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INSTITUT NATIONAL
DE SANTÉ PUBLIQUE
DU QUÉBEC

Centre d'expertise
et de référence

Development of a second generation deprivation index for Quebec

PHAC CCDSS Economic Cost of Chronic Disease Working Group
Meeting, Montreal

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BiESP BUREAU D'INFORMATION
ET D'ÉTUDES EN SANTÉ
DES POPULATIONS

*Institut national
de santé publique*
Québec 

Quebec Index of Multiple and Multidimensional Deprivation (QIMMD)

Aims

- Create an ecological index of multiple and multidimensional deprivation based on a conceptual framework and built of sub-indices
- These indices represent major dimensions of deprivation and include specific domains (sub-dimensions)
- Thus, they facilitate :
 - The calculation of dimension- and domain-specific deprivation, that is, one unique measure for each domain and dimension;
 - The calculation of multiple deprivation, that is, deprivation in more than one dimension or domain;
 - The calculation of a global deprivation measure, that is, several measures of dimension- and domain-specific deprivation combined into one measure.

What is deprivation?

- “Deprivation may be defined as a **state of observable and demonstrable disadvantage** relative to the local community or the wider society or nation to which an individual, family or group belongs.”
- The idea has come to be applied to **conditions (physical, environmental and social states or circumstances) rather than resources** and to **specific** and not only general circumstances...”
- (Poverty refers to the lack of resources.)

Townsend, 1987: 125

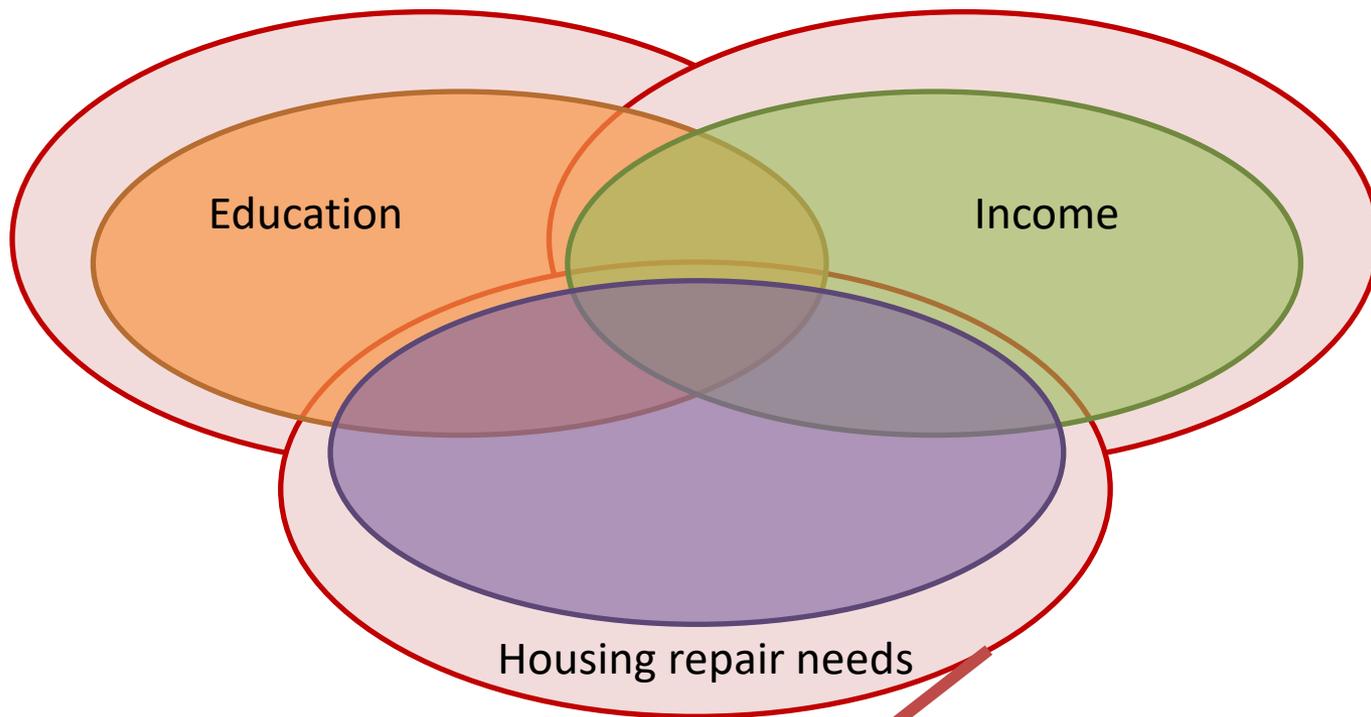
Association between deprivation and social determinants of health

Health inequalities stem from the “unequal distribution of power, income, goods, and services, globally, nationally and locally.”

The consequence is an “unfairness in the immediate, visible circumstances of peoples’ lives – their **access** to health care, schools, and education, their **conditions** of work and leisure, their homes, communities, towns, or cities.”

(WHO, Closing the gap, 2008)

