Big Data Big Ideas



Municipalities
Newfoundland and Labrador

Atlantic Canada Opportunities Agency
Agence de promotion économique du Canada atlantique

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THE HARRIS CENTRE
Memorial University

Harris Centre Regional Analytics Laboratory

The Harris Centre **R**egional **An**alytics **Lab**oratory (**RAnLab**) focuses on the use of regional economic and spatial analytics to quantitatively assess the capacity and sustainability of industries, labour markets and the population of places for the purpose of informing evidence based policies for regional development.

What we will do

Produce a regional economic profile of a region where we:

- Examine the value of connections between industries
- Assess the value of interactions between the population of the region's municipalities and other regions for services
- It is the first step in developing a strategic regional economic plan for development.
- Within this context RAnLab will use a quantitative approach that ensures an objective assessment of the local economies to produce an economic profile
- This profile will provide an insight as well as articulate the nature and of a region and their municipal economies

The Process

- MNL is partnering with RAnLab on a consistent, pre-determined package of analysis which can be applied to each region.
- It is hoped that municipalities will develop a collaborative, regional submission to gain access to the analysis.
- They will also be expected "**to pay a portion of the costs**" to complete the analysis.
- The submission process will be clearly communicated to municipalities and MNL staff will be available to work with them on their submissions.
- MNL will convene an advisory committee to review municipal submissions and advise on approval.
- Approval of the submissions will be done by MNL and RAnLab.

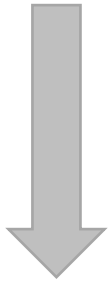
The Process

- The individual projects will include start-up meetings which will include municipal representatives, RAnLab staff and MNL staff.

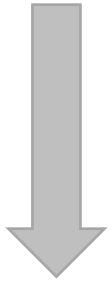
- These meetings will ensure clarity in the project's purpose and the expectations of those involved. MNL staff will maintain regular contact with the municipalities throughout the project.

- Once the report is generated for each region, a ground-truthing meeting will be held to ensure the municipalities understand the analysis and how they can use it in their planning as well as how it might be used to foster greater economic development collaboration.

Local Assets/Business Geo-Spatial Databases → Inventory → Regional Economic Analytics → Information

