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Multidimensional Poverty in Brazil through Fundamental Social Rights Compliance: An Analytic Proposal

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Abstract

This paper first explores (one-dimensional and multidimensional) poverty measures applied in Brazil and elsewhere. It then adapts a methodology developed in Mexico (CONEVAL/UNICEF/INEGI), combining social deprivations and income measures to construct a multidimensional poverty classification in Brazil. With the indicators used in Brazil (access to social security, education, density at the household, access to services at the dwelling - piped water, sewage, garbage collection, electricity - and a relative income poverty line), four mutually exclusive groups were created: **Income and social deprivations vulnerable (multidimensional poverty):** people with per capita household income below 60% of the median and at least one of the listed social deprivations. **Social deprivations vulnerable:** people with at least one of the listed social deprivations, but with per capita household income above 60% of the median. **Income vulnerable:** the population with per capita household income below 60% of the median, but without social deprivations. **Non-vulnerable:** people with per capita household income above 60% of the median and no social deprivations.

The group incidences changed from 2000 to 2010 (a period of social progress). Using IBGE Demographic Census Data it was possible to disclose that the non-vulnerable group grew from 22.7% to 29.7% of the population in the period. Most impressive gains concerned access to social security, while access to services at the dwelling remains an issue across the country. A spatial analysis at the municipality level revealed that important regional specificities remain concerning each of the four groups, as well as when the deprivations are detailed. The spatial diversity in Brazil calls for focused policies with tailored emphasis. Finally, in spite of analytical progresses, there is much to be done to develop the understanding of poverty as a multidimensional phenomenon in Brazil and to use this approach to help design policies to tackle poverty in a broad sense.

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Introduction

In the literature about the construction of social indicators, the validity, understood as the proximity between concept and measure, is a desirable property of an indicator. If the understanding of poverty is the one with the most immediate and widespread sense, i.e., a lack of income or insufficient income (monetary poverty), then indicators that incorporate solely the income variable are for sure valid. Incidence, intensity and severity[2] of poverty are, in this view, constructed with information on income from household surveys. Values are compared with a given poverty line. Then the universe of the poor is identified in a given country or locality. Poverty is generally seen as a social issue to be addressed.[3] The measure determining the headcount of poor is then associated with an inexorable discussion regarding the identification of target populations to which public policies to tackle poverty are directed, especially when these policies are focused. The choice of a particular monetary poverty line is related thus with the political and budgetary management of poverty. The higher the value of the line, the higher the headcount of the poor. This means a greater political cost to support poor people and a higher cost to implement policies to combat poverty.

However, as Sen states (1992:171): "a policy recommendation to combat such deprivation is subject to feasibility, but the recognition of poverty has to go beyond that".[4] The current debate goes in the direction of the understanding of poverty as a multidimensional phenomenon related to the idea of deprivation. But deprivation "of what" relative "to what" has been the issue Gordian knot. Spicker (1999), for example, identifies 12 definitions of poverty. In the first group, called "poverty as a material concept",[5] the author defines poverty using the concepts of needs, deprivation levels (over time) and limited resources (from which emerges the most common approach to poverty analysis in terms of income). A second group of definitions uses economic circumstances and encompasses the concepts and definitions of poverty in terms of living standards, inequality (relative poverty) and economic status (class stratification). Within a third group, poverty is defined by "social circumstances". It is associated with the concept of social class (underclass),[6] dependency (assisted population), vulnerability to social risks, lack of "entitlements" (realization of rights viewpoint) and social exclusion. Finally, the author also defines poverty as a moral judgment, in which serious deprivations associated with poverty are viewed as morally unacceptable.

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[2] These dimensions are explained in the next section.

[3] "The State could, of course, do nothing, and let people face the risk of starvation, but, even ignoring equity arguments, this has a range of efficiency costs, including (…) the death by starvation of dependents including children (the future labor force), and the fact that malnutrition causes poor health, thereby raising health-costs and lowering the capacity of adults to work and of children to absorb education (BARR, 2004:216)."

[4] "It can be argued that the first step is to diagnose deprivation. Related to this step, we should then determine what to do if we have the means. The next step is then start to make real policy choices in accordance with our means. In this sense, the descriptive analysis of poverty has to come before the policy choice." (Sen, 1992:171)

[5] "People are poor because they do not have something they need, or because they lack the resources to get the things they need" (Spicker, 1999).

[6] Wilson (1987) has highly contributed to the study of American "underclasses" setting them as a heterogeneous group of families experiencing long periods of poverty, unemployment and precarious jobs.

Indeed, a consensus among specialist seems to exist today. It states the multidimensionality of poverty. In contrast, in practice, many end up opting for one-dimensional measures in order to identify the poor and define target populations to policies and programs.

The present paper seeks, first, to present some one-dimensional and multidimensional measures adopted in Brazil and elsewhere, exposing some of their advantages and limitations (section 1). The main objective is to contribute to the debate and pave the way toward building measures that may reflect what we understand as poverty. That is, a "definition", if one may say so, that not only deals with the lack of resources and indispensable goods to the survival of the human beings (eat, live with dignity, dressing, etc.), but also considers poor the depleted population: workers in precarious occupations, people of all ages without access to fundamental social and human rights (health, education, freedom, nonviolence), the non-citizen. Section 2 proposes a methodology for measuring multidimensional poverty based on the Mexican experience, while Section 3 summarizes the main results for Brazil. In the present paper, we explore the multidimensional poverty and its components by Regions, States, municipalities (georeferenced and aggregated by population size). Finally, in the last section some considerations are put forward.

1. Poverty measures

1.1. One-dimensional measures

As noted in the introduction to this paper, usually the choice of a poverty measure falls, almost automatically, in a monetary measure based on income or consumption held by the unit of analysis: individuals, families, households, but also larger aggregates such as cities, states or even countries. The choice of the monetary unit is justified, in most cases, by the availability of information. It may also be justified by the understanding that income is an important determinant to each person's level of consumption. Barros et al. (2006:7) state that, besides the need for a scalar measure to define policies (who is and who in not poor), "as it is usual for families to access goods and services that determine their well-being in markets, and in order to join these markets they must have monetary resources, it follows that insufficient income ends up being a major determinant of family deprivations and therefore a strong scalar candidate to measure poverty." Furthermore, access to many goods and services takes place in markets, so income is then a *proxy* of other unmeasured dimensions (Santos et al., 2010).

An opposing view is the classical perspective grounded in the construction of social protection systems that highlights the safeguard of rights and the de-commodification of goods and services for the promotion of equity: "The de-commodification occurs when a service is provided as a right and when a person can maintain a livelihood without relying on the market (Esping-Andersen, [1990] 2000:157)." The term dates back to the Marxist theory of commodification of workers' labor power (which must be sold in order to guarantee the survival of these workers). Zimmermann and Silva (2009:347) agree with the design of Esping-Andersen, since "treated as commodities, workers are exposed to powers beyond their own

forces, as in the case of diseases, macroeconomic events and business cycles." Thus, the de-commoditization is recommended as a means of social protection and well-being. It makes workers able to refuse degrading work (slave labor, underpaid jobs) without being punished for it, once they have access to "minimum living standards, which includes freedom from hunger, adequate housing, etc." Draibe and Riesco (2006) advocate the de-commodification as the other face of social citizenship rights, since it weakens the monetary bond. Therefore, goods and services tend to lose, in part or in full, their commodity nature. This applies, for example, to the public offer of universal health and education services, which are considered by many to be fundamental for the equalization of access and opportunities. A fairer and more cohesive society would then be built (Cf. Lavinas, 2013).

However, the dominant approach for identifying poverty levels is still mainly an immediate comparison of income to a "poverty line". This line is often built with the value of a food basket which ensures a minimum of calories.[7] Besides, measures of income obtained in household surveys are more used than consumption measures. In addition to greater availability of income data, studies of household consumption (preferable because it is less volatile than income)[8] require more detailed and costly investigations. In Brazil, Household Budget Surveys (POF) took place in metropolitan areas in 1995-6 and in the whole country in 2002-3 and 2008-9. According to Osorio et al. (2011:13), "even when the minimum is calculated with the consumption of a food basket, poverty is defined by insufficient income to buy this basket, instead of observing the actual non-consumption of the basket. That is so because, in the last three decades, the main source of data to measure poverty has been the PNAD,[9] which only investigates income, not consumption." An additional limitation to the analysis using income is that household surveys such as PNAD tend to underestimate individual incomes (as is the rule to this type of surveys anywhere in the world). They "are mainly unable to gather information related to income from capital assets" (Deddeca, 2007:299), i.e., the concept of income is limited (although well captured) to labor income and pensions.