Measurement of deprivation

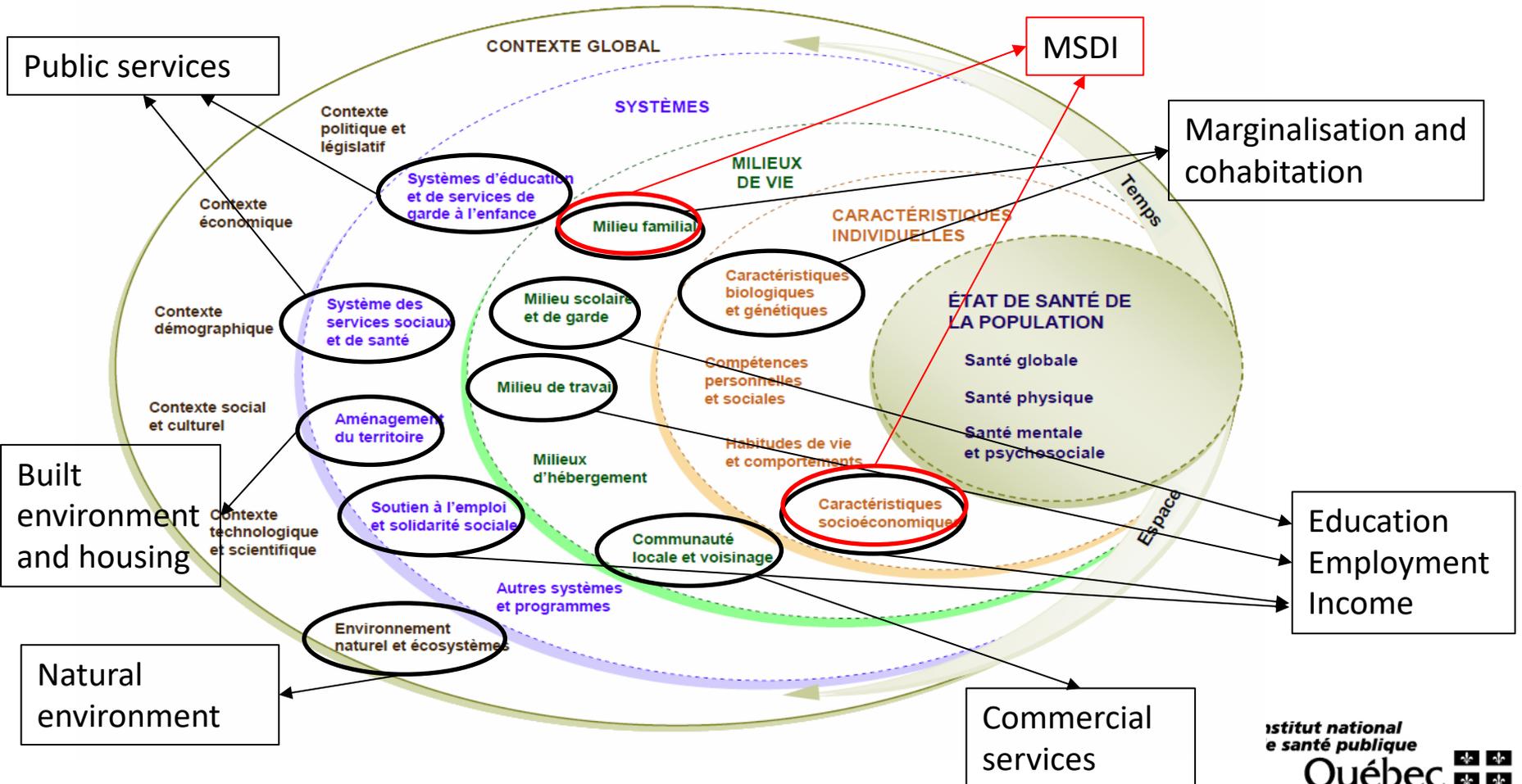


Deprivation (pink space including separate and overlapping dimensions)