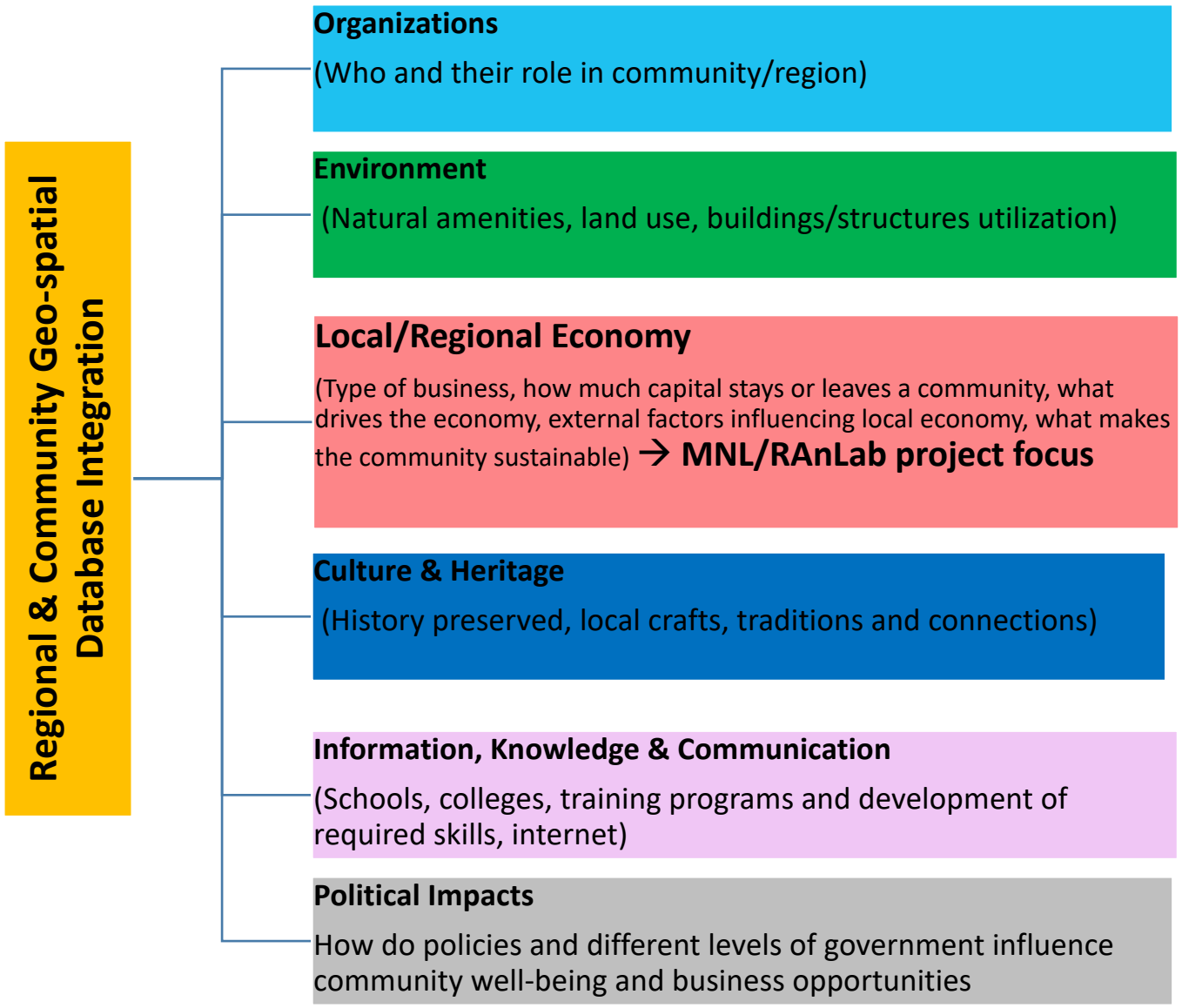


Evidence Based Analysis for Regional Economic Planning & Development Policies



Falls within SMART Cities/Towns Concepts

Collecting local data allows you to benchmark existing resources for analysis and planning



Helps to identify strengths, weaknesses, opportunities and dependencies on external factors