In order to measure and define target populations to social policies against poverty in Brazil, the income metric remains chief, and most of the times the only instrument to select beneficiaries. In general, concern is directed to poverty incidence (headcount), that is, the proportion of the population with incomes below a certain poverty line. "It is a clear and well defined measure. It is then not hard to see why it has been so widely used in the empirical literature on poverty and deprivation" However, as Sen warns (1992:165), "the aggregation exercise with simple incidence pays no attention to the fact that people may be slightly down the line or far below. In addition, the distribution of income among the poor may be quite uneven." That is, the universe of the poor is not homogeneous. Consequently, efforts to fight

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[7] "The method that uses calories is more than a hundred years old. It was first used by Rowntree (1901) in his pioneering study of poverty in York in the late nineteenth century (...) the method is particularly popular in Latin America with highlight to Brazil. ECLAC poverty lines for Latin America have been, for three decades, all calculated by using the indirect calorific method "(Soares, 2009:15).

[8] "Family expenses reflect better permanent income – proxy to well-being that the researcher wants to measure – instead of income itself (Rocha, 2003:46)."

[9] PNAD -National Household Sample Survey is a thematic research, with an emphasis on labor and income, collected annually by the IBGE in the entirety of Brazilian territory

poverty should take into account these internal differences. Measures such as the intensity of poverty (or income gap, which measures the distance of the individual/family income in relation to the line) and the severity of poverty (which considers the distribution of income among those below the poverty line, giving different weights to income transfers that leave the poor even poorer) should be used together for measuring poverty (still under the income approach).

In Brazil, there is an aggravating factor to the measurement issue: there is no consensus on the establishment of an official poverty line (or lines). The most commonly used poverty lines are constructed based on monthly family (or household) *per capita* income. One may list: the institutionalized *Bolsa Família*[10] lines (equivalent to R$ 70 and R$ 140 for extreme poverty and poverty, respectively); fractions of the minimum wage (¼ and ½ minimum wage); monetary regionalized lines with different values depending on the cost of living in certain regions or areas of the country (Rocha, 2003, 2013; IPEADATA, *s.d.*); and the lines used internationally by various multilateral agencies (e.g., US$ 1.25 and US$ 2 purchasing power parity - PPP). These (absolute poverty) lines serve the purpose of classifying the poor and the non-poor, while the poverty incidence can vary considerably from one study to another. These lines, as seen above, also help calculate poverty severity and poverty gap, which may as well vary in time, in space and as a result of redistributive policies.

Also with a one-dimensional perspective, there are subjective measures of poverty.[11] These measures are interesting and, at the same time, controversial. They depend on the questions wording. Furthermore, they are well often only available in a few countries. Drawing the poverty line with subjective inputs has the value of bringing people's perception regarding their own living conditions. In addition, there is a proven correlation among these subjective measures and "objective" measurements of income, which supports their scientific value.[12] In Brazil, the POF Surveys includes questions of this nature, whose information has provided the basis for the construction of a subjective poverty line. This line, associated with absolute poverty lines (constructed from aggregate consumption also from POF), led to the development of the *Inequality and Poverty Map* (IBGE, 2003). This analysis constructed poverty estimates for small areas. It used POF (data collected in 2002-3), matching to the territorial basis of 2000 Demographic Census at the level of municipalities (World *Bank Poverty Maps* methodology).[13]

Finally, relative income poverty measures are recurrent in Europe, and less so in Brazil. In contrast with absolute poverty, when applied in Brazil, they show greater stability of the share

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[10] Brazilian main conditional cash transfer program.

[11] Subjective measures serve to create a line (one-dimensional perspective), and technically may be the result of the comparison of more than one measure, for example, the statement "the minimum necessary for survival" and *de facto* earned income.

[12] Gasparini et al., 2011:12 "… subjective notions of welfare are statistically correlated with income, even though this correlation is low (see, for example Ravallion and Lokshin, 2001). The significant correlation discards the sometimes claimed idea that subjective welfare measures highly idiosyncratic factors that do not obey systematic patterns."

[13] Poverty maps examples in World Bank, 2007.

of the population below 40%, 50% or 60% of median income in recent decades.[14] According to Rocha (2003:11): "Absolute poverty is closely linked with physical survival issues, the non-fulfillment of needs linked to the essential minimum. The concept of relative poverty defines requirements to be met depending on the predominant way of life in the society under study. That means taking into account the reduction of inequality of means among individuals as a social goal." With PNAD data, the proportion of families with *per capita* income below 60% of median corresponded to 27.6% in 2001 and 25.8% in 2011, which attests to the difficulty of changing the (uneven) structure of the income distribution in Brazil. The persistence of relative poverty in Brazil is in line with the Gini coefficient, a measure of inequality that puts Brazil among the most unequal countries. This coefficient has decreased slightly in recent years, after a long period of stability. In 2013 Human Development Report (UNPD, 2013:154), Brazil Gini index is 0.547 (harmonized data), while in Norway it is 0.258. The worst placed country in the list (except small islands) is Namibia with 0.639. Neighboring Latin American countries have Gini coefficient way below Brazil, like Argentina (0.445), Uruguay (0.453) and Mexico (0.483).

In general, "absolute" monetary poverty lines start with the minimum value for food acquisition (extreme poverty or indigence line) and add other needs (housing, transportation, health, etc.). This second line defines the "minimum" for families to "live with dignity", theoretically taking into account some relative aspects. In most cases, a "k" multiplier is used to reach the poverty line from the indigence line. Most of the times, it is done without much discussion around that value and its adherence to any level of minimum living standards. ECLAC, for example, traditionally uses "2" as the standard multiplier in Latin America.

There is debate about the arbitrariness of the definition of poverty lines, either "empirical lines" with aggregate consumption methods, or administratively defined lines (political or budgetary criteria). There are indeed many alternative methods. As stated by Soares (2009:33), "considering the many difficulties ... to the scientific measurement of poverty, it is hardly a surprise that there is much in favor of using administrative lines." Rocha (2013:3) advocates the use of a strictly relative poverty measurement: "in Brazil, absolute poverty has ceased to mean a threat to physical survival, and thus food expense is no longer the predominant expense group, even among poor families." Under these conditions, the choice is always of the analyst or politician to make. Whatever the elected approach, in order to measure, characterize and establish policies to combat poverty, the premise is always to promote the goal of greater equality." The choice of which one-dimensional measure varies ultimately with the objectives of the analysis, the formulation of a policy/social program, international comparisons, and the availability of information. Institutional values and preferences are also very prevalent in the choices.[15]

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[14] These are the most common percentages.
[15] Osório et al. (2011:18) "... many of the necessary decisions to build the lines using empirical approaches are based on the values of researchers or their institutions ... administrative poverty lines possess no scientific basis nor claim to represent the minimum level of income to meet biological needs: they are utterly normative."
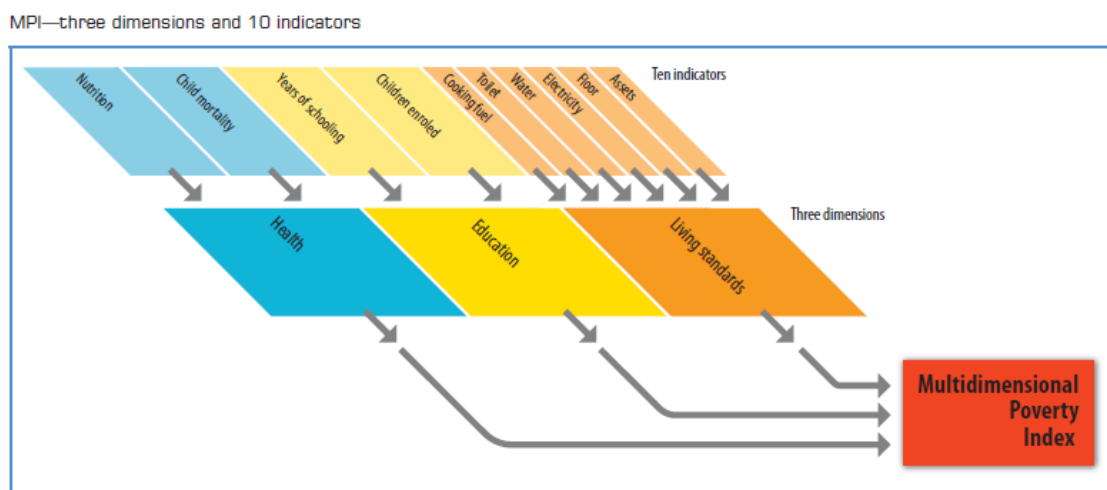
1.2. Multidimensional measures

Despite the recognition of the multidimensionality of poverty, efforts to develop multidimensional measurements are relatively newer than the usage of monetary measures. In the 1970s, the World Bank and ILO developed an approach by "basic needs" (Bagelin and Avila, 2006). In Latin America, ECLAC analyzed the "unsatisfied basic needs - UBN" in the countries of the region (Feres and Mancero, 2001). This approach can also be interpreted as subscribing to a relative perspective of poverty. It determines a number of goods related to well-being and necessary to live a dignified life (inspired by the "Theory of Justice" of Rawls, 2002 [1971]). According to Sen (1992:172): "the literature on 'basic needs' along with studies related to 'quality of life' have been immensely useful to draw attention to the deprivations of essential goods and services and their crucial role in human life."