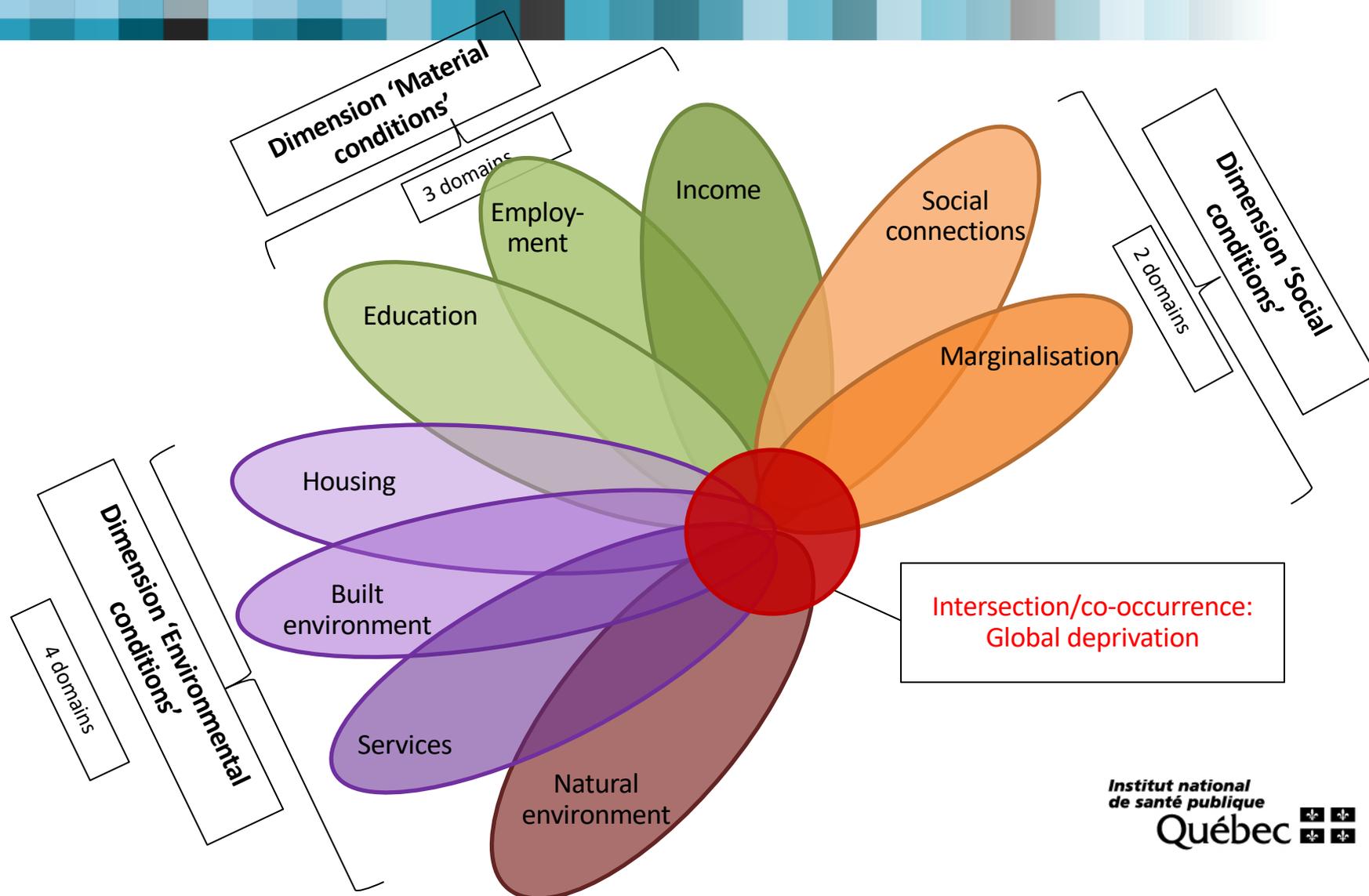


Determinants of health

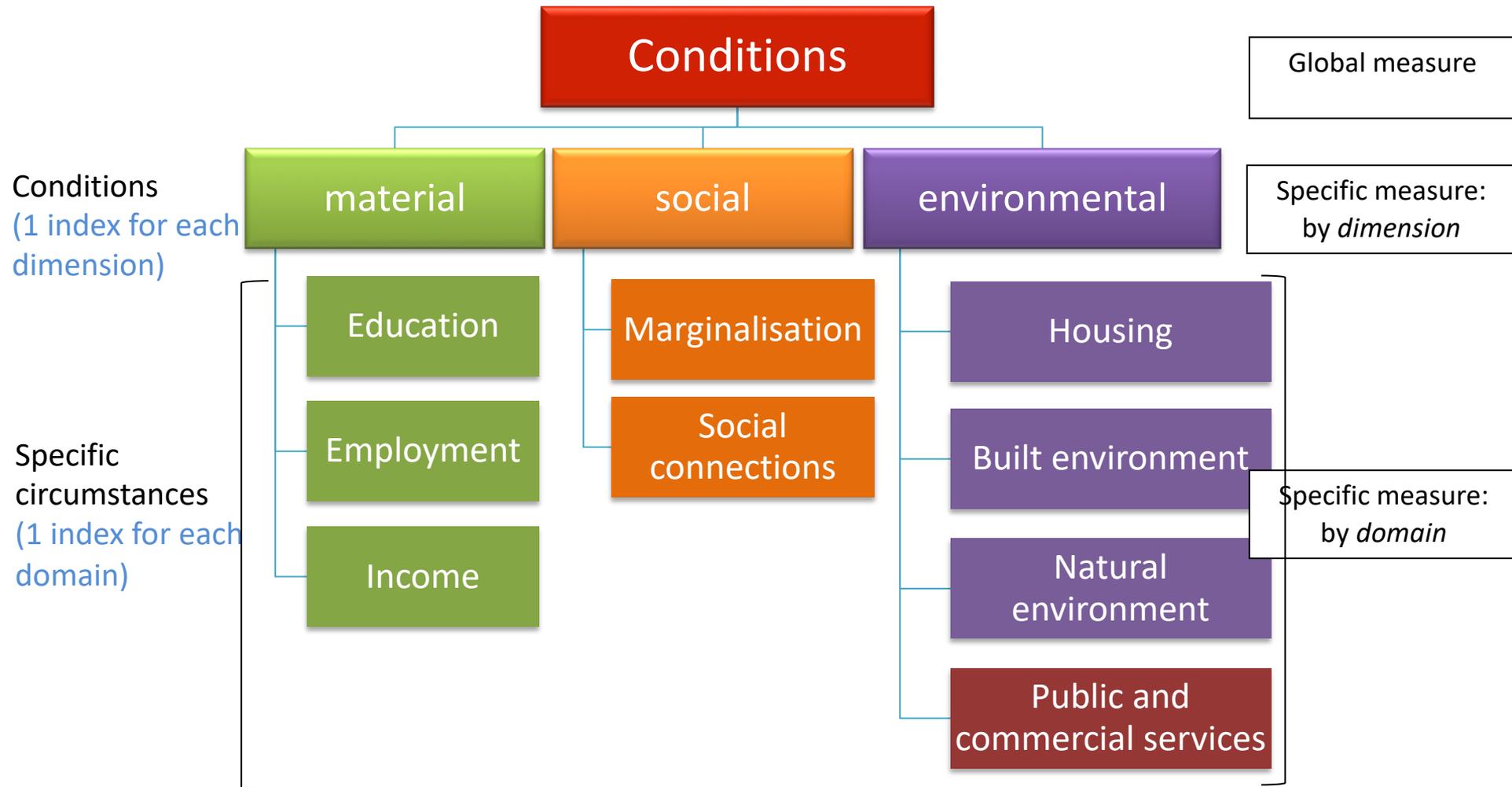
Figure 1 CADRE CONCEPTUEL DE LA SANTÉ ET DE SES DÉTERMINANTS