- Health Care
- Education
- Housing
- Transportation
- Child Care
- Emergency response
- Environment
- Governance
- Food
- Financial
- Recreation
- Employment
- Social services
- Utilities

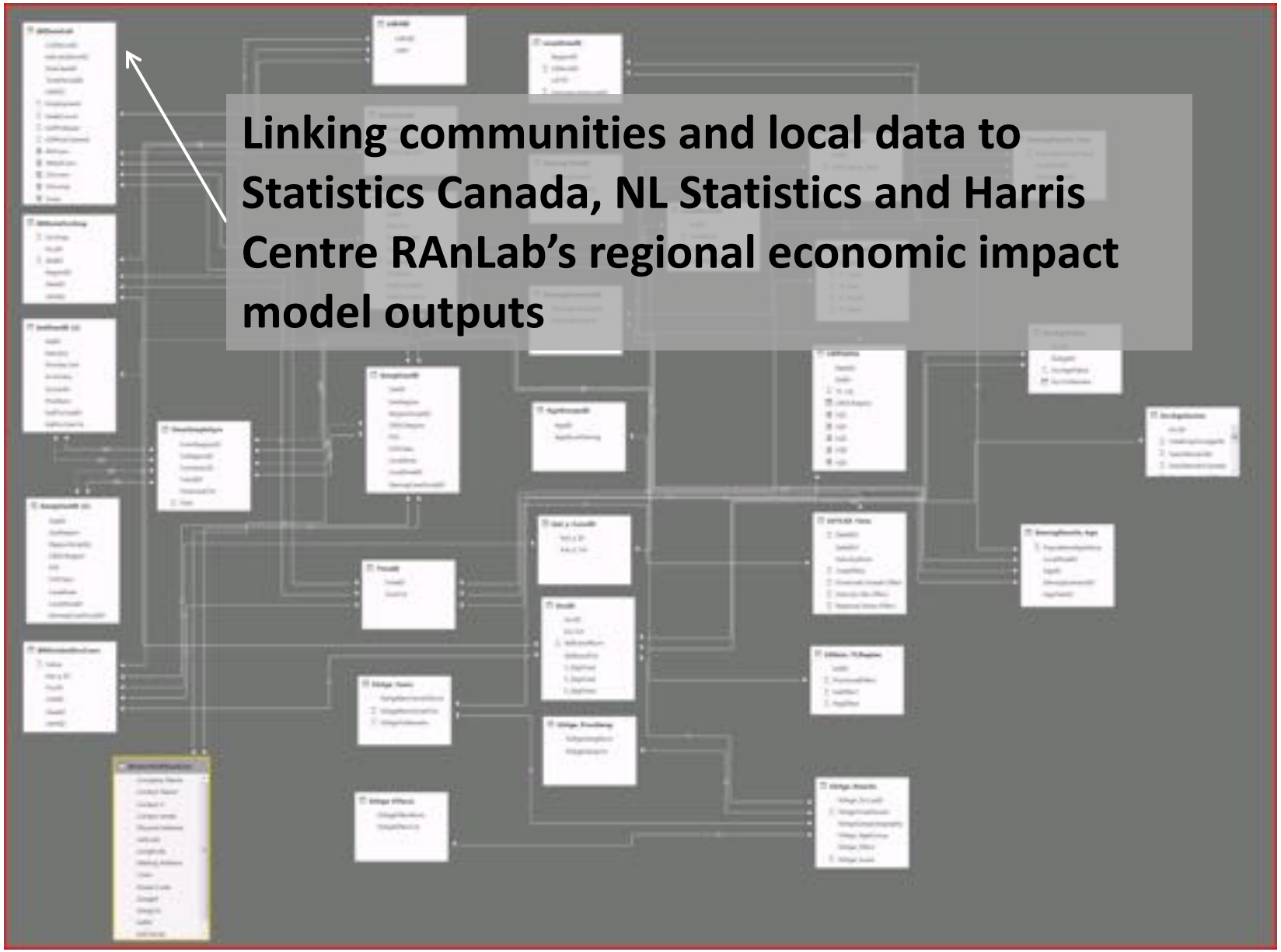
How we get local data.. with your help!