However, Sen elaborates in his studies a new approach for the analysis of living conditions, developing the concepts of functionings and capabilities, in which he argues that the individual must not only have income, but she must be able to translate it into well-being. For this, she needs to be well-nourished, healthy, educated, free, etc. Poverty is then defined as a "lack of basic capabilities to achieve minimally acceptable levels", which clearly include the inadequacy of the income received by the individual: "having inadequate income is not a matter of having an income level below an externally fixed poverty line, but having an income below what is suitable to generate the specified levels of capabilities for this individual" (Sen, 1992:174). Thus, the capabilities approach contrasts with the achievements approach, "although sometimes we may use the information about realization to conjecture about the capacity enjoyed by such a person" (1992:175).

In practice, the Human Development Index of the United Nations Development Program (UNDP), created in 1990, was inspired by this set of discussions. It summarizes information on income, health and education at the country level in order to compare the evolution of "human development" around the globe (in contrast to the narrower use of *per capita* GDP as a measure of social development).[16] Also within the UNDP, the Multidimensional Poverty Index (MPI), successor or the Human Poverty Index (HPI), seeks to measure deficits in health, education and standard of living, addressing both the number of poor people (deprived) and the intensity of deprivations" (UNDP, 2011:5). According to HDR 2013 (UNDP, 2013:27), it is estimated that "in the 104 countries covered by MPI, about 1.56 billion people - or more than 30% of the population of these countries - live in multidimensional poverty." The focus on incidence, but also on poverty intensity gives much richness to the index, which is otherwise subject to much criticism: it is the result of a choice of dimensions and indicators, consequently excluding others; it quantitatively compares dimensions which are qualitatively different. There is also a conceptual critique: is this kind of measure really about "poverty" instead of measures of "inequality", "living conditions" or "well-being" (Smith, 2009:14)? Figure 1 shows the dimensions and indicators of the MPI.

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[16] Alkire and Foster (2007:2) state "multidimensional poverty has captured the attention of researchers and policymakers alike due, in part, to the compelling writings of Amartya Sen and the unprecedented availability of relevant data."

Figure 1 – dimensions and indicators of multidimensional poverty index

MPI—three dimensions and 10 indicators

Ten indicators: Nutrition, Child mortality, Years of schooling, Children enroled, Cooking fuel, Toilet, Water, Electricity, Floor, Assets

Three dimensions: Health, Education, Living standards

Multidimensional Poverty Index

Note: The size of the boxes reflects the relative weights of the indicators.

Source: Alkire and Santos 2010.

Source: UNDP, Human Development Report 2010, chap. 5

Furthermore, Stiglitz, Sen, Fitoussi (2009:58) state that "quality of life includes a large set of factors that make life worth living, including factors not traded in markets and which are not captured by monetary measures." Their report, whose goal was to develop an appraisal and recommendations regarding the availability of statistical information on economy and society, reinforced the idea that it is worth giving a greater prominence to the distribution of income, consumption and wealth rather than *averages* (such as *per capita* GDP). One should go beyond monetary measures, including "non-market" activities (production for own consumption, leisure, etc.). They emphasize that well-being is multidimensional. The report identifies some key dimensions that should be considered simultaneously and in an integrated manner: material living standards (income, consumption and wealth); health; education; personal activities, including work; political participation, and governance; social connections; environment (present and future conditions); economic and physical insecurity.

Newer studies have sought to combine the use of basic needs (non-monetary measures) with a monetary measure. Santos et al. (2010), for example, compare Latin American countries using a multidimensional measure (using monetary and non-monetary indicators). They give three reasons to add income to the UBN: "(a) it can act as a surrogate for all the other non-considered dimensions due to data restrictions, (b) it has been found to have relatively low correlations with other indicators, (c) even when merely a means, having purchasing power provides the household with some freedom to choose the bundle of goods (Santos et al, 2010:3)." It is a methodology near the one applied by CONEVAL in Mexico, which inspired the multidimensional contributions started in IBGE (2012) and improved in the present contribution (see next section)

In connection with multidimensional measures, it is worth mentioning, in Brazil, Barros et al. (2006), who developed an index of multidimensional family poverty (IDF - Family Development Index), currently used by the Ministry for Social Development (MDS) as a tool to determine the degree of vulnerability of each family enrolled in the Ministry databases.[17] Another multidimensional effort, with fewer repercussions, was made by Bagolin and Avila (2006). They sought to identify the spatial distribution (or concentration) of poverty in Brazil with multidimensional indicators based on the Capability and Human Needs approaches. Their results have shown that the spatial distribution of multidimensional poverty varied per state according to the dimensions considered.

Index construction efforts area valuable since they combine dimensions. These efforts are however always subject to criticism due to the arbitrary choices made and because there is often a quantitative aggregation of qualitatively different dimensions. The internal and external validity of these constructs (synthetic indicators) can be then called into question. At the same time, the researcher should be aware of the usage. The indices can serve well to some goals. Yet they are no panacea, replacing lack of information for specific policy setting: "synthetic indices such as the HDI show areas to prioritize. They do not identify specific problems. Thus, although the comparison and analysis of the HDI among countries and even among states [in Brazil] are important to the debate on social development, education policy, for example, requires specific educational indicators in order to appraise the situation (Saboia and Cobo, 2006)."

2. Methodology

The multidimensional measure proposed here is inspired by the work of the *Consejo Nacional de Evaluación de la Política de Desarrollo Social* - CONEVAL Mexico. The Mexican effort was done by this administration in partnership with the United Nations Fund for Children (UNICEF) and the Mexican National Institute of Statistics and Geography (INEGI). This effort built upon the UBN, combining various social deprivations collected in household surveys to a monetary measure. It is a methodology for measuring poverty/deprivation with a multidimensional perspective of realization of human rights. It gives a new interpretation to known indicators in the poverty analysis: educational backwardness, inadequate housing, lack of social protection, and low income (CONEVAL, 2012). These dimensions are thus related to some of the multidimensional indicators mentioned in the previous section.

Bringing this perspective to our goals, the social rights and human rights realization viewpoint considers that every person should have a series of essential guarantees for the exercise of human dignity (indivisible and interdependent rights - UN, 2008), which is in line with Brazilian legal framework. The Federal Constitution of Brazil puts in many articles the State's obligations regarding the realization of social rights in areas such as education, health, social protection, etc. (IBGE, 2012, ch. 6).

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[17] See http://www.mds.gov.br/falemds/perguntas-frequentes/bolsa-familia/cadastro-unico/gestor/cadunico-indice-de-desenvolvimento-da-familia-idf

Besides, this methodology permits the construction of scalar indicators (multidimensional indexes), as well as the identification of types of deprivations and to define incidence and intensity of the multidimensional poverty. We have applied this CONEVAL/UNICEF/INEGI methodology to the 2000 and 2010 Brazilian Demographic Census data.[18] It was possible to construct the same dimensions (deprivations) as in Mexico, at the exception of access to healthcare and adequate food, due to lack of data. The other dimensions were specified as follows:

- **Educational deprivation:** vulnerable people are children and adolescents 6-14 years old who were out of school, people 15+ years old illiterate, and people 16+ years old who had not completed primary education.
- **Bedroom density:** we considered deprived the residents in households with a density of residents per bedroom equal or higher than 2.5 persons.[19]
- **Dwelling service access:** residents were classified as vulnerable when living in dwellings without water supply from the general network, with no sewage (network or septic tank), without garbage collection, or without electricity (the lack of any of these services was enough to classify the dwelling, and therefore every dweller, as vulnerable).
- **Social security access:** all the residents of a given household were considered vulnerable when there was <u>no</u> dweller aged 10+ years old in one of the following conditions: contributors to Social Security in any work (i.e., with formal work) and/or retiree/pensioner. In addition, it was used as a proxy of beneficiaries of cash transfer programs those people who had *per capita* household income less than half the minimum wage and reported receiving income from other sources.[20] Thus, residents of households with *per capita* income less than half the minimum wage <u>and</u> in which <u>no</u> member received income from other sources were also classified as vulnerable.

The identification of deprivations allows a classification of the population into four major mutually exclusive groups:

- **Income and social deprivations vulnerable (multidimensional poverty)**: people with *per capita* household income below 60% of the median and at least one of the listed social deprivations.
- **Social deprivations vulnerable**: people with at least one of the listed social deprivations, but with *per capita* household income above 60% of the median.
- **Income vulnerable**: the population with *per capita* household income below 60% of the median, but without social deprivations.
- **Non-vulnerable**: people with *per capita* household income above 60% of the median and no social deprivations.

