Core Area	Transitional Rural Area	Peripheral Rural Area
Risk	Low	Moderate	High
Cost			
Site	High	Moderate	Low
Transfer	High for commodities; low for information	Moderate	Low for commodities; high for information
Productivity	High	High in branch plants; moderate in small businesses generally	High in branch plants; low in small businesses generally
Flexibility	High	Moderate	Low

Site costs include labor costs as well as land and building costs, rent, taxes, pollution abatement costs, and other regulatory costs. Transfer costs include transportation charges and other marketing and transaction costs. Transfer costs differ most between standardized commodities, like No. 2 corn, that competes worldwide on a unit cost basis and highly differentiated products, like market or medical information, that compete on a quality as well as a cost basis. Transfer costs for certain information, for example, are lower in the metropolitan core area than in rural areas because of the necessity of one-on-one relationships in producing, distribution and using this information. These costs may be prohibitively high in rural areas and, therefore, unavailable.

A metropolitan core area is an economic region's principal transportation and communications center. It is also the principal center for producing, distributing and using decision information for the private and public sectors of the region. Thus, the activities concentrating in the metropolitan core area are information intensive. They can afford to pay the high site costs of the metropolitan downtown district because of its market access advantages over other locations. They experience relatively little risk because of location and they have capacity for achieving high levels of productivity and flexibility in resource use.

Rural areas are of two types: transitional and peripheral (Maki and Reynolds 1992; Reynolds and Maki, 1991). Transitional rural areas adjoin the metropolitan core area and extend to the outer commuting limits of the core area work places and even slightly beyond. Within the 60-mile or so radius of the core area, farm subdivision is a common practice because of the high demand for part-time, hobby and garden-type



residential farms. Off-farm employment of one or more family members supplements farming as an income source. Off-farm employment opportunities occur in manufacturing plants locating or expanding in the transitional rural areas and in trade and service establishments of growing rural service centers.

The four criteria for transitional rural areas are in their mid-range between the core area and peripheral area values. Productivity of resource use, however, is high because of access to capital financing and high value of investment per worker.

Peripheral rural areas are furthest from the spillover effects of metropolitan development. Agriculture, forestry or mining in many peripheral areas overshadow manufacturing as the dominant economic base.

Peripheral area businesses face high risks because of specialization in cyclically sensitive or government policy sensitive industries. Productivity per work is generally low, except in businesses with high investment per worker and superior market access.

## **REDEFINING THE REGIONAL ECONOMIC BASE**

### **Export-producing Sector**

The export-producing sectors delineate the economic base for the standard economic base model. The export-producing industries are those producing goods and services for non-residents. Almost every export-producing industry also produces for local sale. Thus, the differentiating criteria--product markets and labor markets--separate "exports" from "local" sales.

**Labor markets.** The commuting area of a local labor market differentiates between "export" and "local" markets. Export markets are those outside the commuting area of the local labor market. The boundary between two commuting areas occurs where residents commute to their respective labor markets in equal numbers. In 1980, for example, analysis of the US Census of Population by a team of US Department of Agriculture researchers produced a total of 382 multi-county labor market areas in the US (Tolbert and Killian, 1987). Thus each labor market contained an average of 8.2 counties and a population of slightly less than 700 thousand. Many labor market areas are much smaller than the average and some are much larger due to the great variability in their population densities.

**Product markets.** The product markets and the products produced locally define the economic base of the local area or community when combined with its labor market delineation. The proportion of total export-producing jobs and payroll attributed to each industry is a measure of its importance of the area's economic base. The critical economic linkage of each area is its export-producing sector. Different areas behave differently in recession and recovery because difference in their dominant export-producing industries.

### **Income-creating Sectors**

**Exogenous.** Local income-creating sectors derive their sustenance from other sectors that attract income payments from outside the labor market area. These are the exogenous income sources that add to rather than re-arrange local income flows.

