Designing for equality: Conceptualising a tool for strategic territorial planning

de la Espriella, Carlos

Total number of authors:
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Carlos de la Espriella*

Housing Development & Management (HDM), Lund University, P.O. Box 118, SE-221 00, Lund, Sweden

Abstract

The struggle for equality is fundamental to the reduction of poverty in Central America. Besides, one of the foremost goals of urban spatial planning, when implementing social policies, is to contribute to the reduction of poverty. This is done by producing a list of territorially-based actions and selecting those suitable for the implementation of social policies developed at national level. However, urban planners working with local authorities in the Region face political, managerial, financial and technical limitations for adequately conducting this task. Of particular interest to this paper are the limited options they have for technically assessing the impact that territorially-based actions have on reducing inequality, and therefore poverty.

An operational methodology is proposed in this paper, as a step forward to enable planners to simulate, assess and monitor the impact of territorially-based actions on inequality, and to promote the use of evidence from statistical data when proposing, implementing and monitoring those actions. The methodology is introduced by inscribing it in the context of urban spatial planning, presenting the concepts that underpin it, describing how it is intended to work, and illustrating its use through the presentation of an empirical study.
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1. Introduction

Urban planners who are working with local authorities of medium-sized cities of Central America have, at their disposal, limited operational methodologies to compare—based on statistical data—the effects of

proposed territorially-based actions[1] on reducing inequality. These actions should be identified and selected by local planners and public decision makers to implement social policies developed at national level.

This issue is inscribed in a broader context in which political, social and economic inequalities present serious obstacles to the reduction of poverty and further development in respect of, at least, the following three reasons. Firstly, because inequality is passed down from generation to generation (a phenomenon known as the poverty trap),[2] thus perpetuating the issue of poverty (Fainstein, Gordon, & Harloe, 1992; van Kempen & Marcuse, 1997). Secondly, because in the presence of imperfect markets, inequality leads to unequal opportunities and, subsequently, to missed or wasted productive potentials, as well as to the ineffective allocation of resources (The World Bank, 2006b, pp. 7, 8). Lastly, because inequality leads to the establishment of those economic and institutional arrangements that systematically favour the interests of the more influential (The World Bank, 2006b, p. 2).

With this in mind, the main objective of this paper[3] is to propose an operational methodology that might enable urban planners to design for equality using evidence drawn from statistical data. The proposed methodology is referred to as the '*Tool for Strategic Territorial Planning*' (TSTP), and it is introduced here by (i) inscribing it in the modern planning context, (ii) presenting the concepts that underpin it, (iii) describing how it is intended to work and (iv) illustrating its use through the presentation of an empirical study.

Following this introduction, the second section in this paper describes how the TSTP is inscribed in the urban planning context and presents the main characteristics of the proposed methodology. The third section presents the concepts and methods that ground the TSTP as related to the study of poverty, inequality and data management. The fourth section describes the three phases that users of the TSTP should follow, including the steps required for defining the habitat-related dimensions of poverty to be evaluated (Phase A); the steps required to identify and target deprived urban areas (Phase B); and the steps required to define and prioritise those specific territorially-based actions necessary for the prevention of urban residential segregation (URS) or to de-segregate deprived urban areas (Phase C). The last section of the paper presents the conclusions.

2. How the tool for strategic territorial planning is inscribed in the current urban planning context?

2.1. The current context of urban spatial planning

The arrival of neo-liberalism and decentralisation processes in the 1980s and early 2000s focused attention on the problems of master planning and urban management. The critique to the master planning approach is that it focuses predominantly on technocratic capabilities and frequently it is too much time consuming, expensive and unrealistic for its implementation. Hence, the concept of urban management comes into being, although master planning continues to be implemented, as most new approaches do not completely replace the previous ones but actually overlap them. The critique to urban management is that it is too technocratic, and fails to respond fast enough to changes in the external environment. Arising from these problems comes a demand from civil society to address the needs of the poor in a manner that reflects their priorities. The response drives attention towards a governance approach that emphasises participation and inclusion (see Mattingly, 2001; Taylor, 2004).