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[18] Data from the sample/detailed questionnaire.

[19] In the Mexican methodology, this was one of the indicators that composed the 'quality of the dwelling', along with outer walls, roof, and floor materials. Although the 2010 Brazilian Census has investigated the predominant material of dwelling outer walls, another indicator of housing quality, this information was not present in the 2000 Census questionnaire.

[20] In the questionnaire, "other" was not specified, so we assume that it is mainly of social transfers, considering that we are including only the households in the basis of the income pyramid.

A first measure of multidimensional poverty incidence is "H" (headcount ratio), i.e. the proportion of the population which is in multidimensional poverty. Though informative, this measurement has its limitations. For example, if a family in poverty suffers from further deprivations (additional dimensions) the incidence does not change. The measure of adjusted incidence "M_0" (adjusted headcount ratio) is defined as the product of the incidence "H" by the average number of deprivations of the multidimensional poor population "A".

$$M_0 = H*A$$

"M_0" is sensitive to the frequency and amplitude of poverty, besides correcting the problem of the incidence measure (headcount ratio). If a person suffers from deprivation in one new dimension, the average number of deprivations of the population increases, and hence M_0 (Santos and Lugo 2010:5).

In order to evaluate the contribution of each dimension to multidimensional poverty, educational backwardness, bedroom density, access to services in the dwelling and access to social security as well as the level of income (below 60% of the median) were used with equal weight to calculate M_0. The decomposition of the adjusted incidence ('adjusted headcount ratio') according to each dimension followed the proposal of Alkire and Foster (2007).

A thorough analysis of census data with methodology in smaller areas (municipalities, districts, aggregated census tracts, etc.) along with georeferenced results may be an important effort to identify deprivations. It has the potential to guide public policies to overcome vulnerabilities in one or more combined dimensions. In the present paper we explore multidimensional poverty and its components in Brazil by regions, states, and municipalities (georeferenced and aggregated by population tier).

3. Results

First results show that about 70% of people had at least one social deprivation in 2010. In the 2000 Census, this percentage was 75.8%, a decrease of 11.7% in the period. Table 1 summarizes the results for Brazil.

Table 1
Population by types of deprivations and vulnerability groups
Brazil - 2000/2010 (%)

| Total population, deprivations and vulnerabilities	2000	2010	Difference (2010/2000) Δ%
Total Population	168.450.492	189.797.859	12,7
Educational Deprivation (%)	41,0	32,8	-20,0
Social security access deprivation (%)	27,3	12,8	-53,2
Bedroom Density deprivation (%)	27,5	18,8	-31,8
Dwelling service access deprivation (%)	46,5	40,8	-12,2
At least one deprivation (%)	**75,8**	**66,9**	**-11,7**
Income deprivation (%)	33,4	30,9	-7,4
Multidimensional poverty (%)	**31,9**	**27,5**	**-13,7**
Social deprivations vulnerable (%)	43,9	39,4	-10,3
Income vulnerable (%)	1,5	3,4	127,5
Non-vulnerable (%)	22,7	29,7	30,9
Mean deprivations	1,4	1,1	-26,1

Source: IBGE, Demographic Census 2000/2010.

In both censuses, the lack of access to basic services at the dwelling was the deprivation with the highest incidence. In addition, this deprivation had the smaller reduction in the decade: in 2010, 46.5% of people had no proper access to services (piped water, sanitation, garbage collection or electricity), while in 2000, the figure was 40.8% (a 12.2% reduction). Educational deprivation still concerns one third of the population even though it reduced by 20% in the period. Undoubtedly, it was the access to social security that had the best performance between 2000 and 2010, a reduction of over 50% in the population without access to social security or income transfer policies (aimed at combatting poverty). In terms of income, taking the level of 60% of the median as the poverty line, almost one third of the population was (monetary) poor in 2010 (going from 33.4% in 2000 to 30.9% in 2010). Finally, the multidimensional poverty (low income and at least one social deprivation) reduces between censuses, from 31.9% to 27.5% of the population.

The analysis of indicators by Brazil's five Regions[21] discloses that about half of the population in the North and Northeast regions may be considered poor with a monetary perspective (single relative measure: income below 60% of the median). Moreover, the proportion of people with at least one social deprivation reaches 90% of the population in the North (percentage remains stable between censuses) and 80% in the Northeast. Multidimensional poverty affects around 47% of the population in North and Northeast regions. Conversely, the Southeast has the highest percentage of non-vulnerable (41.2%), while the stability of the indicators (of deprivation) in the North is remarkable (Graph 1).

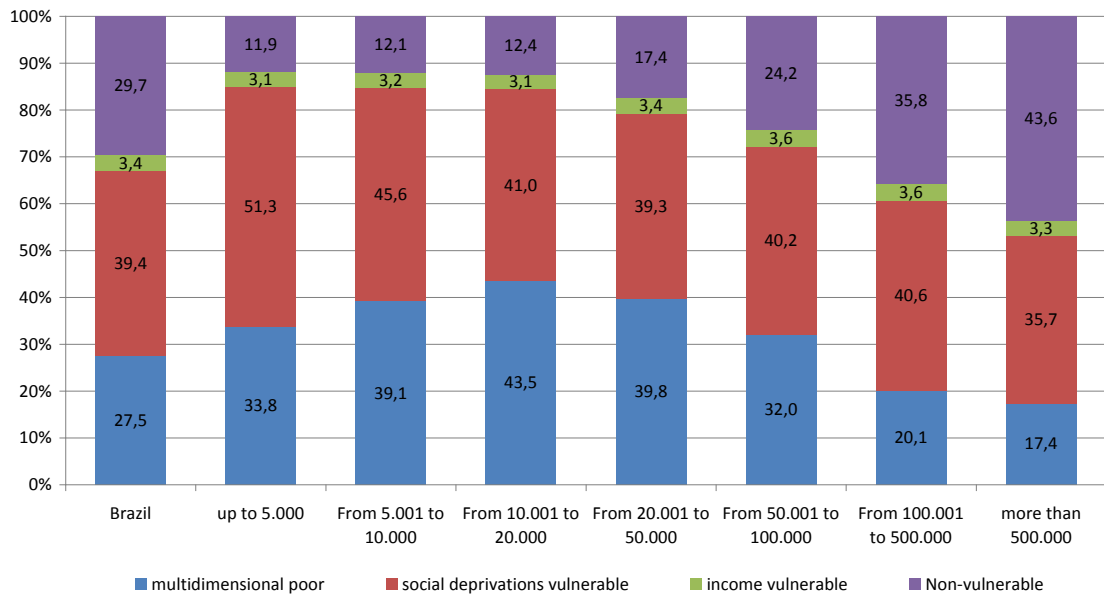[21] See a map of Brazil by regions and states in the Appendix

Graph 1
Population by types of deprivations and vulnerability groups
Regions - 2000/2010 (%)
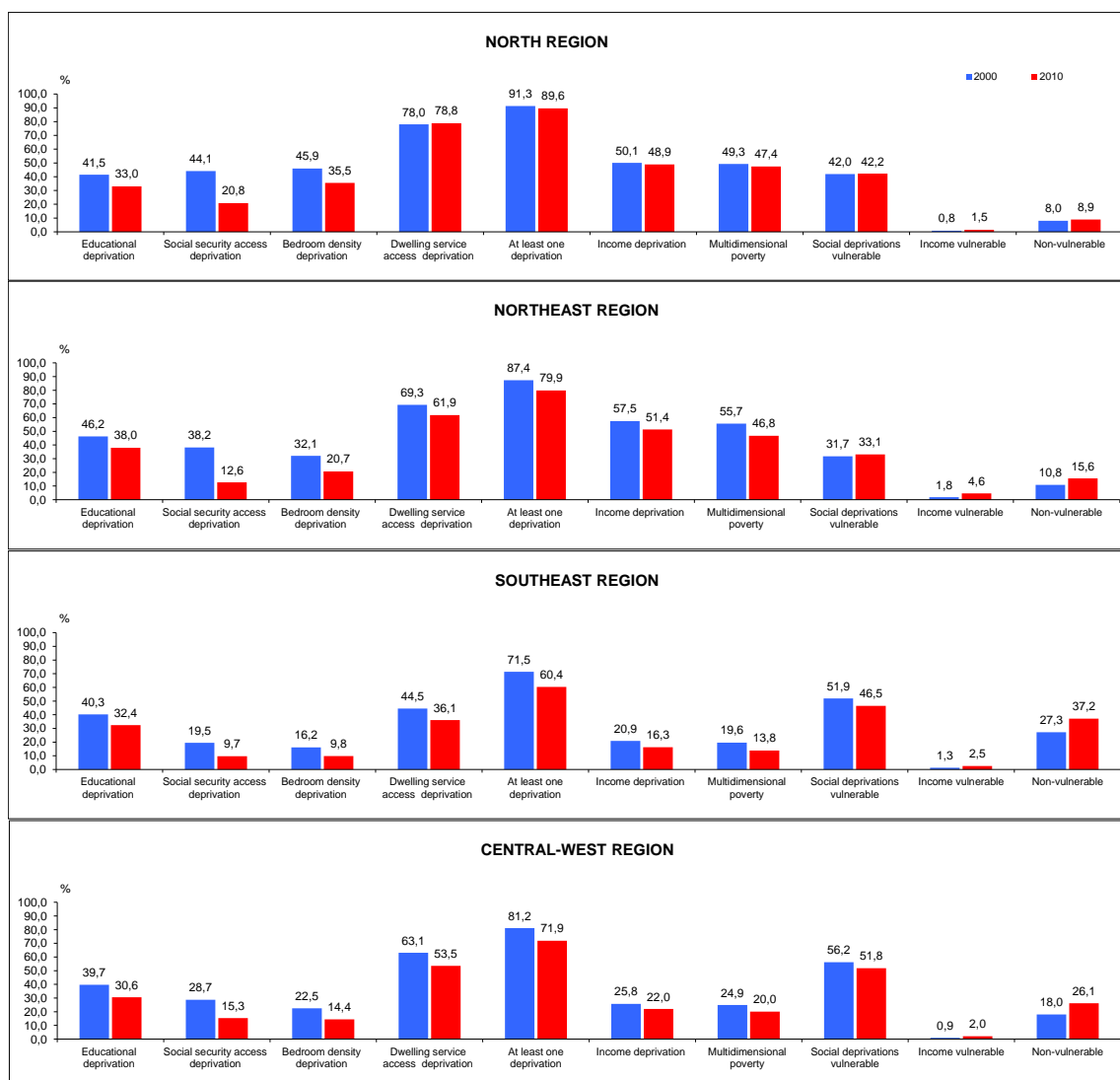
Source: IBGE, Demographic Census 2000/2010