The magnitude of the exogenous income flows is dependent on a wide range of contractual arrangements between local residents and the external income sources. The contractual arrangements may result simply from competitively priced high-quality exports or long-term pension and social insurance commitments. Alternatively, the income flows may quickly cease, as in case of agricultural or small business subsidies. In any event, income flows from outside the labor market area can change in magnitude due to circumstances outside the control of individuals and organizations in the labor market area.

Because local residents lack control over exogenous income sources, they are vulnerable to unexpected changes in the income flows. Some changes elicit responses in business behavior that result in improvements in product quality, productivity of resource use, and export market shares of local exporting businesses. The capacity to respond successfully to unexpected changes in exogenous income flows is another way of describing the robustness of the local economy.

**Endogenous.** Exogenously-generated income flows trigger locally-generated income flows. The income flows are the consequence of the backward linkages of exporting businesses, including the personal consumption expenditures of the local work force affected directly and indirectly by the initial exogenous income flows.

Exogenous forces generate much of the physical and social infrastructure of a labor market area. Its development and maintenance are in response to changes in the area's basic economy. Revenues

collected from the total economy of the governmental jurisdictions in the labor market area and from intergovernmental transfer payments finance the infrastructure development.

Public transportation and communications systems are part of the physical infrastructure. They are passive, but constraining, agents of local economic development. They are a necessary, but not a sufficient, condition for economic development. They respond to, rather than lead, business and residential growth.

Publicly supported health care and education are part of the social infrastructure of labor market area. An effective health care adds to the quality of life of local residents. It also adds to the productivity of the local work force insofar as access to a superior health care system reduces lost time due to illness. An effective educational system, on the other hand, is also an active agent of economic development. Studies dealing with investment in the "human capital" document its contribution to the lifetime earnings of individuals.

#### **Vulnerability-reducing Sectors**

Neither of the two steps in the delineation of the economic base--export-producing and income-generating--sufficiently differentiate the industry and activity composition of a local economy to provide useful and practical measures of its vulnerability to economic shocks. Unanticipated change in export markets and exogenous income flows are endemic with vulnerable rural areas and natural resources-based economies. A third step under the rubric of risk and costs, productivity and flexibility takes into account the differentiating characteristics of vulnerable and viable regions.

**Risk and costs.** Strong linkages with core area businesses reduce a rural area's vulnerability to unanticipated economic change by reducing the risks and costs faced by its individual businesses. The decentralized markets of economic theory function well because of the variety of contractual arrangements between buyers and sellers. Recurring negotiation sustain and improve these contracts.

Core areas manufacturing businesses, for example, initiate numerous contractual arrangements with businesses in rural areas to produce their product in peak periods or in periods of tight labor supply. They may initiate other contractual arrangements for integrating rural input supply sources into their production scheduling through professional and technical training programs in supply management, inventory control, and production scheduling (Leo and Philippe, 1991; Ley and Hutton, 1987; Scott, 1988).

**Productivity and flexibility.** Vulnerable rural areas learn from viable rural areas when an assessment of the differences between the two focuses on productivity and flexibility. Businesses forming, locating or expanding in transitional rural areas adjacent to the metropolitan core area of a large region have an important advantage. They have proximity to world class information systems and producer services for adapting rural area businesses to changing production technologies and global markets (Beyers, 1991; Cohen, 1981; Leo and Philippe, 1991). In these areas, business volatility--changes in total employment due to births and deaths, expansions and contractions of business enterprises--correlates with economic growth (Reynolds and Maki, 1990).

Vulnerable rural areas of metropolitan-focused regions are, in large numbers, transitory. Those close to metropolitan core area experience economic and social pressures of rapid population growth. A new locational equilibrium for manufacturing enterprise, driven by lower site and production costs, transforms many rural communities into the expanding urban frontier of the metropolitan core area (Scott, 1988).

Key players in the new "connectivity" games are the "knowledge workers." They reside in every rural and urban population center with public libraries and educational institutions. They serve as information specialists and managers of information resource offices and systems.