The spatial planning we referred to is an urban planning concept introduced during the governance approach. Spatial planning aims to equip its users to better cope with the future, as part of the governance agenda. Its goal is to make direct improvements to the quality of life, with special attention given to poverty and inequality. It deals with elements such as roads, walkways, street lighting, electricity and piped water, all of which have physical and territorial dimensions. The act of planning spatial urban elements refers to those

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[1]The term 'territorially-based actions' refers to actions that need to be implemented in the land (the territory), and are planned by local urban planners such as developing housing projects or enlarging a street lighting network.

[2]Azariadis and Stachurski (2005) define a poverty trap as any self-reinforcing mechanism which causes poverty to persist. It arises from market and institutional failure, and acts as a barrier to upward social mobility.

[3]This paper is an attempt to describe the concepts and steps that were used to conduct a series of case studies, and to articulate them in a proposed methodology that could be used for future practice. The paper was carried out within a framework of doctoral studies supported by a grant from Sida/SAREC.

processes, which seek to determine what, when, to what extent, and who will benefit from a set of territorially-based actions requiring implementation (see Mattingly, 2001 to expand on these concepts). Strategic planning practice is becoming the dominant methodology for implementing urban planning processes, including those of spatial planning. It is a means of bringing technical rationality into political decision making, which involves prioritising urban problems and subsequently committing to plans of action that realistically embody available resources (Taylor, 2004).

Having introduced the context of spatial planning, let us move on to the two issues to be raised in this paper and how the proposed methodology responds to them. One issue refers to the manner and criteria of assigning priorities to the, often, long list of alternative territorially-based actions of public decision makers in rapidly urbanising countries, where economies are undergoing development, and decentralisation processes are emerging. Rarely do they have available an investment plan, a reliable and predictable flow of resources, or a poverty impact assessment based on statistical data—the lack of these elements leaves the decision-making process more open to the influence of only the national and local politics. In five Central American cities that were visited by the author, it was found that plans were presented to the Municipal Councils with no other back up support than the power of persuasion to influence the decisions.[4]

The second issue refers to the limited tools available in medium-sized cities of developing countries, with which to apply strategic planning. In many countries, decentralisation processes occur at the same time as the programmes for improving the provision of services in urban areas. This draws attention to the provision of public services at local government level, revealing the limited their capacity is, in respect of the tasks they must now carry out (Mattingly, 2001, p. 5). Thus, instead of *leading* development, municipalities generally find themselves *following* development. Besides this, in Central America, the sequence of local government reforms is generating political consequences that are differential in nature. Large municipalities usually have a reasonably well-developed reserve of capacities that enable them to assume many of the new tasks, whilst the rest of the cities often do not (Ryan, 2004).

Therefore, the possible contributions of the proposed methodology lie in (i) the promotion of the use of statistical data as evidence for decision-making processes, and (ii) the introduction of an operational tool to promote more transparent, accountable and participatory urban decision-making processes, with a *sectoral* focus on urban spatial planning and with special attention given to the medium-sized cities.

2.2. The tool for strategic territorial planning (TSTP)

The aim of the TSTP is to enable its users to assess the impact on inequality reduction that proposed territorially-based actions might have at area- or city-based levels, and to raise evidence-based actions to local authorities and politicians, in a structured manner. The tool can be applied when proposing, implementing and monitoring such territorially-based actions, and it can be used for ex ante or ex post impact assessments. It combines cartography and statistical data using the unsatisfied basic needs (UBN) method, a URS approach, and geographic information systems (GIS).

The TSTP is a two-fold user tool. On the one hand, it was designed to be used by local urban planners to assist them in coping with politics and decentralisation processes. On the other hand, and in order to promote transparency, accountability and participation in decision-making processes, the tool can be made available to different groups of users: (i) urban planners working in municipalities of medium-sized cities to propose and assess territorially-based actions; (ii) local public decision makers to propose territorially-based actions and assign public resources and investments; (iii) researchers and civil society organisations to propose territorially-based actions and monitor the system; and (iv) central and regional planners to propose and monitor policies and programmes. This implies that local urban planners would not have to select a city because they would already be working in one, but the second group of users would be required to select a city, or cities, to be studied.