It may also be observed that the percentage of non-vulnerable grows with the population size of the municipalities (Graph 2). It goes from 12% in those with up to 10,000 inhabitants to 43.6% for municipalities with more than 500,000 inhabitants. The social deprivation vulnerability affects over half of the population in less populated municipalities, while the vulnerability by income without social deprivations does not vary much among population tiers, remaining below 4%. Finally, multidimensional poverty was more significant in municipalities with 10,000 to 20,000 inhabitants (43.5% of the population).
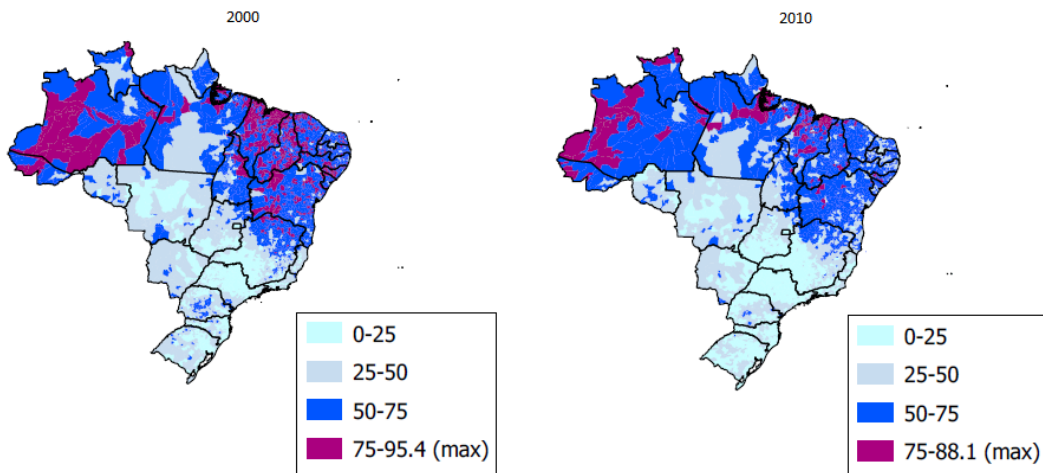
Graph 2
Multidimensional poverty by municipalities population tiers - Brazil - 2010 (%)

	Brazil	up to 5.000	From 5.001 to 10.000	From 10.001 to 20.000	From 20.001 to 50.000	From 50.001 to 100.000	From 100.001 to 500.000	more than 500.000
Non-vulnerable	29,7	11,9	12,1	12,4	17,4	24,2	35,8	43,6
income vulnerable	3,4	3,1	3,2	3,1	3,4	3,6	3,6	3,3
social deprivations vulnerable	39,4	51,3	45,6	41,0	39,3	40,2	40,6	35,7
multidimensional poor	27,5	33,8	39,1	43,5	39,8	32,0	20,1	17,4

■ multidimensional poor ■ social deprivations vulnerable ■ income vulnerable ■ Non-vulnerable

Source: IBGE, Demographic Census 2010.

The spatial analysis is an interesting tool to show the evolution of the indicators in the Brazilian territory. From 2000 to 2010, there was a generalized reduction of the incidence of multidimensional poverty. If in 2000 there were municipalities with up to 95.4% of the population considered 'multidimensional poor', this maximum was 88.1% in 2010. Yet pockets of poverty remain recognizable in the traditionally poorest areas of the country – North and Northeast – with ratios above 50% of the population.

Figure 1
Maps of population in multidimensional poverty (%)

Source: IBGE, Demographic Census 2000/2010

Figure 2 shows the spatial concentration of the four mutually exclusive groups constructed with the multidimensional poverty/vulnerability approach. As seen in the previous maps, the multidimensional poor are concentrated in the northern part of Brazil. The proportion of poor by social deprivations (i.e., living in households with *per capita* income above 60% of the median, but lacking access to at least one of the deprivations assessed) is higher in the agricultural frontier in the East of Central-West Region (Mato Grosso and Mato Grosso do Sul states), also in the eastern border of the South Region. The income vulnerable population (income below 60% of median but no social deprivation) is much less frequent and is more scattered in the territory, with some pockets in eastern Minas Gerais and São Paulo states, south and north of Bahia, Pernambuco and extreme south of Rio Grande do Sul. The non-vulnerable population is more frequent in São Paulo, southern Minas Gerais, Distrito Federal and municipalities going from the coast of Espírito Santo to Rio Grande do Sul.

Figure 2
Maps of population in each vulnerability group (by quintiles - 2010 - %)
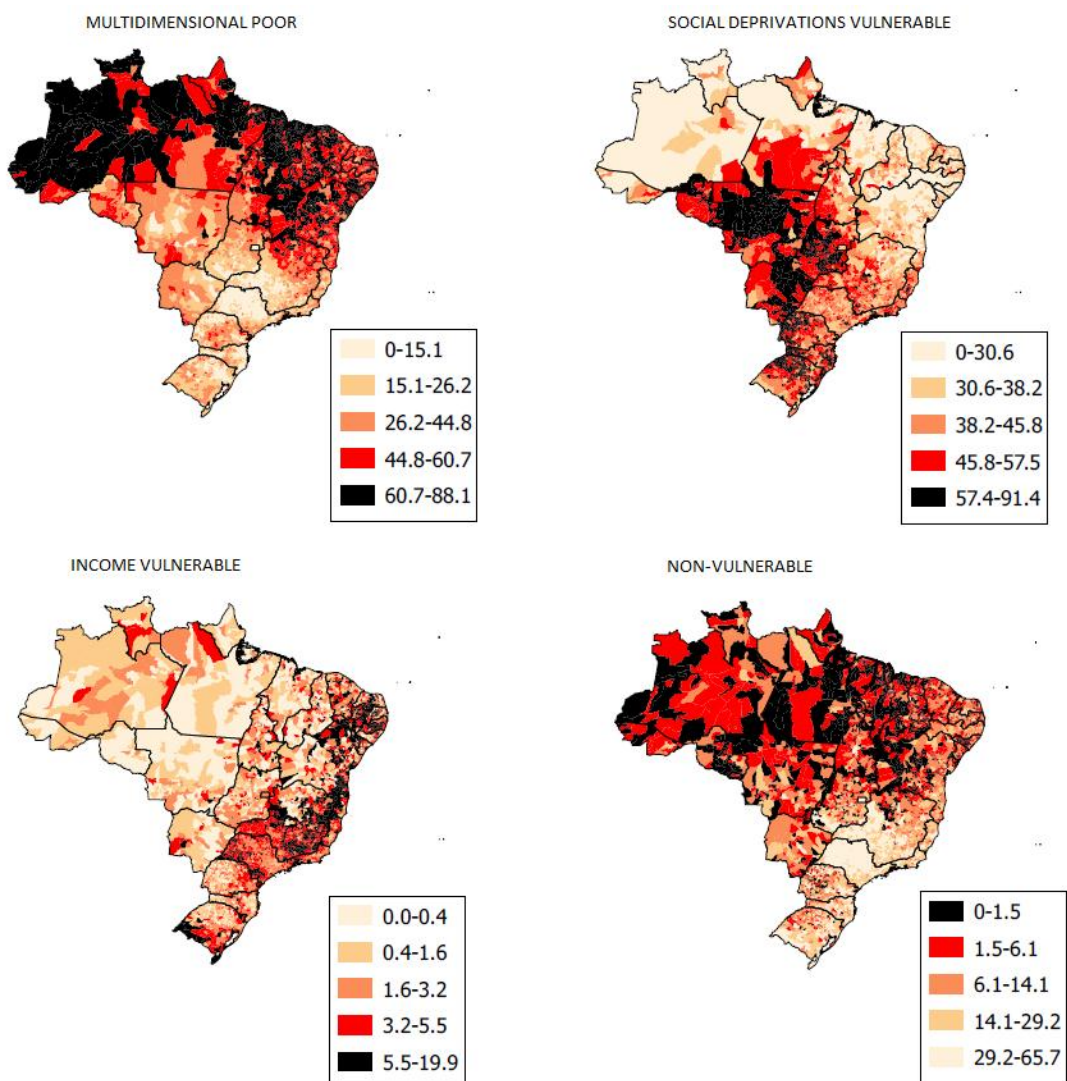
Source: IBGE, Demographic Census 2010