- If necessary a one page business survey
  - Information on nature and location of business
  - Number of full time, part time, seasonal part time employees
  - Months of operation
  - If non-profit (information on number of volunteers)
  - Identify location of markets (e.g. local, regional, provincial, exports, etc.)
  - Identify events that produce extra business opportunities

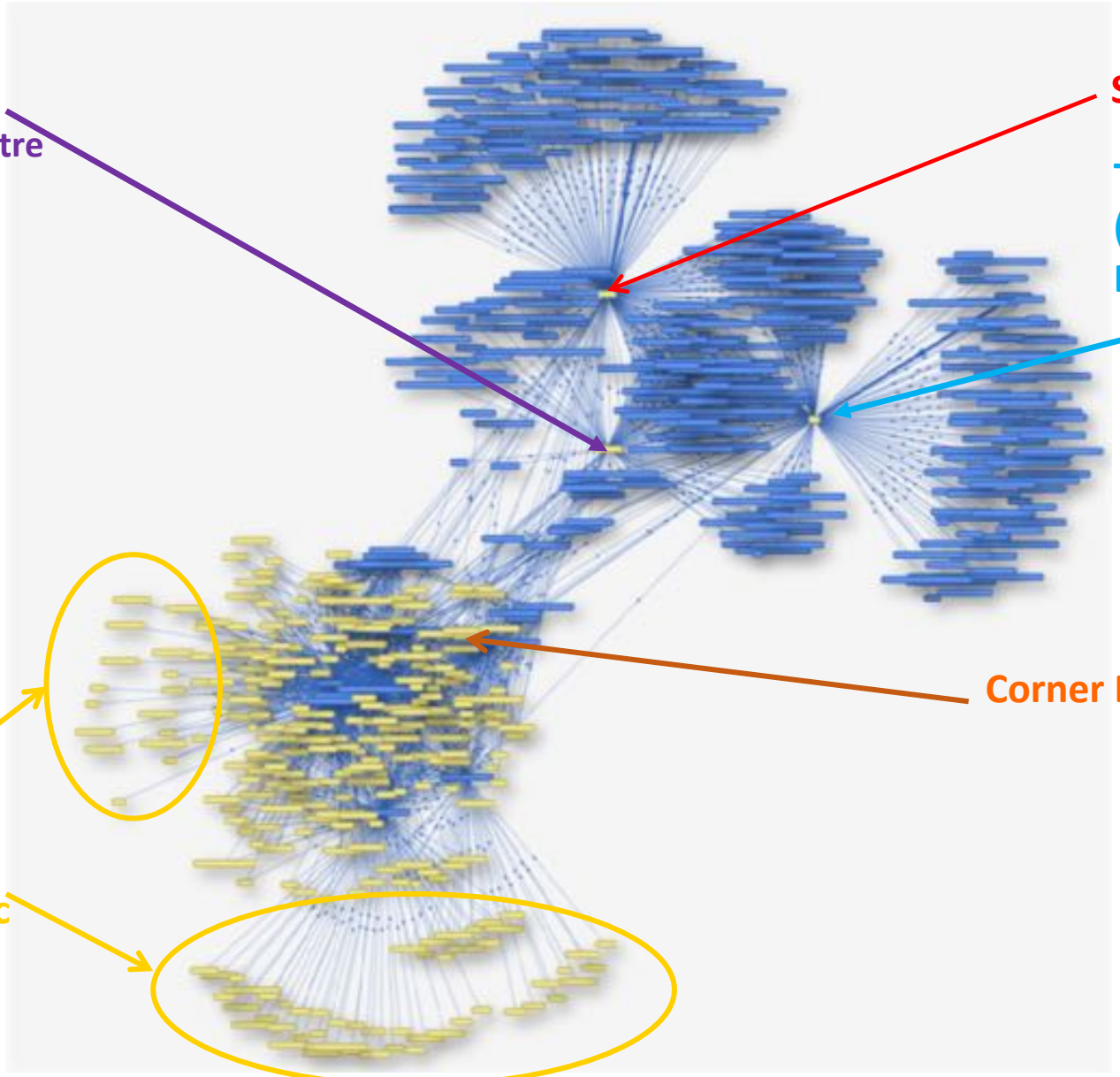
Data augmented by Statistics Canada Business Registry (2001 to 2017)/Census (2016) data and