University extension offices and post-secondary education institutions, particularly, cater to the information needs of local residents--households, businesses and government agencies. However, additional training and experience are essential (like the three year apprenticeships now offered by one "high-tech" management consulting firm in the Minneapolis-St. Paul Metropolitan Area).

## **VULNERABLE RURAL ECONOMIES: CASE STUDIES**

### **Minnesota**

One of the two case studies of vulnerable rural economies is in Cook County, Minnesota in the extreme Northeast corner of Northeast Minnesota bordering Canada to the North and Lake Superior to the South. A vibrant and growing tourism-recreation industry exists in Cook County. New outdoor recreation attractions account for the most recent increases in visitors to Cook County from both Canada and the US. Its

geographic location in the Northeast corner of the Arrowhead Region, sharing a common boundary with Canada, offers unique opportunities for a wide range of recreation site investment and development.

**Economic and demographic trends.** The natural resources orientation of Cook County shapes its economic trends. More recently, the County served as place of residence of many of its people commuting to jobs outside the County, particularly at construction sites.

Cook County continued to experience slow growth through the 1980s in both employment and personal income (Table 2). Employment grew by 1.6 percent annually from 1980 to 1985. The employment growth rate increased slightly during the 1985 to 1988 period to a 1.8 percent annual change. Incomes grew annually by 5.1 percent from 1980 to 1985 and increased considerably faster from 1985 to 1988 at 7.3 percent. Population during the entire period remained almost unchanged.

Table 2. Cook County economic and demographic trends, 1980-1988

Indicator	1980	1985	% Change 80-85	1988	% Change 85-88
Population (no.)	4,100	4,100	0.0%	4,077	-0.6%
Employment (no.)	1935	2096	1.6%	2214	1.8%
Personal Income (\$1000)	\$20,178	\$25,877	5.1%	\$31,969	7.3%

The Cook County economy continued to experience slow growth through the 1980s in both employment and personal income. Employment grew by 1.6 percent annually over the 1980 to 1985 period, and by 1.8 percent during the 1985 to 1988 period. Total personal income increased at an annual rate of 5.1 percent from 1980 to 1985. It increased by 7.3 percent from 1985 to 1988. During the same period, the Consumer Price Index increased by less than four percent annually. Total population during the entire eight-year period remained virtually unchanged.

**Export base analysis.** One measure of the changing character of the Cook County economy is the above-average labor earnings derived from a given local industry. The excess earnings figure measures the extent to which a given industry contributes to the region's export trade with the rest of Nation and rest of World.

An industry accounts for a part of the base economy of a region when its excess earnings value is positive. A negative excess earnings correlates with an industry that produces less than local purchases. Imports into the region make up the difference between local purchases and local production.

All export-producing industry contribute to the economic base. The proportion that the excess

earnings of a given industry is of total excess earnings is a measure of the industry's importance in the local economy.

When the excess earnings of an industry increases more rapidly than total excess earnings, the industry becomes more important in the region. The region's economy becomes increasingly dependent upon the given industry.

Table 3 presents Cook County excess and total labor earnings for six tourism-related and three construction-related industry groups in Cook County. The third category--other industry--accounts for the largest share of the local economic base. Hotels and other lodging businesses account for the largest share of the tourism-related earnings.