Exploring correlations among the dimensions assessed at the municipal level corroborates the results found at the aggregate level. The Pearson correlation coefficients in Table 2 are high between income, bedroom density and access to basic services at the dwelling. These dimensions are the most important for multidimensional poverty. The main deprivation observed is service access. It drives the mean deprivations up (multidimensional poverty intensity). On the other hand, the municipality population has low correlation with the dimensions and multidimensional poverty, with a moderate effect (negative correlation) on education levels.

Table 2
Population by municipalities, social and income deprivations, multidimensional poverty and mean deprivations - Pearson correlation coefficients (N=5565 municipalities)

	Population	Deprivation							
		Education	Social Security access	Bedroom density	Dwelling service access	At least one deprivation	Income below 60% of the median	multidimen sional poverty	Mean deprivation s
Population	**1,000**	-0,240	0,003	0,044	-0,134	-0,156	-0,076	-0,077	-0,130
Education	-0,240	**1,000**	0,077	-0,070	0,442	0,528	0,435	0,433	0,497
Social Security access	0,003	0,077	**1,000**	0,303	0,271	0,313	0,175	0,199	0,446
Bedroom density	0,044	-0,070	0,303	**1,000**	0,304	0,343	0,659	0,667	0,522
Dwelling service access	-0,134	0,442	0,271	0,304	**1,000**	0,979	0,582	0,663	0,947
At least one deprivation	-0,156	0,528	0,313	0,343	0,979	**1,000**	0,635	0,703	0,963
Income below 60% of the median	-0,076	0,435	0,175	0,659	0,582	0,635	**1,000**	0,990	0,709
multidimensional poverty	-0,077	0,433	0,199	0,667	0,663	0,703	0,990	**1,000**	0,776
Mean deprivations	-0,130	0,497	0,446	0,522	0,947	0,963	0,709	0,776	**1,000**

Source: IBGE, Demographic Census 2010
Note: all correlations are significative at the p<0.001 level

In the decomposition of the adjusted incidence of multidimensional poverty (M_0 - Graf 3), it may be observed that the access to services is a significant dimension in Brazil. Lack of access to the services at the dwelling contributed to 26.5% of M_0 in 2000 and 30% in 2010. Regional differences are relevant here, since this share ranges from 18.9% in the Southeast to 39.4% in the Central-West. The second dimension with greater weight in the national indicator in 2010 was education (24.1%) followed by the income (22.7%). Formalization of the labor market and the expansion of income transfer programs contributed to the access to social protection. The contribution of this dimension to M_0 reduced significantly between 2000 (15.5%) and 2010 (9.4%). In the Northeast region, which concentrates most of the beneficiaries of *Bolsa Família* program, this contribution is further reduced to 6.8% (Graph 3).
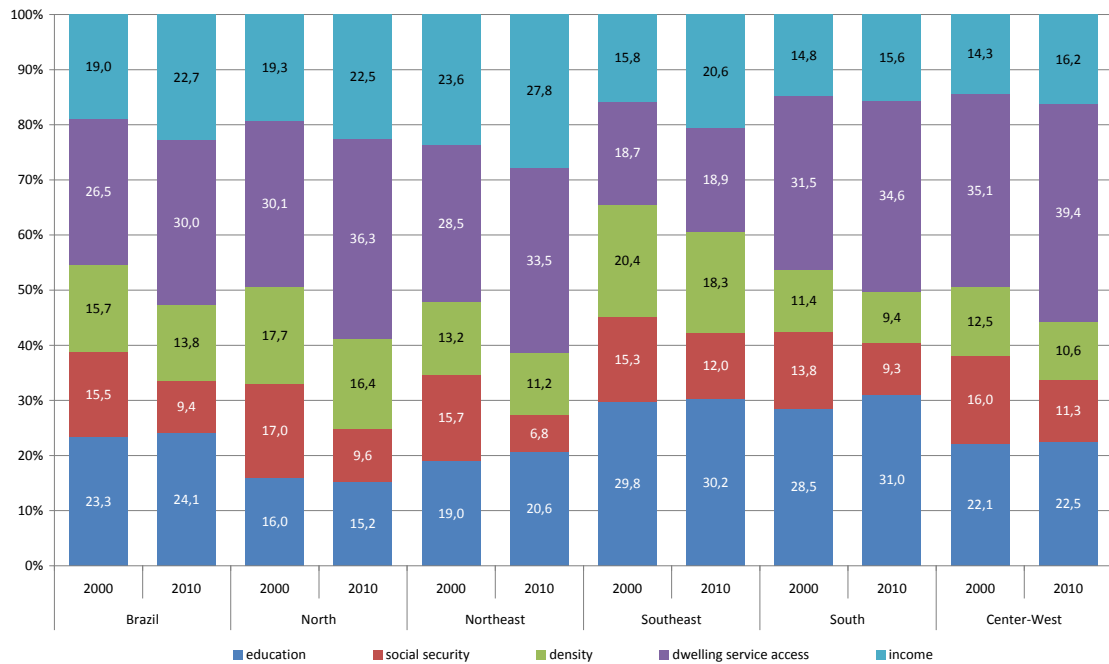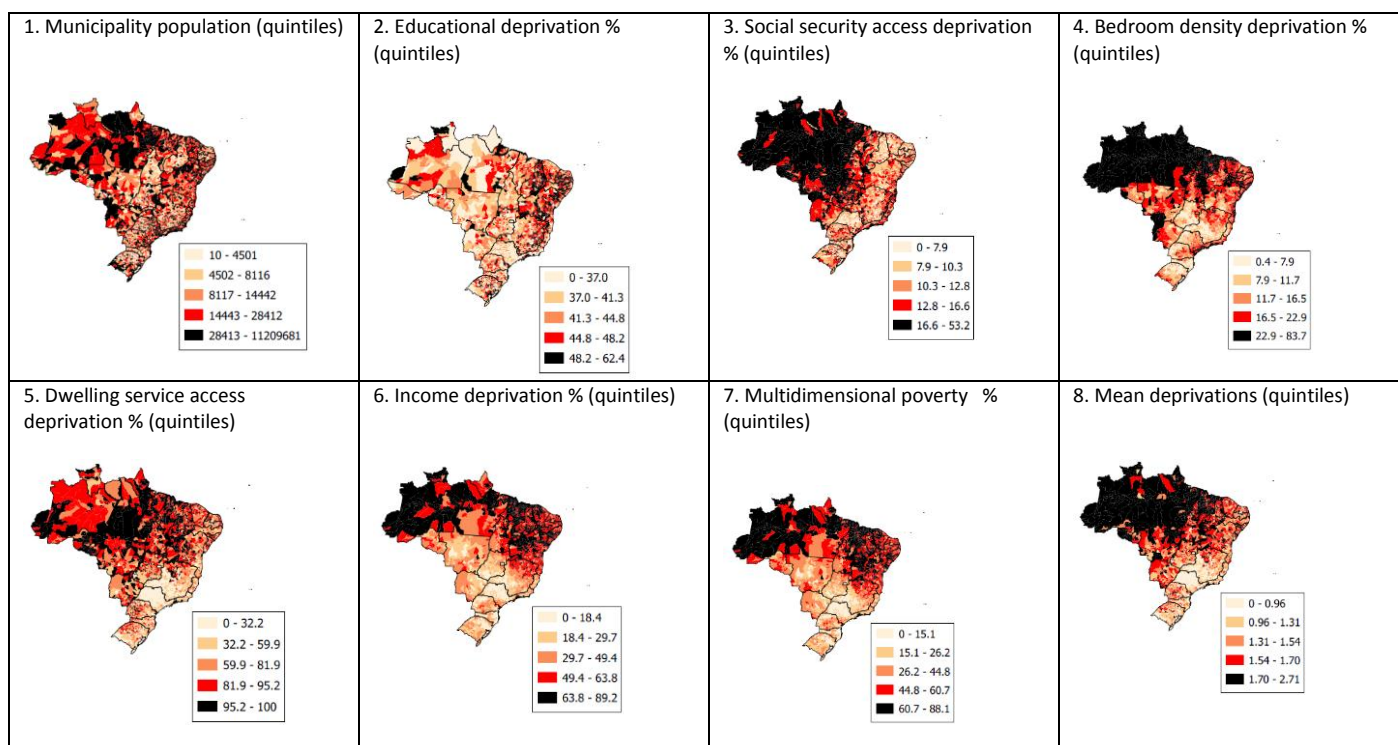
Source: IBGE, Demograpfic Census 2000/2010