Where possible community business list from municipal councils

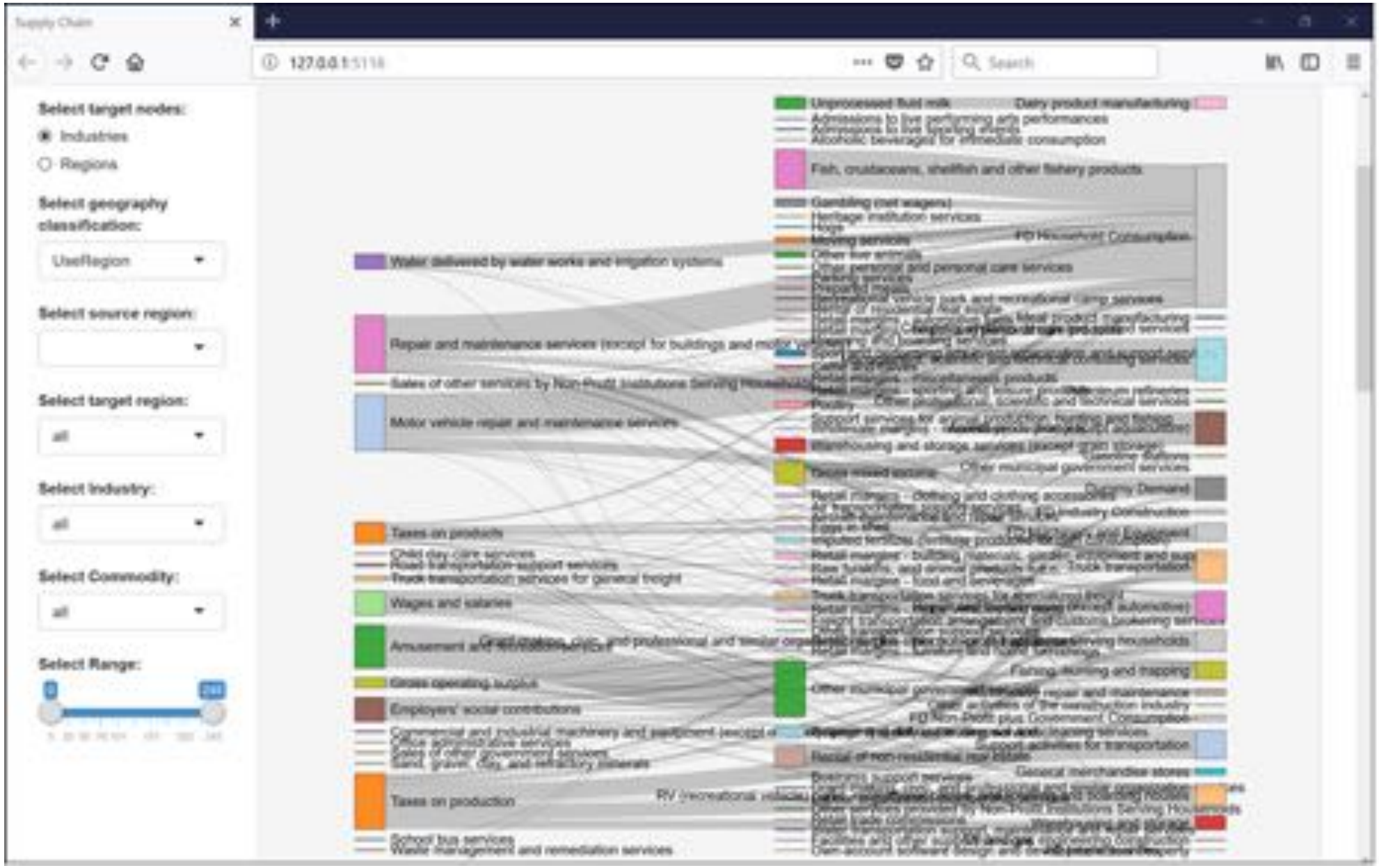
Data Warehouse, Database Organization and linkages



Another way to see linkages between places: The NL Commodity Supply Chain & It Is Complex



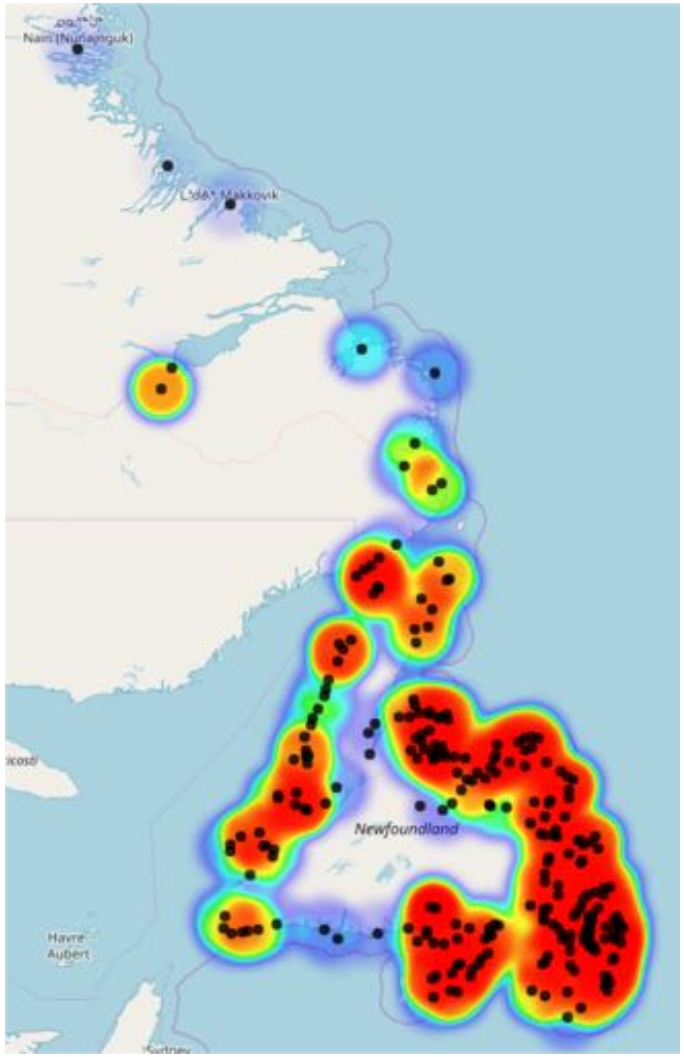
Eventually each community will be able to access information on economic linkages