**Table 3. Excess and total earnings of specified tourism related industry, Cook County, 1980-88**

Industry	Excess Earnings			Total Earnings		
	1980 (%)	1985 (%)	1988 (%)	1980 (mil.\$)	1985 (mil.\$)	1988 (mil.\$)
Hotels & other lodging	20.0	17.8	21.4	2.1	2.5	3.8
Amusement & recreation	0.2	1.2	4.2	0.1	0.3	0.9
Eating & drinking places	3.3	3.6	3.4	0.7	1.0	1.2
Food stores	3.2	3.5	3.0	0.6	0.8	0.9
Miscellaneous retail stores	2.0	1.8	2.8	0.5	0.7	1.0
Auto dealers & service	1.0	0.7	2.6	0.5	0.5	1.0
<b>Total tourism-related</b>	<b>29.7</b>	<b>28.6</b>	<b>37.4</b>	<b>4.5</b>	<b>5.8</b>	<b>8.8</b>
Heavy construction	5.1	5.6	4.4	0.7	1.0	1.0
General building constr.	5.1	7.1	4.1	0.9	1.3	1.2
Lumber & wood prod. mfg.	3.5	5.1	4.0	0.5	0.9	1.1
<b>Total construction-related</b>	<b>13.7</b>	<b>17.8</b>	<b>12.5</b>	<b>2.1</b>	<b>3.2</b>	<b>3.3</b>
Other industry	56.6	53.6	50.1	13.6	16.9	19.9
<b>All industry</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>20.2</b>	<b>25.9</b>	<b>32.0</b>

Recreational related sectors have exhibited significant growth. Total labor earnings of the six tourism-related industry groups in Cook County increased from \$4.5 million in 1980 to \$8.8 million in 1988. During the same period, total labor earnings of the three construction-related industry groups increased from \$2.1 million to \$3.3 million. Meanwhile, total labor earnings for all other local industry increased from \$20.2 million to \$31.1 million.

The tourism-related industries are hotels and other lodging, amusement and recreation services, food stores, eating and drinking places, other retail trade, and automobile dealers and garages. The construction-

related sectors--heavy construction, general building construction, and lumber and wood products manufacturing--are important in the economic base in Cook County and in tourism-related private and public facilities development. Altogether, the nine industry groups accounted for 43.4 percent of the base economy in 1980 and 49.9 percent of the base economy in 1988. They thus represent an increasingly larger share of the local base economy and account for an increasingly larger share of total earnings and employment in Cook County.

Total labor earnings of the six tourism-related industry groups in Cook County increased from \$4.5 million in 1980 to \$8.8 million in 1988. During the same period, total labor earnings of the three construction-related industry groups increased from \$2.1 million to \$3.3 million. Meanwhile, total labor earnings for all other local industry increased from \$20.2 million to \$31.1 million. The reported increases in labor earnings originated from the export-producing and the residentiary portions of each industry group.

Tourism-related activities account for the recent resurgence of job and income growth in Cook County. Demand for the goods and services produced by the export-producing sectors "drives" local economic growth. For the most part, however, the recent surge of local economic growth is tourism-related, including new construction.

The export-producing industry groups account for most of the reported labor earnings and employment in Cook County. Each industry in this group also includes a large residentiary component. Much of the production of the export-producing industry group goes to local markets, as well as export markets, both intermediate and final. Commodity sales to the local producing sector represent the local intermediate market, which is the fastest growing market for most metropolitan area economies.

For Cook County, industry input purchases from local sources are small compared to metropolitan areas. However, expansion of tourism-related retail trade and consumer services represents a growing local intermediate market for business and other producer services. Sector 1 industry groups are most likely candidates for an export promotion strategy of local economic development.

Total production of goods and services that is less than total local commodity demand, both intermediate and final, in the wholly residentiary industry groups. Sector 2 industries are most likely opportunities for import substitution as a form of local business expansion.

Aggressive product development strategies among some Sector 2 industries can result in excess production that competes successfully, first, with local imports and, eventually, with imports into other regions. A tourism-related business service, for example, may have among its first customers local trade and service establishments. Experience gained in serving local customers successfully builds expertise for serving a larger and geographically dispersed clientele. Construction of a new airport in Grand Marais should help in reaching new markets.

The Sector 3 industry group (Industry 47 to Industry 76) includes all industries found in the US economy but not in Cook County. A small local market and a peripheral geographic location preclude much new business development occurring among Sector 3 industry groups.