Finally, Figure 3 provides a comparison of the different types of deprivations and vulnerabilities with a set of 8 maps that reflect the spatial distribution of each indicator. The 1st map shows that the country is composed mostly by municipalities with small populations (the top quintile of the distribution starts with less than 30 thousand inhabitants and end up with more than 11 million, the population of São Paulo). The 2nd map shows that the distribution of the population with educational deprivation is widespread throughout the country, with a relative concentration in North and Northeast municipalities. The lack of access to social protection (social security benefits, transfers or contributions through formal work) is typical of the North and Central-West. In these two regions, there is low formalization of the workforce and huge distances make the vulnerable population harder to reach. The territorial and cultural characteristics of the North (Amazon) are also responsible for the prominence of this region with regards to a higher proportion of people living in households with density per bedroom above 2.5.

The four remaining maps in Figure 3 provide information on access to basic services of the household, income, incidence of multidimensional poverty (as seen in Figure 2) and the average number of deprivations per municipality. The lack of access to services is characteristic of the interior of the country. Low income is more present in North and Northeast. The similarity with the multidimensional poverty map shows a high correlation between income below the line and social deprivations: most of those with *per capita* income below 60% of the median have as well at least one of the social deprivations assessed. The North has the highest mean accumulated deprivations, as described by the 8th map.

Figure 3

Dashboard with 8 maps: Population, deprivations by type, multidimensional poverty and mean deprivations (by quintiles - %)

1. Municipality population (quintiles)	2. Educational deprivation % (quintiles)	3. Social security access deprivation % (quintiles)	4. Bedroom density deprivation % (quintiles)

Legend (map 1):
10 - 4501
4502 - 8116
8117 - 14442
14443 - 28412
28413 - 11209681

Legend (map 2):
0 - 37.0
37.0 - 41.3
41.3 - 44.8
44.8 - 48.2
48.2 - 62.4

Legend (map 3):
0 - 7.9
7.9 - 10.3
10.3 - 12.8
12.8 - 16.6
16.6 - 53.2

Legend (map 4):
0.4 - 7.9
7.9 - 11.7
11.7 - 16.5
16.5 - 22.9
22.9 - 83.7

5. Dwelling service access deprivation % (quintiles)	6. Income deprivation % (quintiles)	7. Multidimensional poverty % (quintiles)	8. Mean deprivations (quintiles)

Legend (map 5):
0 - 32.2
32.2 - 59.9
59.9 - 81.9
81.9 - 95.2
95.2 - 100

Legend (map 6):
0 - 18.4
18.4 - 29.7
29.7 - 49.4
49.4 - 63.8
63.8 - 89.2

Legend (map 7):
0 - 15.1
15.1 - 26.2
26.2 - 44.8
44.8 - 60.7
60.7 - 88.1

Legend (map 8):
0 - 0.96
0.96 - 1.31
1.31 - 1.54
1.54 - 1.70
1.70 - 2.71

Source: IBGE, Demographic Census 2010

4. Conclusions

Brazil needs to progress with respect to the discussion on living standards, inclusion of the (different types of) vulnerable population and realization of fundamental social rights in order to foster citizenship and human dignity for individuals and their families. If the goal to build an equitable society is set, poverty measures that encompass the multidimensionality of this phenomenon and the specific historical moment of the country are a necessary step. At the same time, some factors may delay the achievement of this goal: Brazil has a vast territory, regional diversity, fragmentation of social policies and a variety of destitute populations: informal workers, adults without formal education, long-term unemployed, "stock" of poor and illiterate people with violated rights, etc. Yet these factors should not prevent the action.

It is essential that Brazil put forward the necessary agenda to construct policies and to raise awareness to the goal of building this 'new' and more inclusive society. This discussion should include researchers, policy makers and civil society. Currently, Brazil does not even have a minimum consensus about an official poverty line (or lines); not even a simple monetary line. On the other hand, Brazil has in its favor, for this discussion, consolidated databases from IBGE household surveys. A limited yet noteworthy literature is also an asset (e.g., Rocha, Osório et al., Soares et al., Barros et al., Lavinas). Finally, the country has a legal framework that includes the realization of many fundamental social rights in its Federal Constitution (1988).

In comparison, Mexico seems to have advanced considerably with the debate by establishing the objective to fight poverty as a law. This country defines poverty as a multidimensional

phenomenon. Besides, a specific administration has been created for public policy evaluation: CONEVAL, which has administrative and management autonomy. Its mandate includes the responsibility to promote and consolidate public policy measurement and methodological discussions, along with INEGI (Mexican National Statistics Office), the academia and policymakers. The mentioned methodology using indicators of vulnerability (improvement of the UBN approach, including income), and based on the realization of rights is one of the results of this initiative.

The effort undertaken in the present paper is a kickoff to our research team in regards to vulnerability indicators in Brazil. Here, Census data was analyzed, since this source is prone to be studied with a spatial perspective. The indicators may be disaggregated at the municipality level and easily compared through time (2010 and 2000).

According to results, poverty in the country is undoubtedly multidimensional. Correlating social deprivations and income showed that most of the poor in a monetary perspective suffer from at least one of the assessed social deprivations. Access to services at the dwelling (piped water, sanitation, garbage collection, electricity) plays a decisive role.

Concerning the four groups/quadrants in the analysis, (1) vulnerability by income only (without social deprivation) concerns less than 4% of the population in 2010, while (2) the vulnerability by social deprivations (with *per capita* income above 60% of the median) reaches almost 40%. When you combine the income vulnerability and social deprivations, the (3) multidimensional poverty group is created, which represented approximately 27.5% of the population. The (4) non-vulnerable in 2010 corresponded to 29.7% of the population, an improvement over 2000, when only 22.7% of the population was non-vulnerable.

Regarding the spatial approach, present results corroborate and deepen the findings of Bagolin and Avila (2006), which have shown the territorial diversity (by states) of vulnerabilities, depending on the chosen indicator. The spatial diversity in Brazil calls for focused policies with different emphasis.

In spite of progress, much work remains to be done and a large debate is important to the definition of several key points of the proposed methodology, in order to make the exercise more complete and tailored to Brazilian characteristics. Future studies may: (1) develop a discussion about levels and thresholds adopted when using the Mexican methodology (poverty line, density of residents, etc.); (2) incorporate dimensions inexistent in the Brazilian Census (access to health services, food security, other variables about the quality of the dwelling) and the definition of the threshold to define poverty with social deprivations (at least one, two, more deprivations). This direction involves as well the debate about the possibility of using other sources and databases, such as the Household Budget Survey (POF/IBGE), and administrative records; (3) due to lack of time, the present contribution did not explore the severity of poverty neither incorporate measures of inequality in the analysis, which were present in the Mexican exercise; (4) produce a detailed profiling of the households within each type of poverty (and consequently calling for different policy interventions); (5) introduce the urban x rural dimension, with a definition going beyond the legal criteria used until now.

References

ALKIRE, S.; FOSTER,J. **Counting and Multidimensional Poverty Measurement**, OPHI Working Paper Series No. 07, Oxford: OPHI, 2007.

BAGOLIN, I. ; ÁVILA, R. *Poverty distribution among the Brazilian States: A multidimensional analysis using capabilities and needs approaches*. Anais ANPEC, Salvador: 2006. Disponível em: http://www.anpec.org.br/encontro_2006.htm

BARROS, P.; CARVALHO, M.; FRANCO, S. *Pobreza multidimensional no Brasil*. Texto para discussão n. 1227. Rio de Janeiro: IPEA, 2006.

CONEVAL. "Metodología para la medición multidimensional de la pobreza en México". *Realidad, Datos y Espacio: Revista Internacional de Estadística y Geografía* v. 2, n. 1, p. 36-63. Aguascalientes: INEGI, 2012.