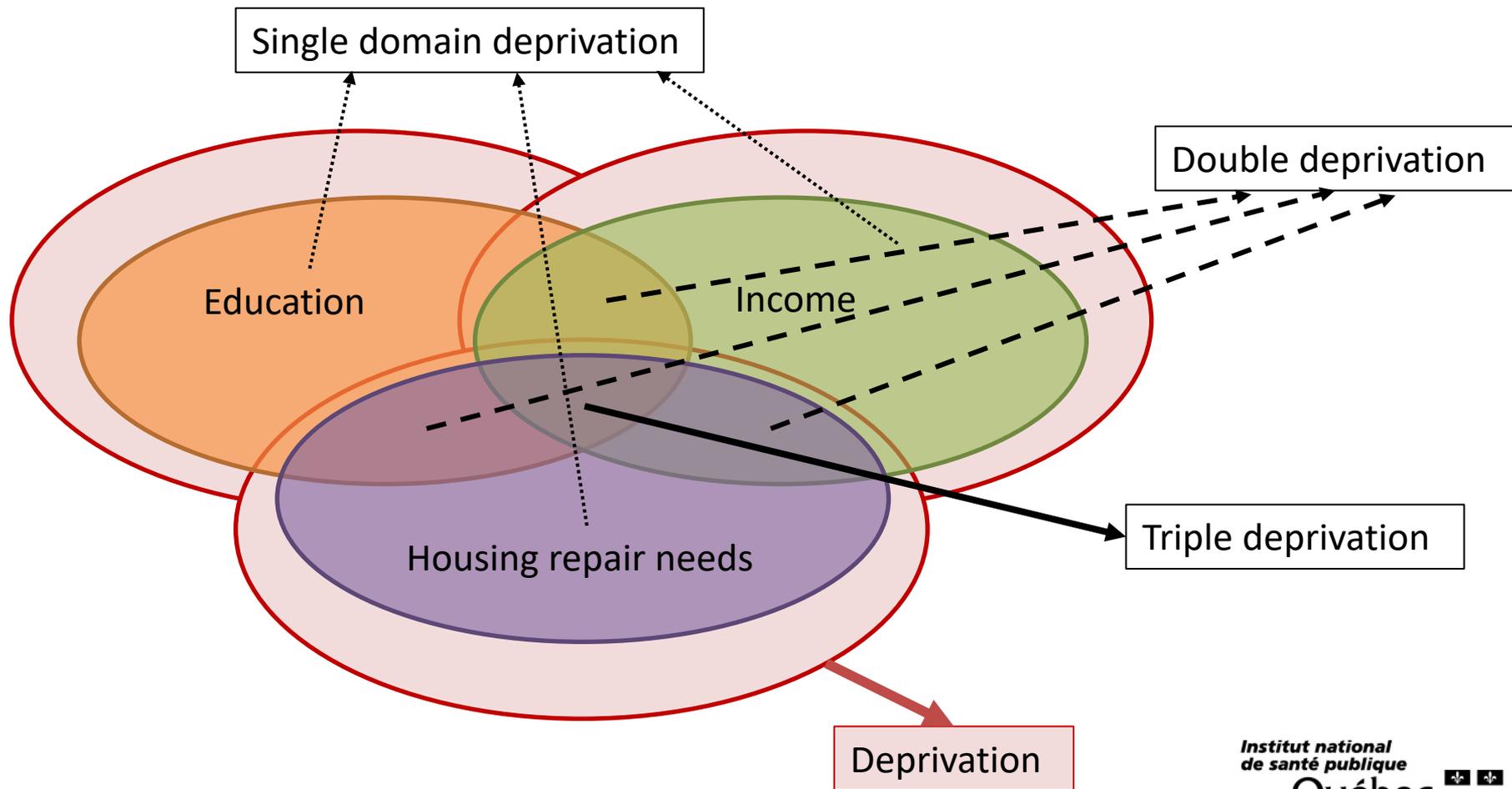
Dimensions and domains of the QIMMD



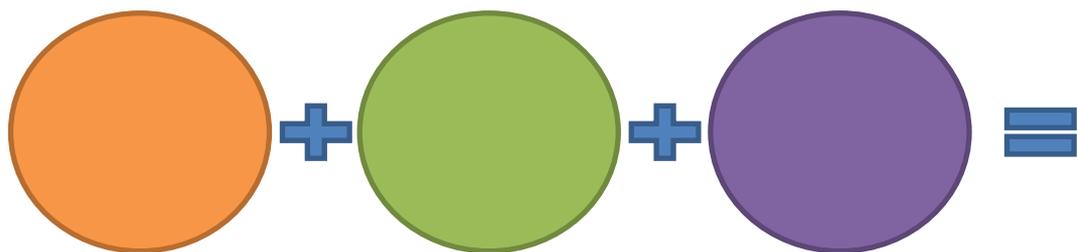
Sub-indices and measures



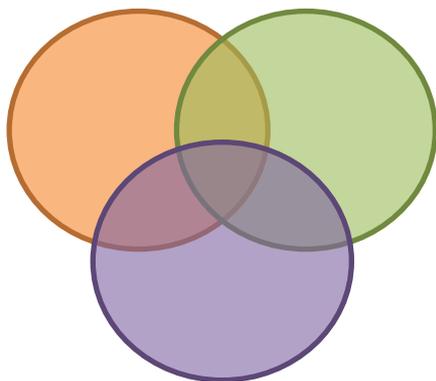
Measurement of deprivation



Suggested measures (*dimensions*)



Multiple deprivation
(number of dimensions: 0,1,2 or 3)

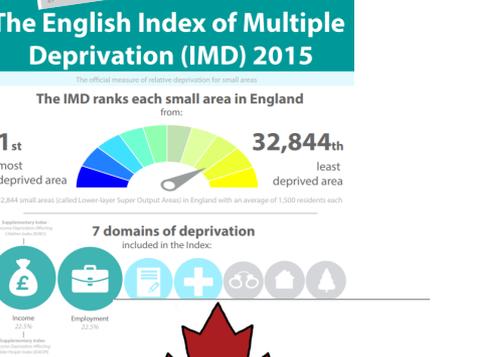
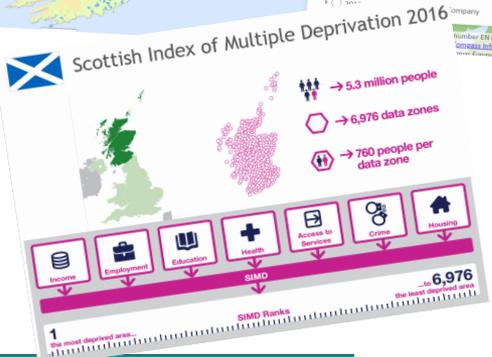
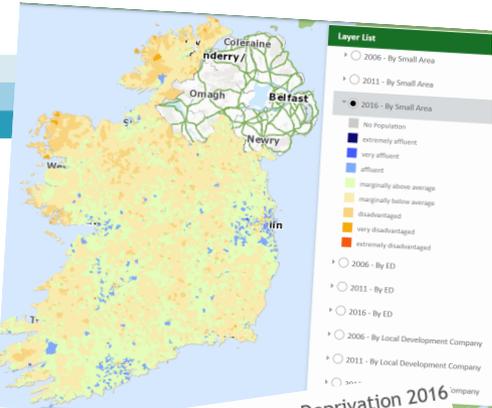