The export-producing industry groups account for most of the reported labor earnings and employment in Cook County. Each industry in this group also includes a large residentiary component. Much of the production of the export-producing industry group ships to local markets, as well as export markets, both intermediate and final. The local intermediate market moves commodity sales to the local producing sector, which is the fastest growing market for most metropolitan area economies.

The largest growth in the Cook County economy since 1980 occurred in the tourism-related industry groups, particularly hotels and other lodging places, eating and drinking places, automobile dealers and garages, and amusement and recreation services. Each of the tourism-related industry groups is an increasingly important part of the economic base of Cook County. The growing tourism market, which extends from Northeast Minnesota to the larger metropolitan concentrations in US and Canada, is being tapped by the large golf course and related condominium developments cited earlier

**Tourism-related industry.** Table 4 lists the total employment--wage and salary workers and self employed--associated with each of the nine industry groups in Table 2. Total earnings per job show the wide range of earnings per job. For the industry groups with below-average earnings per job, the importance of the industry in the local economic base is larger when represented by total jobs than when represented by total labor earnings. The above-average increases in earnings per job result from a tight local labor market that lacks local housing for new residents employed in tourism-related businesses. Expansion of tourism-related activities would also increase the range of job choices and reduce the risk of unemployment for the new



residents.

**Table 4. Total earnings and earnings per job in specified tourism-related industry, Cook County, MN, 1980-88**

Industry	Total Jobs			Earnings per Job		
	1980 (no.)	1985 (no.)	1988 (no.)	1980 (thou.\$)	1985 (thou.\$)	1988 (thou.\$)
Hotels & other lodging	336	366	428	6.3	6.8	8.9
Amusement & recreation	25	47	102	4.0	6.4	8.8
Eating & drinking places	136	152	154	5.1	6.6	7.8
Food stores	68	74	74	8.8	10.8	12.2
Miscellaneous retail stores	76	76	94	6.6	9.2	10.6
Auto dealers & service	35	31	49	14.3	16.1	20.4
<b>Total tourism-related</b>	<b>676</b>	<b>746</b>	<b>901</b>	<b>6.7</b>	<b>7.8</b>	<b>9.8</b>
Heavy construction	40	55	52	17.5	18.2	19.2
General building constr.	60	90	73	15.0	14.4	16.4
Lumber & wood prod. mfg.	49	83	66	10.2	10.8	16.7
<b>Total construction-related</b>	<b>149</b>	<b>228</b>	<b>191</b>	<b>14.1</b>	<b>14.0</b>	<b>17.3</b>
Other industry	1110	1121	1126	12.3	15.1	17.7
<b>All industry</b>	<b>1935</b>	<b>2095</b>	<b>2218</b>	<b>10.4</b>	<b>12.4</b>	<b>14.4</b>

Negative values may occur in the labor earnings series because of the inclusion of proprietary income that adjusts for indirectly derived capital consumption allowances. In some years, the capital consumption allowance may exceed the self-employed income allocations in lieu of wage and salary payment

In the local base economy, the tourism-related industry groups show the largest and most stable economic growth. For many other industry groups, the excess earnings values are negative or declining. Currently, other economic opportunities in the region are lacking. This lack of additional job openings in the local economic base further magnifies the importance of the tourism industry in strengthening the Cook County economy.

This brief analysis of the tourism-related export base illustrates the importance of the activity to Cook County. The remainder of this report will assess the impact of expansion of the tourism related activities, particularly the Lutsen golf course, on individual sectors of the local economy.

**Local impact assessments.** The University of Minnesota IMPLAN regional economic modeling system provides the local impact assessments. The initial golf course construction, the visitor expenditures, the condominium construction, and the vacation home construction are the model inputs generating the total economic impact. Once the construction activity disappears, the economic effects dissipate. The golf course visitor effects are ongoing.

There are three types of effects on a local economy, the direct, indirect and induced effects. The direct effects are those that relate directly to expenditures. The indirect effects are the result of the directly effected business buying from other business to produce the demanded output. Both the direct and indirect effects create employment. These new workers come from outside the region, or from the unemployed. The induced effects are the economic impacts of the expenditures made by the new employees and their households.

