# Economic Development Framework
# of Small Communities in Canada

## Phase Two:
## Economic Clustering Approaches for Small Communities

### Appendix B:
### Concentrations of Labour Force Activity

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## Concentrations of Labour Force Activity

In this appendix we describe the rationale used for identifying an appropriate measure of economic activity classification for small communities in rural Canada. While there are a variety of potential measurers, working with the Census makes good sense because it is universally accessible and because it is available consistently every five years. Information in the Census about the type of industry in which each person in the labour force is employed is particularly useful, but it does have some limitations. These include:

- the 1980 Standard Industrial Classification (SIC) is not available for each of the census years; for example, in 1986 the data in both print and electronic form has been collapsed into fewer categories, including having all of the primary resource sector employment classified as one group;

- prior to the 2001 Census a decision was made to adopt the North American Industrial Classification System (NAICS), which also collapses the primary resource sectors into one group;

- it is not always possible to determine if labour force activity in some sectors is closely linked to others; for example, a person working in a fish processing plant would be classified as being in the manufacturing industry; however, in terms of understanding the concentration of economic activity in a community it would be useful to have this person classified in the fishing sector (but the fishing industry data from the Census is based on the primary resource activity of harvesting the fish and related activities, and not on the processing activity).

Despite these limitations, the labour force by industry type is the most readily available data for classifying communities into economic activities based on how many people work in a particular sector.

For the purpose of looking at the current economic activity of small communities, the 2001 Census is the most recent data. Custom tabulations of the 2001 Census data to convert the NAICS coded data to the SIC codes were used to obtain the breakout of data into each primary resource sector, and to ensure that there was some consistency in the classification coding with 1996 and 1991 census years (for phase 3 work examining changes over time).

The literature is not consistent in its treatment of defining what percent of the labour force employed in a given sector should be used as a threshold or as a cutoff for determining "concentration". Clemenson (1992) used 30% as a cutoff for rural communities in Canada. Elo and Beale (1985) used 20% for rural communities in the United States, as did Wilson (2004) in looking at mining communities in United States.

Using this 20% to 30% window as a starting point, we computed the percent of the labour force in each of the following sectors:

- agriculture
- fishing
- forestry
- mining
- tourism (accommodation, food, and beverage services)
- manufacturing
- dynamic services (transportation, communication, wholesale, finance, insurance, real estate, business services)
- non-market services (government, education, health, social services)

We also computed the percent of the population age 65 and over as a proxy for "retirement" communities as an economic activity.

A series of coding tests were administered to determine an appropriate "cutoff" for our population of small communities of 50 to 4,999 population with weak or no MIZ status. The iterations included assigning an economic activity to a community if it had 10% or more, 15% or more, 20% or more, 25% or more, and 30% or more, of its labour force in a given sector (and population 65 years of age or more). However, to accommodate the fact that some communities may have more than one concentration of economic activity, a community was classified as "dual specialization" if this was the case (for example, a community might have 25% of its labour force in agriculture, and another 25% in dynamic services). Similarly, if it did not have any concentrations at the chosen threshold, it was classified as "non-specialized). This approach is consistent with the work of Ehrensaft and Beeman (1992), and Randall and Ironside (1996). These authors emphasise that not all communities are easily classified into only type of economic activity.

The results of each iteration are show in Table B-1 for the entire population of 1432 communities (both weak and no MIZ communities, and all within the 50 to 4,999 population range). What happens as we increase the threshold (from 10% incrementally up to 30%) several things unfold:

- First, when the threshold is so low, many communities have at least 10% employed in at least 2 different sectors or 1 sector plus the retirement sector (10% or more of the population age 65 and over), so that unless one sector is so dominant that it suppresses everything else to below 10%, the result is very little specialization of economic activity under this criteria.

- Second, at the 20% threshold, many communities have at least 20% in one sector and employment in other sectors is spread thinly below the 20% mark. However, even at this threshold, there are still more than half the communities with at least 2 or more "dominant" sectors (763 in dual specialization).

- Third, at the 25% threshold, much of this "dual specialization" disappears, but one begins to see an increase (to 179) in the number of non-specialized communities (meaning that they have no sectors with at least a 25% concentration).