Multidimensional deprivation
(dimensions intersect)

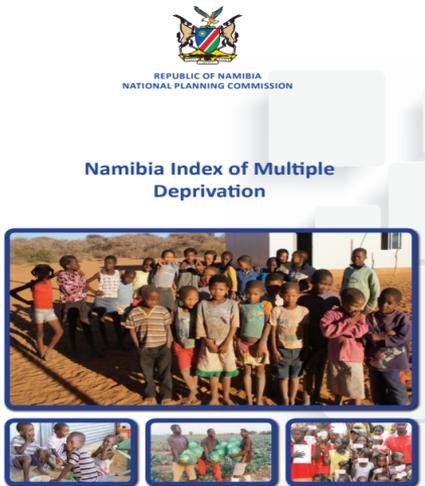
Comparaison MSDI and QMMDI

	MSDI	QMMDI
Represents	Deprivation defined as socioeconomic position (SEP) and lack of social network	Deprivation defined as deleterious living conditions and circumstances
Describes	Territory but often used as a proxy for unknown individual SEP	Territory. Still possible to be used as a proxy (material and social conditions which describe personal characteristics)
Distinguishes	Entire population	<u>Entire population</u> <u>Age groups</u> : minors/24-65/older persons <u>Gender</u> : men/women
Dimensions	2: material social	3: material social environmental
Domains	0:	9: Education Employment Income Social connections Marginalisation Housing Built environment Natural environment Access to public and commercial services

Models of multidimensional indices



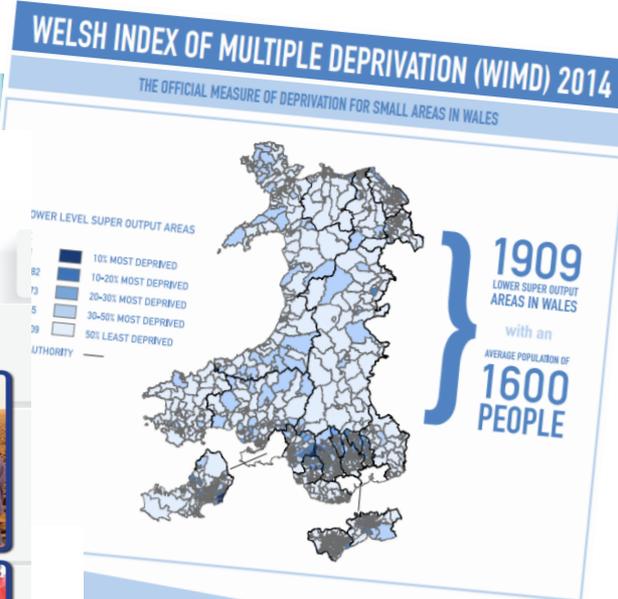
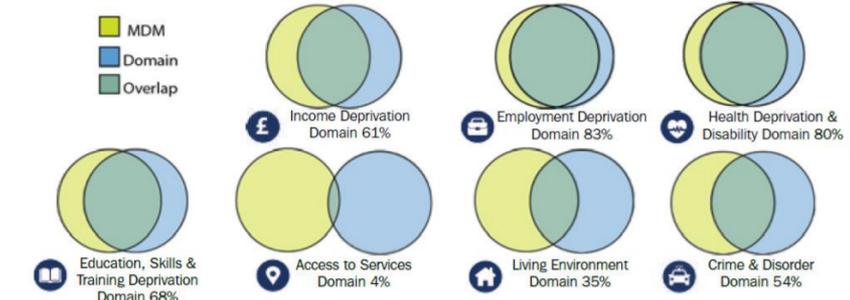
South African Indices of Deprivation



Namibia Index of Multiple Deprivation



Northern Ireland Multiple Deprivation Measures 2017



Indice di Deprivazione Multipla della Sardegna 2012



Existing multidimensional indices

[English Index of Multiple Deprivation \(IMD\)](#) (2000, 2004, 2007, 2010, 2015)

[Welsh Index of Multiple Deprivation \(WIMD\)](#) (2000, 2005, 2008, 2011, 2014)

[Scottish Index of Multiple Deprivation \(SIMD\)](#) (2003, 2004, 2006, 2009, 2012, 2016)

[North Ireland Multiple Deprivation Measure](#) (2001, 2005, 2010, 2017)

[South African Indices of Deprivation \(SAID\)](#) (2001, 2007, 2011)

[Namibian Indices of Deprivation](#) (2010)

[Sardinia](#) (2012)

[HP Deprivation Indices](#) (2005, 2008, 2010, 2011, 2012, 2014, 2017)

[All-Island HP Deprivation Index](#), (North Ireland and Republic of Ireland, 2011)

[Canada Marginalization Index \(CAN-Marg\)](#) (2001, 2006)