Other factors also affect the Cook county economy. For example, a large proportion of visitors is from Canada--up to 40 percent by some accounts. Since Canadians need to stay overnight to purchase goods at lower duty, this market could become even more important.

A labor shortage, given the current prevailing wages, is imminent. This occurrence would require the importing of additional seasonal labor and increasing wages. Labor shortages may dampen the economic effects of the golf course expansion. In addition, there is a lack of housing for a seasonal labor force that results in added costs for local agencies.

### **Norway**

The Norway part of the two-country study centers on the municipalities of Grong and Overhalla in North-Trondelag County. In 1990 the total population of the two municipalities was 6265--2488 in Grong and 3777 in Overhalla. The two municipalities depend heavily on farm-generated sales and purchases of goods and services.

Grong and Overhalla are in North Trondelag County--a rural area characterized by an economic base of agriculture and agricultural processing, forestry and forest products processing, lumber and wood products manufacturing, pulp and paper manufacturing and selected trade and service industries catering to a small but growing numbers of visitors. In addition, a large oil well machinery manufacturing plant in Verdal exports its product to oil producers in the North Sea area and elsewhere.

**Economic and demographic trends.** North-Trondelag grew in total population from nearly 118 thousand in 1970 to nearly 126 thousand in 1980 and slightly more than 127 thousand in 1990. The total population increase in the 10-year period from 1980 to 1990 was less than 1.5 thousand.

The largest population center in the County is Steinkjer, located at the north end of the Trondheim Fjord. Steinkjer has four of the five modes of transportation--water, rail, truck and automobile. Trondheim, 80 miles South of Steinkjer, connects passengers from North Trondelag County with major air lines at Trondheim Airport, Vaernes.

Total employment in North Trondelag County increased slightly from 48.2 thousand in 1980 to 50.4 thousand in 1990. This is an annual rate of increase of only 0.5 percent, as shown in Table 5. Meanwhile total value of real production increased from 12 billion krone to 14.6 billion krone. This is a two percent annual rate of increase. All but the services sector dropped in total employment during the 1980-90 period, while all sectors increased real production. Service employment is the only increase in share of total employment--an increase from 52.8 percent to 58.9 percent of total employment.

**Table 5. Total employment and production in specified sectors, North Trondelag County, 1980, 1990 and projected 2000**

Sector	Employ		Prod		Prop Tot		Employ Change (pct.)	Product Change (pct.)
	1980 (no.)	1990 (no.)	1980 (mil.kr)	1990 (mil.kr)	1980 (pct.)	1990 (pct.)		
Primary Production	8449	7943	1887.8	2387.9	17.5	15.8	-0.6	2.4
Agriculture	7874	6275	1639.5	2085.7	16.3	12.5	-2.2	2.4
Construction	4566	4107	1553.6	1861.0	9.5	8.2	-1.1	1.8
Manufacturing	9713	8681	5024.0	5834.7	20.2	17.2	-1.1	1.5
Services	25447	29658	3562.7	4510.6	52.8	58.9	1.5	2.4
Total	48175	50389	12028.1	14594.2	100.0	100.0	0.5	2.0

Growth in output per worker accounts for the contrasting patterns of employment and production changes over the period from 1980 to 1990, as shown in Table 6. Output per worker grew at annual rate of 1.5 percent overall. It ranged from 0.8 percent for services to 4.8 percent for agriculture.