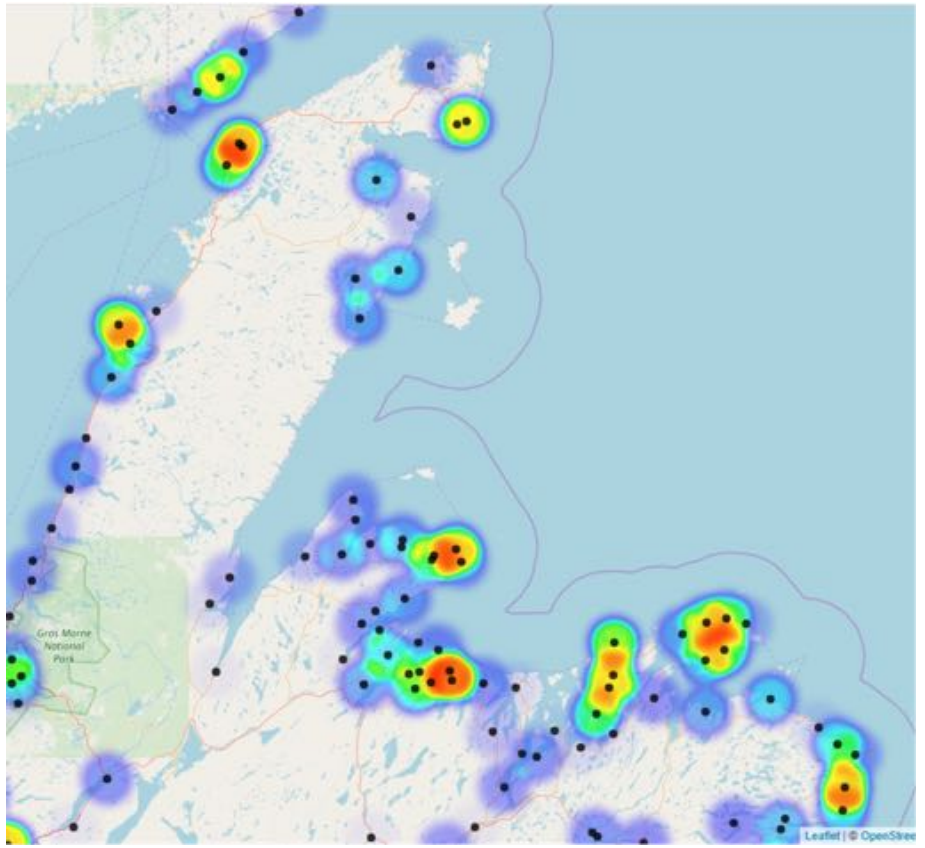


Distribution of fish, shellfish and other fish products $Value

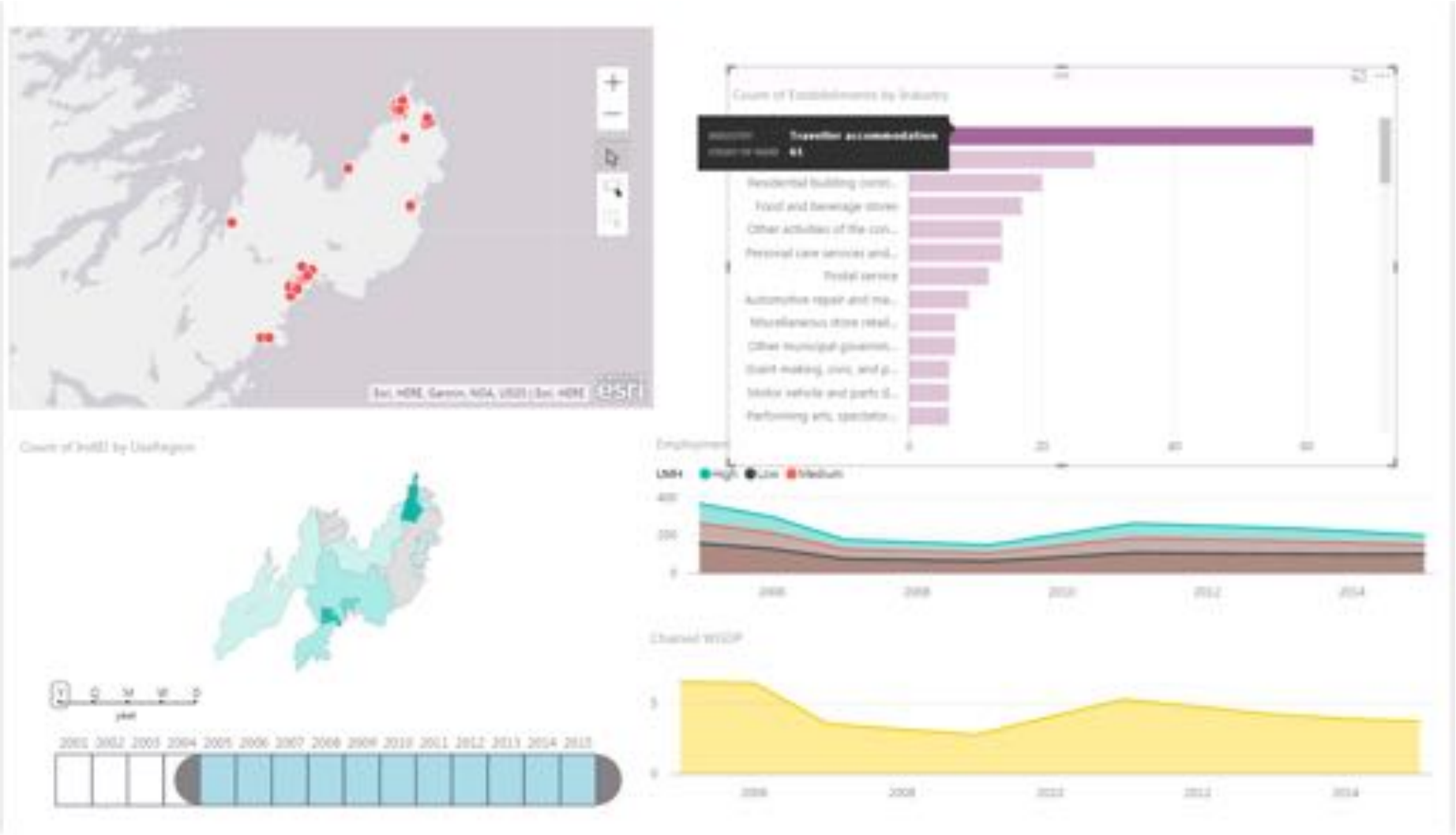
Importance of local data & knowledge:

Local data combined with Statistics Canada data helps to identify where commodities are located as well as identifying demand

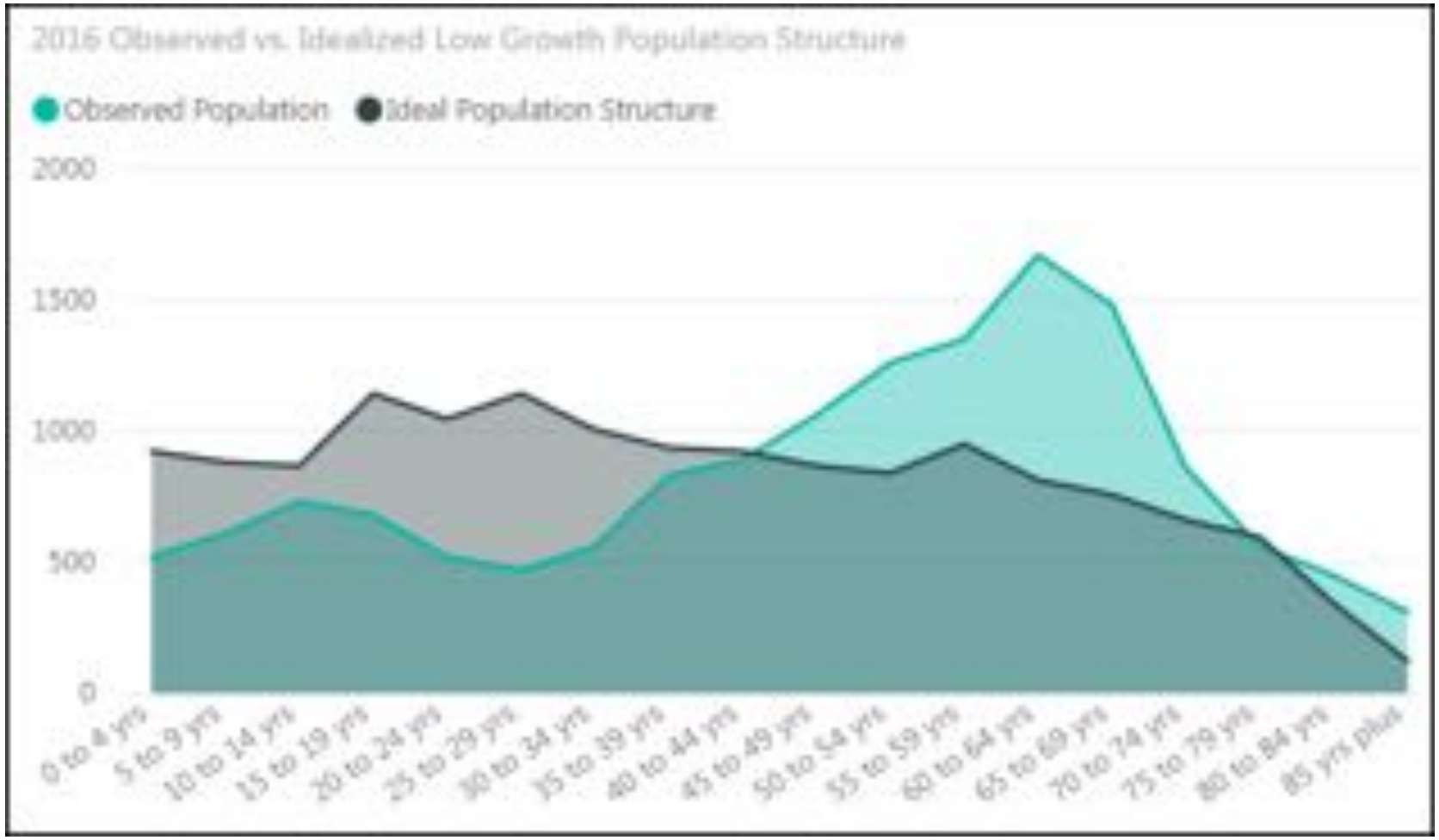




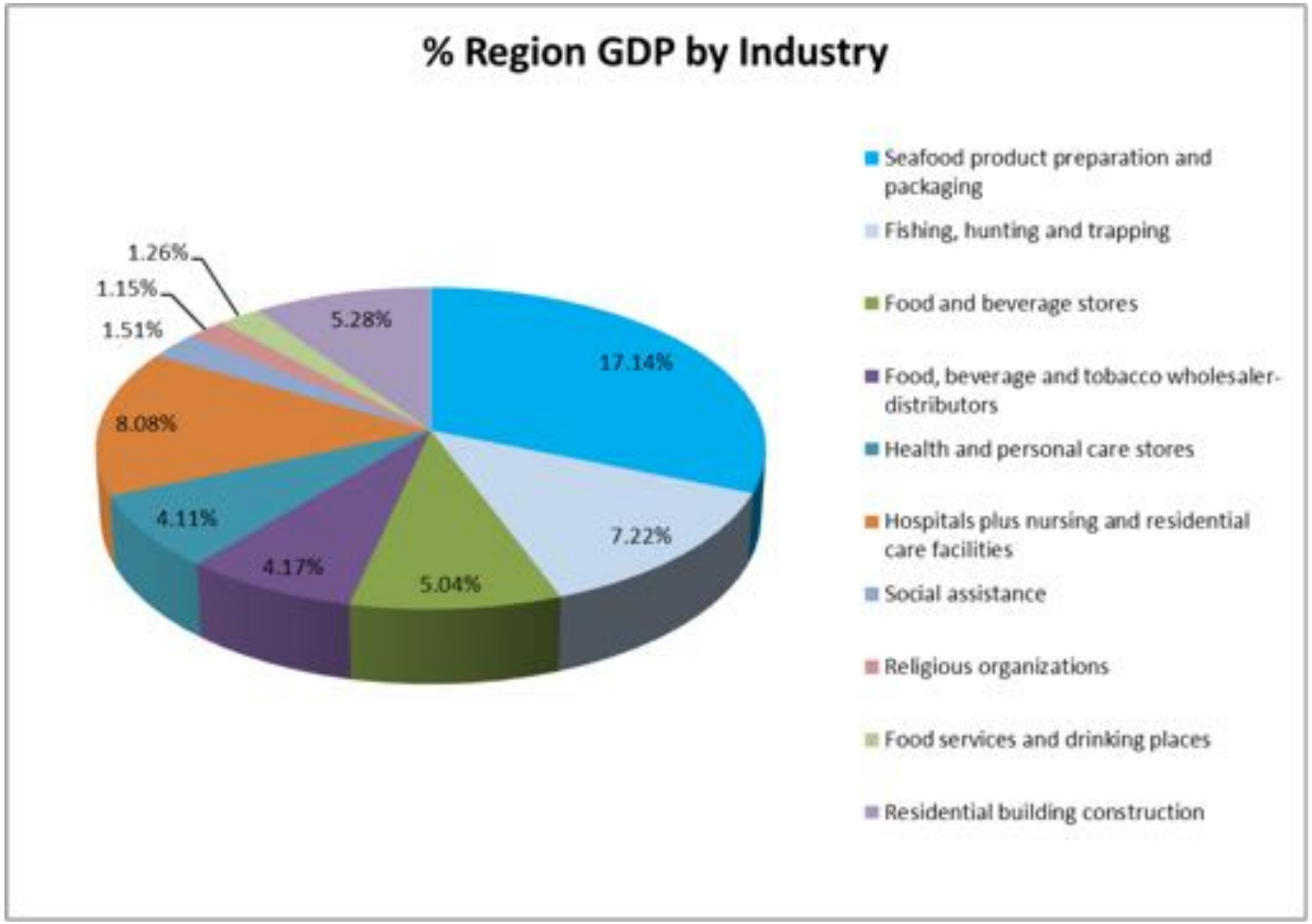
Eventually for each municipality data and analysis outcomes will be on a web application for quick access and updates



Demographic Analysis → identify growth and stress factors in the labour force and population..