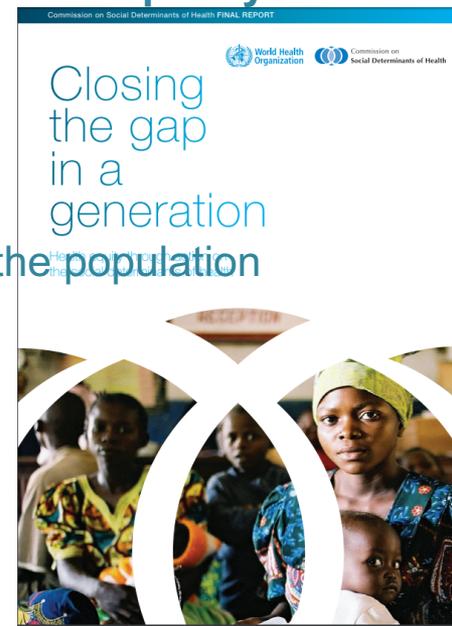
Second generation deprivation indices

History

- New Labour government in the UK (1999) with the demand for evidence based policy to tackle deprivation
- **Change in official attitudes to the sharing and availability of state held official data**
- Development of domains grouping indicators together to classify different experiences of deprivation
- Commission and adoption of the Indices of Multiple Deprivation as an **official policy tool** by government and their agencies
- Indices of Multiple Deprivation (IMD) from 2000 onwards

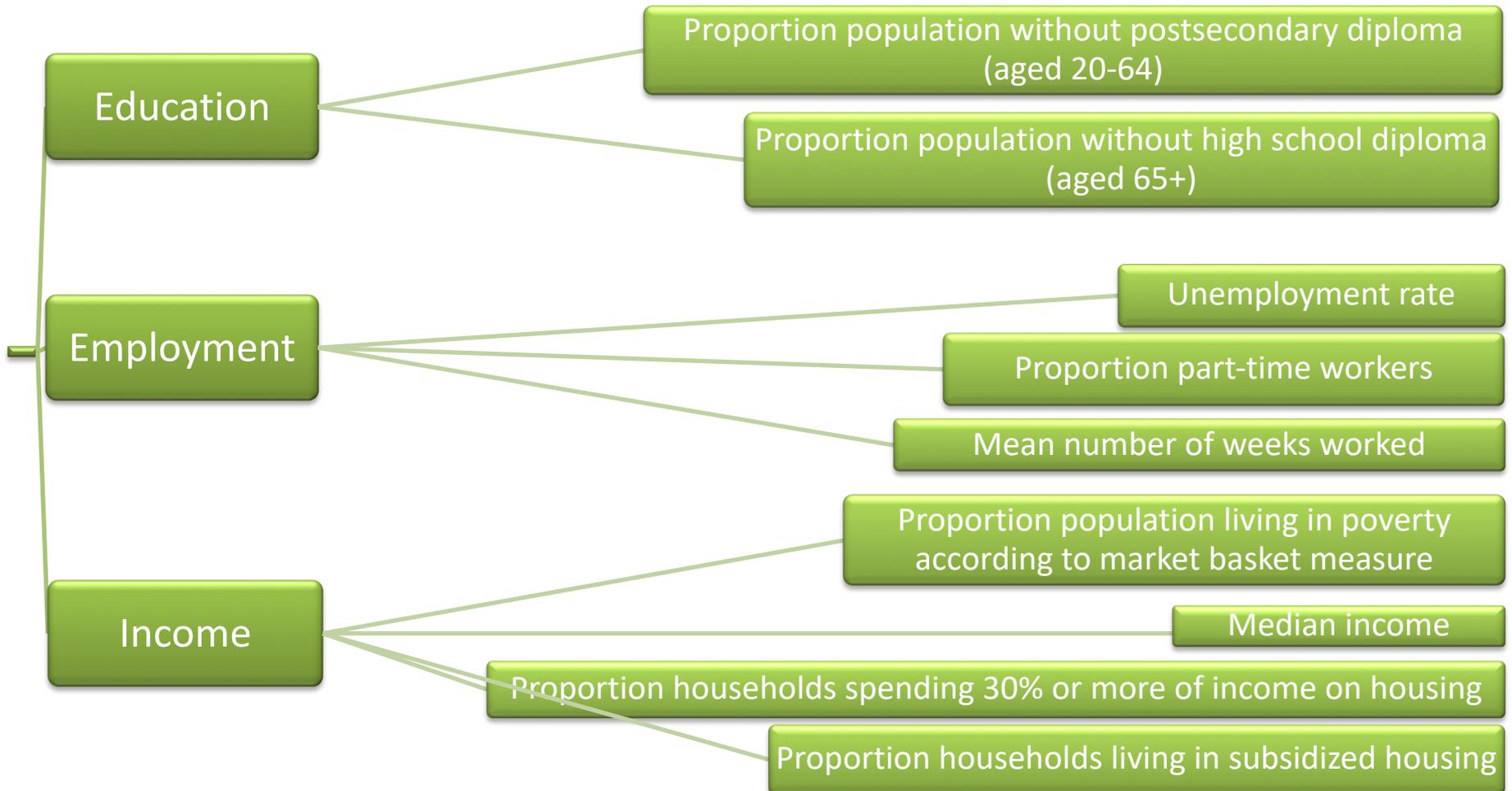
Main characteristics

- Based on yearly up-to-date **administrative data** which covers 100% of the population
- Coupling of socioeconomic with spatial data (GIS)
- Inclusion of environmental (neighbourhood) characteristics
- Direct measure of deprivation
- Area characterization