**Table 6. Output per Worker, Export Share and Base Share, North Trondelag County, 1980 and 1990**

Sector	OutperWork		Annual Change (pct.)	ExpShare 1990 (pct.)	BaseShare 1990 (pct.)
	1980 (thou.kr)	1990 (thou.kr)			
Primary Production	223.4	300.6	3.0	6.6	4.2
Agriculture	208.2	332.4	4.8	6.8	3.4
Construction	340.3	453.1	2.9	10.0	3.3
Manufacturing	517.2	672.1	2.7	81.6	56.4
Services	140.0	152.1	0.8	13.9	32.8
Total	249.7	289.6	1.5	39.3	100.0

**Export-base analysis.** The processing of agricultural products--largely dairy and meat--accounts for about one third of the manufacturing exports in 1990. Approximately 81.6 percent of all manufactured products were exports, which compares with only 6.8 percent of unprocessed agricultural products. Local

residents buy most of the services. However, purchase of services accounts for 32.8 percent of all basic income in 1990. The military base activities, federal administrative offices and education institutions supported by the federal government, account for an important part of the basic employment attributed to services..

Agricultural production throughout North Trondelag County depends on income payments from the federal government in Oslo. This makes a large part of the economic base vulnerable to sharp reductions in employment and production due to reduced government payments. The federal government expenditures in North Trondelag County helped build an infrastructure of private services that can serve a future replacement industry in the County's economic base.

The most intractable problems are the lagging productivity in the fast growing services sector and the loss of jobs in the high productivity growth sectors. This means less capacity to support continuing growth in local wages and salaries and, hence, local purchasing power. Lagging overall productivity adds to the County's economic vulnerability.

#### **DEVELOPMENT STRATEGY OPTIONS: LOCAL INITIATIVES TO ENHANCE BUSINESS LINKAGES**

##### **Education and Training**

First among local development initiatives is an education and training strategy to strengthen local business linkages. These linkages are backward to local primary and intermediate input sources and forward to local and export markets for each business and industry. Such a strategy would address any local mismatch of available labor supplies with available and potentially available job openings and the targeting of education and training programs to reduce the mismatch. It supports the efforts of an already trained and educated local work force to meet the qualifications of present and prospective job openings. Best available forecasts and projections of local economic trends--population, employment and income would document the likely demand for specific labor skills, by industry. Included for review in this strategy are:

1. Joint cooperative programs for input supplying and purchasing businesses to improve work place productivity and market performance of all participating businesses
2. Public-private partnerships in training of procurement and marketing personnel of export-producing businesses in area centers

3. Business education initiative by secondary and post-secondary educational institutions in area centers to facilitate the participation of production workers in productivity enhancing and quality improvement programs of export-producing manufacturing businesses

An example of new directions in public-private partnerships for facilitating the emergence of new intra-regional linkages, particularly that between periphery and core areas, is the "One Minnesota" Project. The Blandin Foundation of Grand Rapids, Minnesota funds this project. The Blandin Foundation has a strong commitment to the funding of studies on revitalizing rural communities in Minnesota and the Upper Midwest. It is in a rural community about 50 miles from a metropolitan area of nearly 100 thousand population and 150 miles from the Minneapolis-St. Paul metropolitan core area. The Blandin Company is a long-established manufacturing enterprise engaged in converting nearby forests in Northeast Minnesota into wood pulp and paper.

The first and second phases to the One Minnesota Project involve research and education efforts of a multi-disciplinary study team. The second phase involves the cooperation and active participation of businesses, post-secondary educational institutions, both public and private, and government agencies in a rural labor market area. Participants first establish ownership in the second phase activities by working together toward a common plan of action. Among the options included in such a plan are joint conferences, seminars, one-on-one consulting arrangements and other learning opportunities for new business enterprise.

A third or fourth phase of the One Minnesota Project lies ahead. Agreements among three colleges in the University of Minnesota and the 16 Regional Colleges of Norway set the stage. The Norway-Minnesota cross-country studies are joint ventures in sharing a common vision of the global community--a vision that acknowledges the role of both cooperation and competition in regional economic development. In this vision, economic units of all kinds cooperate within regions to successfully compete in global markets. Economic regions that enhance internal cooperation and linkages between their periphery and metropolitan core areas thus have a good chance of becoming the success stories of this new global community.