The TSTP is merely a tool that, when properly applied, might assist its user in (i) understanding and visualising the different territorial dimensions of inequality and poverty, (ii) identifying and targeting deprived urban areas, and (iii) defining, comparing and prioritising specific territorially-based actions, which are

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[4]This information is drawn from observations and literature collected during a series of study visits to five cities in Central America: Liberia and San Ramón in Costa Rica, Choluteca and Comayagua in Honduras, and Chinandega in Nicaragua.

required in order to effect the reduction of local inequalities and poverty. The decisions of whether or not to implement those actions, ultimately lies with the body of urban governance and urban politics.

To optimise the effectiveness of the tool, it is recommended that the users—in a concerted way—analyse the outputs and prioritise proposed territorially-based actions before preparing an action plans that would later require the commitment of local, public decision makers.

3. The conceptual and methodological basis of the TSTP

A study by The World Bank (2006a) suggests that the implementation of pro-poor actions (those which decrease inequalities) lag behind pro-growth ones (those which foster economic growth) in respect of the efforts to reduce poverty in Latin America. Its argument focuses on the fact that the so-called Washington Consensus reforms[5] (pro-growth) have been applied for more than 15 years in the Region and yet, poverty has not been reduced. Conversely, inequality persists and is now identified as a serious obstacle to poverty reduction and further development in the Region (Ferranti, Perry, Ferreira, & Walton, 2004 describe the reasons for inequality in Latin America).

Therefore, the current debate on poverty reduction centres on two key concepts: poverty and inequality. These concepts form the foundation for the development of the TSTP, together with the need to manage available data effectively. Thus, the issues of poverty, inequality and data management are the cornerstones of the conceptual and methodological development of the TSTP.

To build on these three cornerstones, this section presents the definition of poverty, the definition of inequality, as well as the reasons for selecting the UBN method to measure poverty, the selection of the index of dissimilarity (D) to assess inequality, and the selection of the concentration index (C) to prioritise territorially-based actions. It also presents the selection of GIS venues as the data manager for the TSTP.

3.1. Poverty

In this paper, the concept of 'poverty' follows the idea of 'capability deprivation', which is further developed in Sen (2000). Sen sees poverty as "*the lack of the capability to live a minimally decent life*" (p. 4), which limits the possibilities and opportunities people have to achieve a life considered to be decent in their context. This concept of poverty is multidimensional, including a series of dimensions besides the economic ones, linked to the social, cultural and political aspects that are lacking, or absent, for individuals or households (Cardona, Kruijt, Oude, Pérez, & Sojo, 2000; Perlman, 2004). Some of these dimensions include variables that are linked to the habitat, such as a lack of domiciliary services and infrastructure, and poor housing conditions, which are especially relevant to this paper.

3.2. Measurements of poverty

Mechanisms to determine whether or not household are poor are known as 'methods for poverty measurement'.[6] The poverty-line is the traditional method used to measure poverty. It measures the availability of the essential pre-requisites for human sustenance such as food, shelter, clothing, health and education (UNDP, 1996 describes the steps used in the poverty-line method).

The main limitation of using traditional methods to measure poverty is that they focus only on economic indicators (e.g. household income and expenditure, commodity prices, etc.), thus defining the capability of an

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[5]The World Bank Group allocates loans to countries on the conditions that they accomplish a list of reforms, which became known as the Washington Consensus Reform, including, for example, the lifting of their trade barriers, de-regulating and privatising their industry and adopting austerity plans to stop deficit spending and to reduce inflation. Sanchez (2006) cites an analysis of The World Development Movement, which found that of the 450 conditions, the World Bank and the IMF imposed their agreements on 50 countries, only 11 were not based on the orthodox Washington Consensus formula.