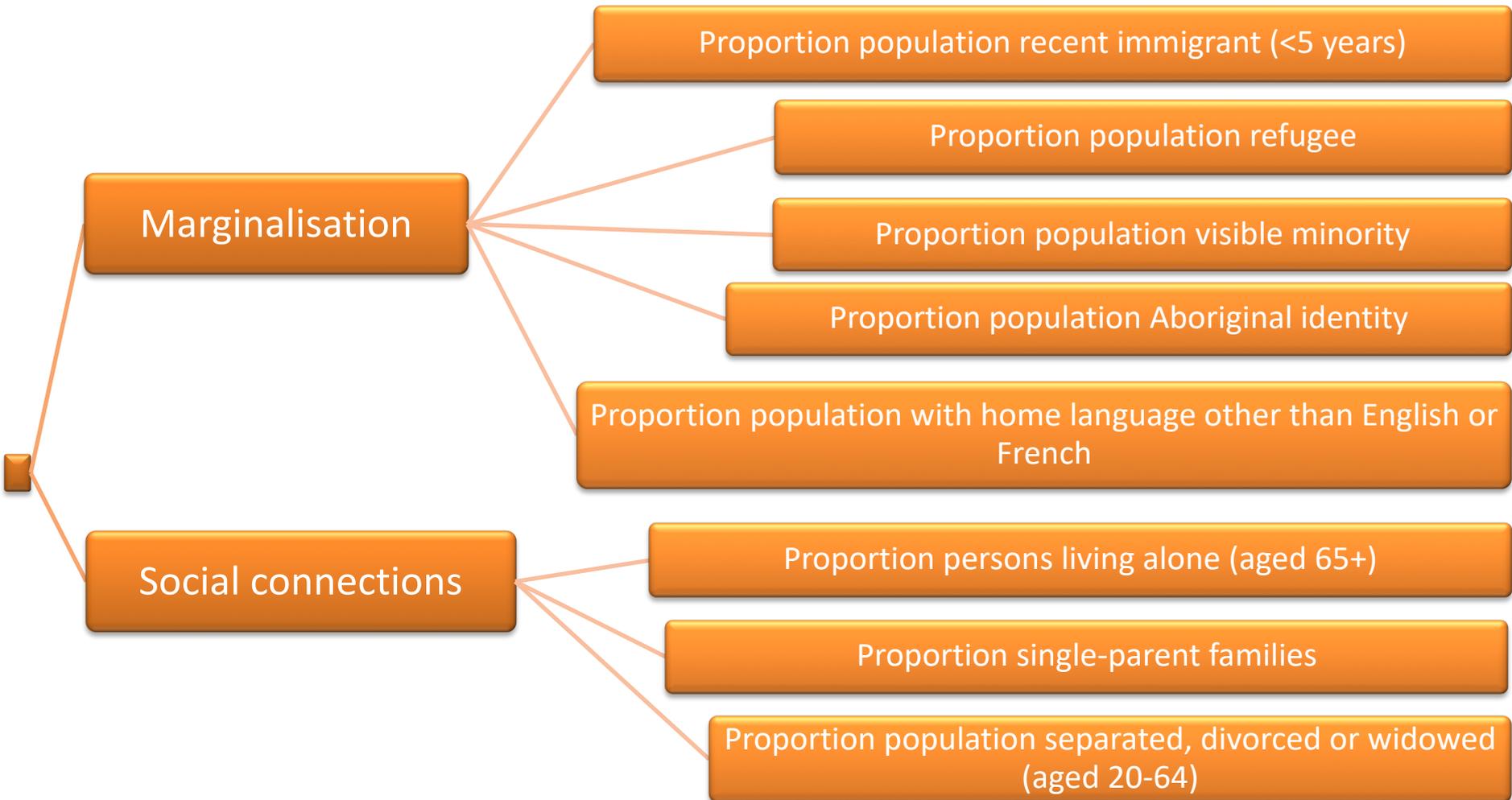
Indicator **examples*** : Material conditions dimension

*selection criteria will be applied, correlations examined and fit in a dimension or domain evaluated



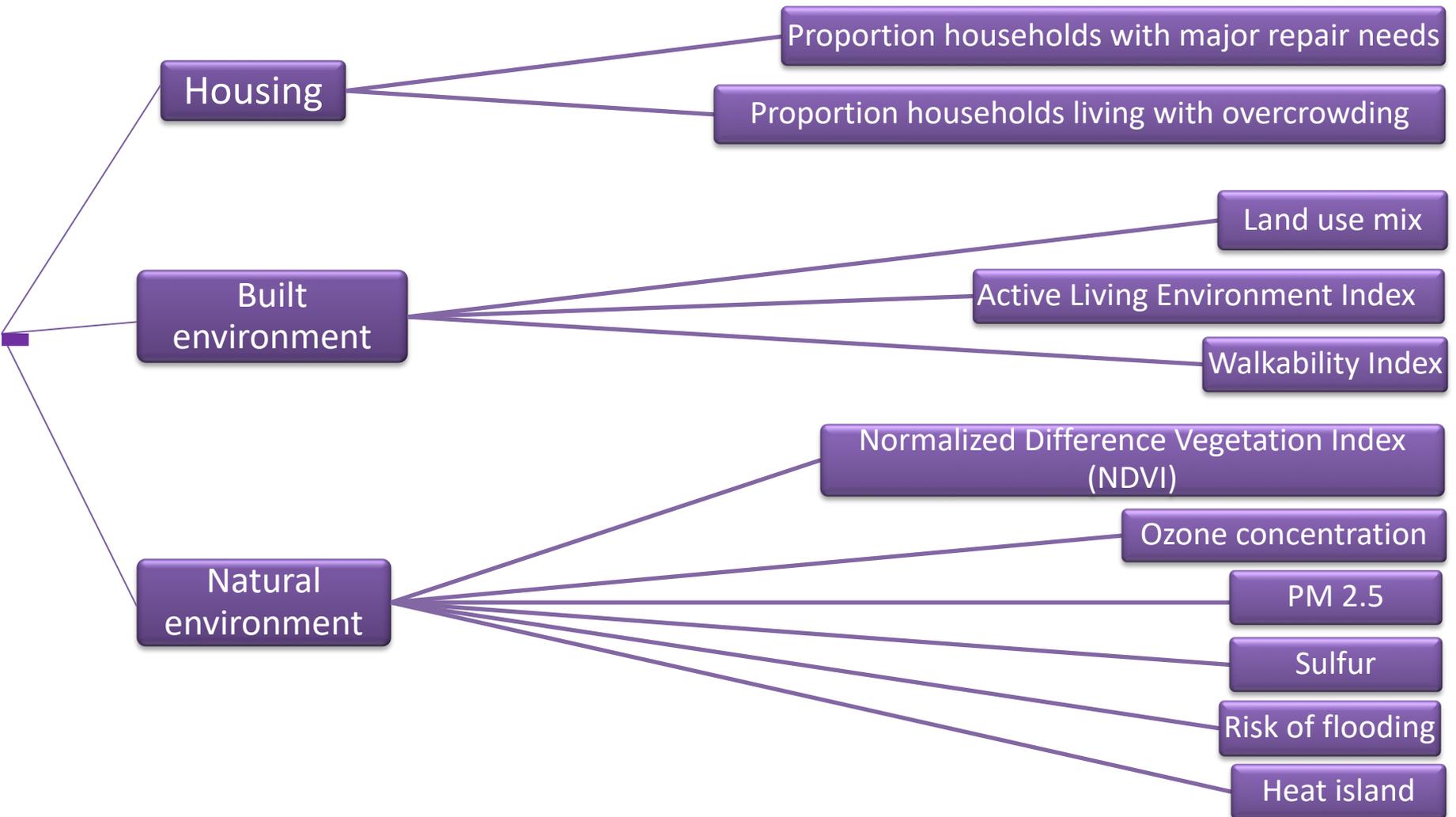
Indicator **examples*** : Social conditions dimension