- Fourth, the 30% the threshold is quite high, and there are many communities (almost one-third) which have no specialization under this criteria. It is interesting to note, however, that there are still 144 communities which would be classified as dual specialization, even at this high threshold.

Table B-1 Economic Type of Community by % of Labour Force Employed in Specific Sectors (and % age 65+), All Communities, 2001

| Economic Type | Percent of Labour Force Employed in Sector | | | | |
|---|---|---|---|---|---|
| | 10% | 15% | 20% | 25% | 30% |
| Agricultural | 6 | 80 | 206 | 277 | 282 |
| Fishing | 4 | 6 | 14 | 19 | 25 |
| Forestry | 0 | 1 | 3 | 10 | 5 |
| Mining | 0 | 4 | 18 | 26 | 19 |
| Tourism | 2 | 4 | 11 | 15 | 11 |
| Manufacturing | 1 | 21 | 83 | 120 | 108 |
| Dynamic Services | 2 | 11 | 39 | 63 | 65 |
| Non-market Services | 34 | 95 | 230 | 306 | 293 |
| Retirement | 12 | 17 | 24 | 45 | 45 |
| Dual Specialization | 1367 | 1187 | 763 | 372 | 144 |
| Non-specialized | 4 | 6 | 41 | 179 | 435 |
| **Total** | **1432** | **1432** | **1432** | **1432** | **1432** |

Note: If a community has at least two sectors with 25% of its labour force employed in it, the community is classified in dual specialization only (it is not also classified in both of the sectors in which it has at least 25% of the labour force employed).
Source: Authors' calculations from: Statistics Canada. Census of Canada, 2001. Ottawa: Statistics Canada.

The same pattern emerges when we examine the change in classification controlling for communities with a population of 50 to 2,499 (Table B-2) and a population of 2,500 to 4,999 (Table B-3).

Table B-2 Economic Type of Community by % of Labour Force Employed in Specific Sectors (and % age 65+), Communities 50-2499 Population

| Economic Type | Percent of Labour Force Employed in Sector | | | | |
|---|---|---|---|---|---|
| | 10% | 15% | 20% | 25% | 30% |
| Agricultural | 5 | 73 | 194 | 260 | 266 |
| Fishing | 4 | 6 | 14 | 19 | 25 |
| Forestry | 0 | 1 | 2 | 9 | 5 |
| Mining | 0 | 3 | 13 | 21 | 14 |
| Tourism | 2 | 4 | 10 | 14 | 10 |
| Manufacturing | 1 | 20 | 75 | 113 | 102 |
| Dynamic Services | 2 | 10 | 36 | 62 | 64 |
| Non-market Services | 33 | 91 | 191 | 255 | 255 |
| Retirement | 12 | 17 | 23 | 43 | 44 |
| Dual Specialization | 1235 | 1067 | 704 | 352 | 144 |
| Non-specialized | 4 | 6 | 36 | 150 | 369 |
| **Total** | **1298** | **1298** | **1298** | **1298** | **1298** |

Source: Authors' calculations from: Statistics Canada. Census of Canada, 2001. Ottawa: Statistics Canada.

Table B-3 Economic Type of Community by % of Labour Force Employed in Specific Sectors (and % age 65+), Communities 2500-4999 Population

| Economic Type | Percent of Labour Force Employed in Sector | | | | |
|---|---|---|---|---|---|
| | 10% | 15% | 20% | 25% | 30% |
| Agricultural | 1 | 7 | 12 | 17 | 16 |
| Fishing | 0 | 0 | 0 | 0 | 0 |
| Forestry | 0 | 0 | 1 | 1 | 0 |
| Mining | 0 | 1 | 5 | 5 | 5 |
| Tourism | 0 | 0 | 1 | 1 | 1 |
| Manufacturing | 0 | 1 | 8 | 7 | 6 |
| Dynamic Services | 0 | 1 | 3 | 1 | 1 |
| Non-market Services | 1 | 4 | 39 | 51 | 38 |
| Retirement | 0 | 0 | 1 | 2 | 1 |
| Dual Specialization | 132 | 120 | 59 | 20 | 0 |
| Non-specialized | 0 | 0 | 5 | 29 | 66 |
| **Total** | **134** | **134** | **134** | **134** | **134** |

Source: Authors' calculations from: Statistics Canada. Census of Canada, 2001. Ottawa: Statistics Canada.