[6]Feres and Mancero (2001, p. 7) divides poverty measurement into two stages: identification and aggregation. After running the first stage, one obtain a list of those households considered as being, and not being, poor. After running the second stage, one obtains the magnitude and depth of deprivation of the population as a whole, which is the result of synthesizing one single indicator out of calculating various poverty indices.

individual or a family to live a decent life exclusively in relation to the availability of economic means, and consequently, omitting and/or leaving aside other dimensions of poverty, such as those linked to habitat, which can be resisted via the urban spatial planning process, and are of special relevance to the TSTP. Other limitations are: the diversity of poverty lines caused by the arbitrary definitions of poverty, and the difficulties of using the international poverty line (that proportion of the population living on below 2US$ per day) for international comparisons (Cardona et al., 2000; Perlman, 2004; Rakodi, 1995).

Therefore, in order to achieve the development of the TSTP—there is a clear need to identify territorial differences between population groups in respect of needs and satisfactions; a need to establish a measure that includes those dimensions of poverty and well-being related to habitat that includes variables linked to public and social services (e.g. social housing, location and the physical characteristics of education, health and police centres, etc.); household services (e.g. domiciliary provision of water, sewage, electricity, etc.); and infrastructure (e.g. road networks, transportation, water, sewage, electric networks, etc.). Furthermore, there is a need to identify a method that would enable urban planners to mitigate such specific dimensions of poverty via the implementation of pro-poor territorially-based actions; there is also a need to identify a method that studies the phenomenon at area- and city-based levels.

The UBN method fulfils those requirements and, therefore, was selected to measure poverty in the TSTP. The UBN method assesses different dimensions of poverty in terms of living conditions and satisfaction at a household level. It allows the generation of the index of total poverty (TP), which is an index composed of selected dimensions of poverty. The TP is measured for every territorial unit and is equivalent to the proportion of households reporting as having, or not having, these UBNs. As a result, when a territorial unit is said to be 'poor' or 'very poor', it means that it has a high, or very high, proportion of households reporting as having those UBNs that comprise the specific TP. The TP is used in the proposed TSTP in order to identify and target deprived urban areas (see Phase B in Section 4).

The main limitations of the UBN method are: difficulties in carrying out longitudinal studies when the types of information varies over the years; its limited discriminative capacity when the housing stock is relatively consolidated, since a large proportion of the degree of poverty in a household is inferred by the quality of its shelter; its limited capacity for defining and targeting deprived urban areas, when a significant proportion of the city is already classified as poor, which is a fundamental objective when applying the TSTP (for more details on UBN see Feres & Mancero, 2001; UNDP, 1996).

This latter limitation suggests the need to combine the UBN method with another method. Based on the pro-poor character of the TSTP, measurements of inequality are the natural option to be combined with the UBN method.

3.3. Inequality

The term 'equality' means that "*individuals should have equal opportunities to pursue a life of their choosing and be spared from extreme deprivation in outcomes*" (The World Bank, 2006b, p. 2). In this context, the term 'inequality' refers to differences of opportunities that an individual, or a group of people, have in relation to the opportunities of an average member of the population in terms of his/her economic, social and cultural differences.

In Latin America, the study of inequality combines the following three specific approaches: (i) it follows the modern theories of URS, the origins of which lie in the combination of individual preference, collective behaviour and institutional factors (Galster & Hill, 1992; Massey, Condran, & Denton, 1987); (ii) it groups populations based on their socio-economic characteristics in order to fully understand the presence of deep, entrenched inequalities and the perpetuation of poverty in the region (Arriagada & Rodríguez, 2003, p. 10; Rodríguez, 2001, p. 14), and lastly (iii) it emphasises the negative effects of URS.

One territorial representation of the polarisation generated by economic, social and political inequalities, is the concept of URS (The World Bank, 2006a), which is a mechanism of social exclusion in the same way as transportation and labour segregation are. URS refers to the territorial grouping of dwellings of different population groups in cities. These population groups can be defined in (i) socio-cultural terms including aspects of race, language, nationality; (ii) demographic terms including age, growth rate or family composition; or (iii) socio-economic terms such as income, education, living conditions, occupation, etc. (for different

definitions of URS see Galster, 1982; Marcuse, 1997; Rodríguez, 2001; Sabatini, 2003; Tiebout, 1961; White, 1983).