#### **Technical Assistance**

Technical assistance is job specific. It supports the efforts of local businesses to acquire information about new products and processes and markets for these products. Included for review in this strategy are:

1. Area business centers for training of small business staffs in the retrieval and use of information and

data on new products and processes and market outlets for locally produced goods and services

2. Local library services for accessing product, process and market information and data sought by local export-producing businesses

### **Producer Services**

Producer services seek local intermediate markets--other businesses that in turn seek the producer services. Included in the producer services group are: transportation, communications, finance, insurance, real estate, personal supply, computer programming and other business services, legal services, and accounting, management, engineering, architectural and other professional services. Many producer services disperse throughout the State. Others concentrate in the downtown districts of metropolitan core areas.

Included for review in this strategy are:

1. Identification, location and listing of producer services for local business
2. Producer services information exchanges for facilitating access of small businesses to management, marketing, advertising, architectural, accounting, engineering and other producer services

### **Business Networks**

Business networks link individual business to supply sources, product distributors, market outlets, legislative committees, and other businesses seeking alliances of one form or another. Included for review in this strategy are:

1. University and college business extension services for organizing manufacturing, producer services, and related business networks
2. Area business association for organizing social networks of technical and professional workers in technology-intensive industries

### **Community Organization**

Community organizations are important stakeholders in efforts to strengthen business linkages. They also contribute to improvements in the quality of community life. Included for review in this strategy are:

1. Community support of civic and cultural organizations and institutions that enhance the quality of life of local residents and help stabilize local neighborhoods as well as reduce the departure of skilled work force seeking superior amenities and educational and recreational opportunities
2. Community extension programs for business retention and expansion
3. Post-secondary education institution initiative in providing daytime and evening extension programs

for upgrading work skills of local residents and business performance of local business leaders

## **DEVELOPMENT STRATEGY OPTIONS: LEGISLATIVE INITIATIVES TO ENHANCE BUSINESS LINKAGES**

### **Business Contracts**

Legislative initiatives refer to the efforts of municipal, county and federal legislative bodies to facilitate the strengthening of business linkages. Legislative initiatives may include the organization and funding of public and private agencies to:

1. Prepare model business contracts for a wide variety of business linkages that improve the productivity of business activity, particularly among export-producing businesses
2. Provide technical assistance and learning opportunities for small businesses to develop familiarity and expertise in the use of business contracts for marketing and procurement purposes

### **Manufacturing Networks**

Legislative initiatives may focus on value-added manufacturing industries for an area of primary production. Alternatively, they may focus on input-supplying manufacturing in a local peripheral area as supply sources for prime contractors in a metropolitan core area. Legislative initiatives may include the organization and funding of public and private agencies to:

1. Identify, locate and list manufacturing industry clustering--present and prospective--for use of resident manufacturing businesses in building productivity-improving and output expanding business linkages
2. Facilitate the forming of market and non-market linkages among businesses

### **Strategic Alliances**

Various industry councils promote strategic alliances among their members. Interested parties may seek enabling legislative to assure the legality of their efforts. Legislative initiatives may include the organization and funding of public and private agencies to:

1. Identify, locate and document successful forms of strategic alliances among export-producing and small businesses
2. Establish industry councils among special commodity groups to further facilitate the learning of productivity-improving and output expanding linkages among businesses and the forming of strategic business alliances

## **Community Support**

Community support is vital to the success of any broad public effort to improve the local economic environment for existing and new businesses. Legislative initiatives may be important where communities lack successful programs for facilitating strong and productive business linkages. Legislative initiatives may include the organization and funding of public and private agencies to:

1. Identify, locate and document successful examples of community support of productivity improving and output expanding linkages among local business enterprises
2. Identify, locate and document successful examples of community support of business retention and expansion programs
3. Establish community centered committees of Strategic Alliances 2000--a "blue ribbon" commission to explore alternative economic futures for Minnesota and Norway communities

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