Given this pattern, our examination of the classification of small communities into economic activities **makes most sense at the 25% of labour force** (and of those age 65 and over) threshold. Reflecting on the distribution of communities at the 25% threshold, some interpretations and explanations for the "distribution" is required:

- First, many of the 108 manufacturing communities are likely related to a primary sector. Referring to Appendix D for a moment, which lists the communities by economic activity, some of these are in rural Newfoundland and Labrador, and are likely due to the presence of fish processing plants. Others are in rural New Brunswick, and are also likely due to the presence of fish processing plants, or agricultural processing plants.

- Second, the overall relatively low number of communities in the primary sector (other than agriculture) can be attributed to a number of factors. Over the years, the labour force in resource sectors has been shrinking, and thus fewer communities are at the 25% or more threshold, and they may in fact have more than 25% of the labour force working in another sector such as non-market services, or they may no longer have any specialization whatsoever (there will be more analysis of this in Phase 3 where we look at trends and trajectories over time).

- Third, the communities in our study are only those with a Weak or No MIZ status. There are many other small communities with a Strong or Moderate MIZ status which are not part of this study, which would be mining, forestry, and fishing communities.

- Fourth, the communities in this study are restricted to those with less than 5,000 population. There are other communities in the 5,000 to 9,999 population range which fall under the broad "rural and small town Canada" definition, which are excluded but which are also fishing, forestry, and mining communities.

Table B-4 provides a summary of the distribution of communities at this 25% threshold, by both MIZ and population clusters. There are relatively few variations in the distributions within each of these two clusters. However, there are relatively more agricultural and non-market services communities within the Weak MIZ group and relatively more dual specialization communities within the No MIZ group. There are relatively more agricultural and dual specialization communities within the population group 50-2,499, and relatively more non-market and non-specialized communities in the larger population group.

Table B-4 Distribution of Economic Type of Community by (25% or more of Labour Force Employed in Specific Sectors and % age 65+), Communities With Weak and No MIZ Status, and Communities 50-2499 and with 2500-4999 Population

|  | Total | | Weak MIZ | | No MIZ | | Less than 2500 | | 2500-4999 | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | # | % | # | % | # | % | # | % | # | % |
| Agricultural | 277 | 19.3 | 173 | 21.3 | 104 | 16.8 | 260 | 20.0 | 17 | 12.7 |
| Fishing | 19 | 1.3 | 10 | 1.2 | 9 | 1.5 | 19 | 1.5 | 0 | 0 |
| Forestry | 10 | .7 | 6 | .7 | 4 | .6 | 9 | .7 | 1 | .7 |
| Mining | 26 | 1.8 | 16 | 2.0 | 10 | 1.6 | 21 | 1.6 | 5 | 3.7 |
| Tourism | 15 | 1.0 | 5 | .6 | 10 | 1.6 | 14 | 1.1 | 1 | .7 |
| Manufacturing | 120 | 8.4 | 74 | 9.1 | 46 | 7.4 | 113 | 8.7 | 7 | 5.2 |
| Dynamic Services | 63 | 4.4 | 29 | 3.6 | 34 | 5.5 | 62 | 4.8 | 1 | .7 |
| Non-market Services | 306 | 21.4 | 203 | 25.0 | 103 | 16.6 | 255 | 19.6 | 51 | 38.1 |
| Retirement | 45 | 3.1 | 18 | 2.2 | 27 | 4.4 | 43 | 3.3 | 2 | 1.5 |
| Dual Specialization | 372 | 26.0 | 150 | 18.5 | 222 | 35.9 | 352 | 27.1 | 20 | 14.9 |
| Non-specialized | 179 | 12.5 | 129 | 15.9 | 50 | 8.1 | 150 | 11.6 | 29 | 21.6 |
| **Total** | **1432** | **100.0** | **813** | **100.0** | **619** | **100.0** | **1298** | **100.0** | **134** | **100.0** |

Source: Authors' calculations from: Statistics Canada. Census of Canada, 2001. Ottawa: Statistics Canada.