DEDECCA, C.S. "A redução da desigualdade no Brasil, uma estratégia complexa" in BARROS, R.; FOGUEL, M.; ULYSSEA, G. *Desigualdade de renda no Brasil: uma análise da queda recente*, Brasília: IPEA, 2007.

DRAIBE, S.; RIESCO, M. *Estado de Bienestar, desarrollo económico y ciudadanía: algunas lecciones de la literatura contemporánea.* (Serie estudios y perspectivas, 55) Mexico, DF: CEPAL, 2006.

DUCLOS, J.-Y.; ARAAR, A. *Poverty and Equity Measurement, Policy, and Estimation with DAD*, Berlin and Ottawa: Springer and IDRC. 2006. Disponível em: https://www.google.com.br/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0C DAQFjAA&url=http%3A%2F%2Fwww.ecn.ulaval.ca%2F~jyves%2Fpublications%2Fpedag.pdf&ei =rhZkUYm0Mcfq0AGG74G4AQ&usg=AFQjCNHBi0hX6pYIMTj7QNH9ApaZIa3LPQ&sig2=XhkOnt qsU1_Kx30umB6TEA&bvm=bv.44990110,d.dmQ Acesso em abr. 2013.

ESPING-ANDERSEN, G. "Three worlds of Welfare Capitalism" in PIERSON, C.; CASTLES, F. (ed.) *The welfare state reader.* Cambridge(UK): Polity press, 2000.

FERES, J. C.; MANCERO, X. "El método de las necesidades básicas insatisfechas (NBI) y sus aplicaciones a América Latina". *Series Estudios Estadísticos y Prospectivos*. Santiago: CEPAL, 2001.

GASPARINI, L.; ESCUDERO, W.; MARCHIONNI, M.; OLIVIERI, S. *Multidimensional poverty in Latin America and the Caribbean - New evidence from the Gallup World Poll®*. CEDLAS WP 100. Buenos Aires: CEDLAS, 2011. Disponível: http://cedlas.econo.unlp.edu.ar/archivos_upload/doc_cedlas100.pdf Acesso: Mar 2013

GUIMARÃES, J.; JANNUZZI, P. *IDH, Indicadores sintéticos e suas aplicações em Políticas Públicas: uma análise crítica*. Revista Brasileira de Estudos Urbanos e Regionais (ANPUR), Salvador, v. 7, n.1, p. 73-90, 2005.

IBGE. *Mapa de Pobreza e Desigualdade - 2003*. DVD. Rio de Janeiro: IBGE, 2008.

IBGE. *Indicadores sociais municipais: uma análise dos resultados do universo do censo demográfico 2010*, Rio de Janeiro: IBGE, 2011.

IBGE. *Síntese de indicadores sociais 2012 - uma análise das condições de vida da população brasileira*. Rio de Janeiro: IBGE, 2012.

IPEA. *Objetivos de desenvolvimento do milênio: relatório nacional de acompanhamento.* Brasília, DF: IPEA, 2010. Disponível em: <http://agencia.ipea.gov.br/images/stories/PDFs/100408_relatorioodm.pdf>. Acesso em: out. 2012.

IPEADATA. *Metodologia na determinação das linhas de pobreza e indigência (por insuficiência no consumo de calorias por dia)*. S.d.
Disponível em: http://www.ipeadata.gov.br/doc/metodologiaLP(Revisada).pdf
Acesso em: abr. 2013

KERSTENETZKY, C. L. Desigualdade e pobreza: lições de Sen. *Revista Brasileira de Ciências Sociais*, São Paulo: Associação Nacional de Pós-Graduação e Pesquisa em Ciências Sociais - ANPOCS, v. 15, n. 42, p. 113-122, fev. 2000. Disponível em: <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-69092000000100008&lng=en&nrm=iso>. Acesso em: nov. 2012.

LAVINAS, L; COBO, B. *O direito à proteção social: perspectivas comparadas.* Análises e Propostas N.37, São Paulo: F.E.S, 2009

NARAYAN, D*. Voices of the poor - Can anyone hear us?* Washington, DC: BIRD/Oxford University Press, 2000.

NERI, M. Pobreza e políticas sociais na década da redução da desigualdade. *Nueva Sociedad: Democracia y Política en América Latina*, Caracas: Fundação Friedrich Ebert, 2007. Disponível em: <www.nuso.org/upload/articulos/p8-4_1.pdf>. Acesso em: nov. 2012.

OLIVEIRA, J. S. de. (Org.). *O traço da desigualdade social no Brasil.* Rio de Janeiro: IBGE, 1993. 43 p. Disponível em: <http://biblioteca.ibge.gov.br/colecao_digital _publicacoes.php>. Acesso em: nov. 2012.

OLIVEIRA, L. S. de. *Três ensaios sobre pobreza multidimensional.* Tese de Doutorado, IE/UFRJ, 2010.

UN. *Report on indicators for promoting and monitoring the implementation of human rights*. HRI/MC/2008/3. New York: United Nations, 2008. Disponível em: <http://www2.ohchr.org/english/issues/indicators/docs/HRI.MC.2008.3_en.pdf>, Acesso em: out. 2012.

OSORIO, R.; SOARES, S. SOUZA, P. *Erradicar a pobreza extrema: um objetivo ao alcance do Brasil*. TD 1619, Rio de Janeiro: IPEA, 2011.

ROCHA, S. *Pobreza no Brasil: afinal, de que se trata?* Rio de Janeiro: Editora FGV, 2003.

ROCHA, S. *Pobreza no Brasil - A Evolução de Longo Prazo (1970-2011)*. Estudos e Pesquisas N.492 (XXV Fórum Nacional), Rio de Janeiro: INAE, 2013.

SABÓIA, A. L. COBO, B. *Uma Contribuição para a Discussão sobre a Construção de Indicadores para Implementação e Acompanhamento de Políticas Públicas*. Trabalho apresentado no XV Encontro Nacional de Estudos Populacionais, ABEP, realizado em Caxambu – MG – Brasil, de 18 a 22 de Setembro de 2006.

SABÓIA, A.; COBO, B. *Um panorama recente da desigualdade no Brasil a partir dos dados da PNAD 2002*. Rio de Janeiro: IBGE, 2004. 40 p. (Textos para discussão. Diretoria de Pesquisas, n. 16). Disponível em: <ftp://ftp.dpe.ibge.gov.br/gdi/texdisc/Texto16-04.pdfm>. Acesso em: nov. 2012.

SANTOS, M..; LUGO, M..; LOPEZ-CALVA, L. "Refining the Basic Needs Approach: A multidimensional analysis of poverty in Latin America. Trabalho apresentado no Seminario internacional: Medición multidimensional de la pobreza en América Latin, 2010. Disponível em:
http://www.cepal.org/deype/noticias/noticias/0/38360/Santos_Lugo__Lopez_Calva__Cruces_and_Battiston.pdf. Acesso em: mar. 2009

SEN, A. *Inequality reexamined*. Cambridge, Mass.: Harvard Univ. Press, 1992.

SEN, A. *The standard of living*. New York: Cambridge University Press. 1987.

SOARES, S. *Metodologias para estabelecer a linha de pobreza: objetivas, subjetivas, relativas e multidimensionais*. TD 1381, Rio de Janeiro: Ipea, 2009. Disponível em: <http://www.ipea.gov.br/sites/000/2/publicacoes/tds/td_1381.pdf>. Acesso em: abr. 2009

SPICKER, P. "Definitions of poverty: twelve clusters of meaning. In: The International Glossary on Poverty. Org. Gordon, D. and Spicker, P. (eds) (1999). London: Zed Books. (pág.229-243).

STIGLITZ, J.; SEN, A.; FITOUSSI, J. *Report by the Commission on the Measurement of Economic Performance and Social Progress*. 2009. Disponível em: <http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf>. Acesso em: out. 2012.

UNDP. Human Development Report, 2011. New York: UNPD, 2011. Disponível em: http://hdr.undp.org/en/media/HDR_2011_EN_Complete.pdf Acesso em mai 2013.

UNDP. Human Development Report, 2013. New York: UNPD, 2013. Disponível em: http://hdr.undp.org/en/media/HDR_2013_EN_complete.pdf Acesso em mai 2013.

WORLD BANK. *More than a pretty picture: using poverty maps to design better policies and interventions*. Washington DC: World Bank, 2007. Disponível em: http://siteresources.worldbank.org/INTPGI/Resources/342674-1092157888460/493860-1192739384563/More_Than_a_Pretty_Picture_ebook.pdf Acesso em mai 2013.

ZIMMERMANN, C.; SILVA, M. "O princípio da desmercantilização nas políticas sociais". In: Caderno CRH, Salvador, v. 22, n. 56, p. 345-358, Maio/Ago. 2009

Appendix - Brazil - Regions and States