



W A S A B Y

Water and Soil contamination and Awareness on Breast cancer risk
in Young women

M5.2 Available data on deprivation indexes

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1. Introduction

The Wasaby project focuses on the geographical analysis of population-based cancer incidence data in connection with environmental factors, using breast cancer and water/soil contamination, as an example. In this project, the WP5 have to provide a national version of European Deprivation Index (or of other Deprivation Index) for all countries participating in the study, i.e., France, Germany, Italy, Lithuania, Poland, Portugal, Slovenia, Spain and Northern Ireland. In order to minimize the unavoidable ecological bias, the smallest area for which census data were available must be identified to include deprivation (assessed at aggregated level) as confounder in statistical modeling for breast cancer.

The main aim is to identify those participating countries for which a national version of the European Deprivation Index (EDI) is not available. For these countries, we have to collect information on census data availability, according to the data level, in order to estimate the possibility of a deprivation index construction. If EDI is not estimable, other deprivation indexes should be identified and collected. The present report focuses on the data available for estimating deprivation indexes in the various participating countries, and concludes on the feasibility of the European Deprivation Index construction in each country.

The method of EDI construction is based on three steps.

- The **first step** aims to construct an individual indicator for deprivation thanks to the identification of fundamental needs associated to objective and subjective poverty.
- The **second step** aims to identify variables available both at individual (EU-SILC survey) and aggregate levels (census) in each country.
- The **third step** is dedicated to the construction of ecological deprivation index. In this step, individual indicator of deprivation is explained in a logistic regression by variables identified in the previous step. The regression coefficients became the weights of the variables measured at aggregated level. The final index is the sum of these weighted variables.



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2. National and European Deprivation Index in the participating countries

4.1 EDI estimation

Considering the countries participating to WASABY, EDI 2001 is already available in Italy, Portugal, Spain, England and France [Pornet C, JECH 2012; Guillaume E, JECH, 2016].

The construction of EDI 2011 is in progress for all countries involved in WASABY. Table 1 here below describes the different steps of the construction progress in the Project.

Table 1: State of the art of EDI 2011 estimation for WASABY (at 29st April 2020)

Country	Year of Census	Status		
		Step 1	Step 2	Step 3
France	2011	X	X	X
Germany	2011	Could not be calculated		
Italy	2011	X	X	X
Lithuania	2011	X	In progress	
Poland	2011	X	In progress	
Portugal	2011	X	X	X
Slovenia	2011	X	X	X
Spain	2011	X	In progress	
Northern Ireland	2011	X	In progress	

The French, Portuguese, Slovenian and Italy EDI-2011 were concluded. In a few weeks, Step 2 should be reached for Northern Ireland. At a later stage, EDI will be constructed for Poland, Lithuania and Spain.

Due to some difficulties, Step 2 of EDI is still in progress for 4 countries, according to the following peculiarities:

1) Northern Ireland

For Northern Ireland, we have an active contact to develop EDI in this country. EDI will be computed in few weeks. Step 2 is finished as the beginning of step 3. At this step, weights that have to be applied for all census variables are determined. The preparation of census variables according to dichotomization realized in step 2 is in progress. As soon as this data will be prepared, it will be possible to finish EDI, probably before the end of May.

Poland

Identification of variables available in EUSILC and census data is still in progress. Municipality level, the area unit used by registries for geocoding, does not allow us to integrate many variables in EDI construction. We have some trouble about the level at which census variables were available. A clarification has to be done to determine the variables available at such geographic unit and according to this clarification we have to take decision: adapt EDI to allow its construction to this





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level or not construct it at all, even if this is the area unit used by registries. If this is the final choice, the use of a national index for Poland will be considered.

Lithuania

Step 2 of EDI is finished as the beginning of step 3 since January. As for Northern Ireland, weights that have to be applied to census data are determined. The preparation of census data according to the dichotomization realized in step 2 is in progress. As soon as this data will be prepared, it will be possible to finish EDI, probably before the end of May.

Spain

Identification of variables available in EUSILC and census data are finished since November 2019. Some variables have a paid access so a request was sent to National Statistics Institute (INE) to make a budget. INE has still not answer to this request. However, with respect to the aims of WASABY and the time periods of incidence made available by the Spanish Cancer Registries, the use of EDI-2001 is advisable.

3. Conclusions

We have the information on the different level for which census data exists but we must remain vigilant about the actual availability of census data. We want to distinguish the fact that we have information about census level but we are not sure to have the access to these data for all countries, mainly for Poland and Spain.

The construction of EDI have to cope with some issues that make it difficult for some countries:

- the schedule of the different partner (that could be really different),
- the availability of data,
- the time necessary to contact national institute.

At this stage, the indicators for estimating the European Deprivation Index in WASABY are:

- Number of countries for which we are sure about the EDI 2011 estimation: 5 (France, Italy, Portugal, Slovenia, Northern Ireland)
- Number of countries for which we envisage the EDI 2011 estimation: 3 (Lithuania, Poland, Spain)
- Number of countries for which we will not be able to do EDI estimation: 1 (Germany)
- Number of countries estimating EDI for the first time: 4 (Slovenia, Lithuania, Poland, Northern Ireland)

In summary, we have difficulties for the development of EDI in Spain, Lithuania and Poland with no assurance to success.