*selection criteria will be applied, correlations examined and fit in a dimension or domain evaluated



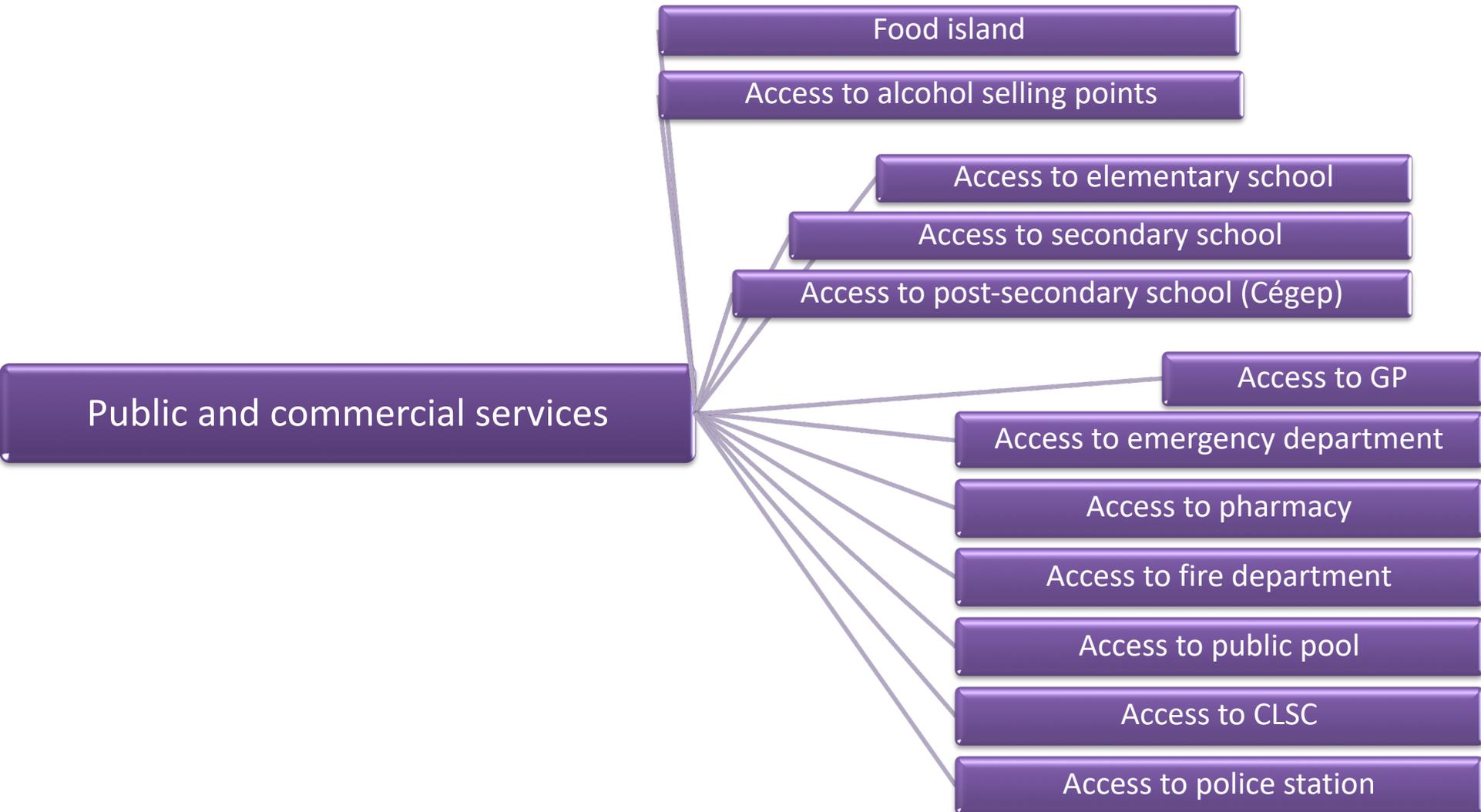
Indicator **examples***: environmental conditions dimension

*selection criteria will be applied, correlations examined and fit in a dimension or domain evaluated



Indicator **examples***: environmental conditions dimension

*selection criteria will be applied, correlations examined and fit in a dimension or domain evaluated



In the future

- Prototype validation by Quebec regions
- Dedicated internet page for deprivation measures
- Series of documents on different aspects of the development of the QMMDI
- Testing for the addition of more or different indicators
- Exploration of aggregation methods for different geographical levels
- Experimentation with the addition of higher-level information (electoral wards, cities, etc.)
- Search for administrative data sources



Questions?
Comments?

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