Note smaller populations are not necessarily negative if economy is productive


% Region GDP by Industry
17.14%
7.22%
5.04%
4.17%
4.11%
8.08%
1.51%
1.15%
1.26%
5.28%
Seafood product preparation and packaging
Fishing, hunting and trapping
Food and beverage stores
Food, beverage and tobacco wholesaler-distributors
Health and personal care stores
Hospitals plus nursing and residential care facilities
Social assistance
Religious organizations
Food services and drinking places
Residential building construction

Regional Economic Capacity and Employment

% Local Industry Transactions (Purchases) with Other Industries - or Value Chain Linkages

Local supply % → backward multiplier → inputs for production
Local market % → linked to forward multiplier and local final demand

Industry	Average Est. Employment	GDP %	Local Supply Multiplier %	Local Market %
Seafood product preparation and packaging	1575	4%	55%	22%
Food services and drinking places	1105	3%	28%	100%
Food and beverage stores	740	4%	59%	97%
Fishing	693	3%	32%	40%
Other activities of the construction industry	593	6%	14%	79%

Local Industry Transaction Value

Industry	Supply Index	Market Index
Seafood product preparation and packaging	Above Average	Above Average
Food services and drinking places	Average	Above Average
Food and beverage stores	Average	Above Average
Fishing	Average	Above Average
Other activities of the construction industry	Below Average	Below Average

Industry Competition, Regional Advantages and Growth Factors

Industry	Comparative Advantage	Competition Level	Short Term Growth	Local Industry Trend	Prov. Industry Trend
Seafood product preparation and packaging	External Demand	Low Competition	Stable	Growing	Stressed
Food services and drinking places	Local Demand	High Competition	Stable	Growing	Growing
Food and beverage stores	External Demand	High Competition	Stable	Growing	Growing
Fishing	External Demand	High Competition	Stressed	Growing	Growing
Other activities of the construction industry	Local Demand	High Competition	Stressed	Growing	Growing

Advantage type, competition level, growth trends
Regional "Food services and drinking places"

Comparative Advantage	Local Demand
Competition Level	High Competition
Local Industry Trend	Growing
Provincial Industry Trend	Growing
Local Supplier Index	Average
Local Market Index	Above Average

→ Capacity to serve local demands associated with the region.

→ High level of competition suggest that any new entrants in the market would receive diminishing returns and market share.

→ Local and provincial long term industry trend (2009 to 2016) is **growth. Requires assessment and determine if "new enterprises" can take advantage of the provincial growth and its potential spillover effects**

→ Average and above average local market indices indicates significant $value transactions amongst this industry and other industries in the region. If employment is high this sector it should be monitored to track growth or decline.

Top 3 industry value linkages associated with food services and drinking places

Largest Industry Suppliers		
Industry	% of Total	Avg. Location
Meat product manufacturing	13%	External
Dairy product manufacturing	9%	External
Food, beverage and tobacco wholesaler-distributors	7%	Local

Largest Industry Markets		
Industry	% of Total	Avg. Location
FD Household Consumption	90%	...
Hospitals plus nursing and residential care facilities	2%	Local
Support activities for transportation	2%	Local

13% of purchases required for food services is sourced from meat product manufacturing and this is imported to the region. The 8% required from dairy product manufacturing is also imported. Reselling of imports produces less of an economic impact than those products or services that are produced in the region

From the market perspective 90% of product/services produced by food services industry is utilized by final demand. The avg. location (…) for these this market sectors is indeterminate (local and/or external). The local hospital accounts for 2%.

Employment trends, location quotient and comparative advantage

Industry	Food services and drinking places
Region	

Footprint					
Year	Employment (Low)	Employment (Medium)	Employment (High)	Establishments	LQ
Dec-01	395	662	928	97	0.76
Dec-02	386	628	869	86	0.73
Dec-03	397	656	914	86	0.78
Dec-04	344	576	807	88	0.69
Dec-05	338	551	763	72	0.74
Dec-06	342	548	754	63	0.79
Dec-07	314	506	697	60	0.75
Dec-09	369	603	837	65	0.95
Dec-11	365	587	809	53	0.97
Dec-13	553	881	1208	64	1.13
Dec-14	687	1074	1461	66	1.22
Dec-15	775	1210	1645	63	1.33
Dec-16	717	1112	1507	68	1.17

Concentration	Value	Class
HHiC	0.04	High Competition

← Competition Level

Shift Share (2009 - 2016)	
Provincial Effect	74
Industry Mix	132
Regional Effect	303
Total Change	509

← Shift-Share growth factors

The outputs from this project will include an overall report that explains the assumptions and interpretation as well as **limitations** associated with the methodology.

For the study area:

- Highlight the overall economic structure of the region and its municipalities and the value (dollars and jobs) of intra and inter regional economic linkages within a detailed regional economic profile.

- Identify the drivers of the regional economy and which industries are contributing to growth as well as identifying comparative advantages. This will include metrics that utilize within industry competition and economic diversity to identify potential and risks associated with local economies

- Where local data are available analyze and evaluate the local data on enterprises and describe how the information was integrated into the analysis

- Identify the potential intra and inter regional interactions in the region that are linked to each municipality and provide a dependency analysis by examining the final demand (how people spend their income through wages) characteristics of the economy**. This model will identify the capacity of the region to capture the economic benefits accrued from final demand factors.**

A comprehensive analysis is critical for identifying contributions, gaps and opportunities in local and regional economies

The long term plan is put this information online where communities and regions can access updated information and tools to assess opportunities and impacts of policies or strategies for development



THANK - YOU



QUESTIONS?