3.4. Assessment of inequality

Qualitative and quantitative methods have long been developed to assess and analyse territorial inequality and URS. Quantitative methods assessing URS deal with issues of urban morphology and urban dynamics in relation to the grouping and interaction of homogeneous populations. On the other hand, qualitative methods assess values, degree of satisfaction, expectations and perceptions of individuals and communities. Quantitative methods were selected because they clearly comply better with the objectives of the TSTP, albeit being aware of the limitations of not including subjective issues in the assessment of URS.

Massey and Denton (1988) conceptually classified most of the existing indicators that use quantitative methods in relation to five dimensions of URS: evenness, exposure, concentration, centralization and clustering. After testing all indicators of each dimension of URS, the dimension of *evenness* was selected to assess URS—and, therefore, territorial inequality—and combined with TP (see Section 3.2) they identify and target deprived urban areas (see Phase B in Section 4). The dimension of *concentration* was selected to compare territorially-based actions and define priorities based on the proportion of households benefiting from them (see Phase C in Section 4). Concepts and indicators of both dimensions are explained below:

- Evenness describes the degree of homogeneity present in the distribution of population groups amongst the territorial units of a city, and is often used as the conceptual embodiment of URS (see Massey & Denton, 1988, p. 283 for a detailed definition). Indicators of 'evenness' illustrate those territorial units of the city with a higher (similar or lower) degree of concentration of one population group compared to the general composition of the city as a whole. The most widely used indicator of evenness is the index of dissimilarity (D), which indicates the number of those members of the population that may need to be relocated to another territorial unit of the city in order to obtain a perfectly homogenous distribution throughout the city (Duncan & Duncan, 1955).
- D was selected to assess URS in the TSTP because (i) it has been used internationally since 1955 allowing comparisons, and (ii) its results can be disaggregated at territorial unit level, which is not the case for indicators of centralisation or clustering that show only a single final score for the whole city.
- "*Concentration refers to [the] relative amount of physical space occupied by [the studied population] group in the urban environment. Groups that occupy a small share of the total area in a city are said to be residentially concentrated*" (Massey & Denton, 1988, p. 289). The concentration index (C) divides the number of poor households in every territorial unit by the total area of the city (poor households per km^2). The higher the result, the more poor families share the same area, and therefore the higher the number of families benefiting from territorially-based actions there, which is why TSTP uses it as a criterion to prioritise territorially-based actions.

The main limitations of these two indicators are difficulties in doing longitudinal studies due to restrictions in obtaining comparable historical information, data distortion in the territorial borders, and differences encountered when changing the scale of the analysis (White, 1983, p. 1010).

3.5. Data management

GIS was selected as the data manager for the TSTP because it is a tool designed to deal with data related to a position on the Earth, which can overcome the restrictions of traditional data managing systems (e.g. worksheets, extensive databases, or manually).[7] GIS facilitates the storage of data from diverse sources as multiple attributes of geographical positions. It is also very useful for the analysis, description and illustration

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[7]Some of the main limitations of traditional data managing systems are that they only illustrate a few variables at any one time; they do not allow for ease of correction or for updating information; they are not very accurate, due, in part, for the need to repeatedly change the format.

of data in space and time, and it offers many specific advantages for predictive, prescriptive and descriptive analyses, such as easy visualisation, easy organisation of data and spatial modelling.

GIS was selected whilst still being aware of the possible existence of geographical contexts with lower access possibilities to GIS and IT applications. Nevertheless, during a series of study visits to Central American medium-sized cities, it was found that a growing availability of GIS information, indicating the applicability of this technology, is becoming more evident in the Region.

4. Application of the TSTP

This section describes three phases to be followed when applying the TSTP. Phase A involves selecting the habitat-related dimensions of poverty to be evaluated; Phase B includes identifying and targeting those deprived urban areas; Phase C focuses on defining and assigning priorities to a short list of specific territorially-based actions required to reduce inequality (see Fig. 1). Each phase, and its steps, is described below including relevant illustrations from the application of the TSTP in the city of Liberia, in Costa Rica.[8]
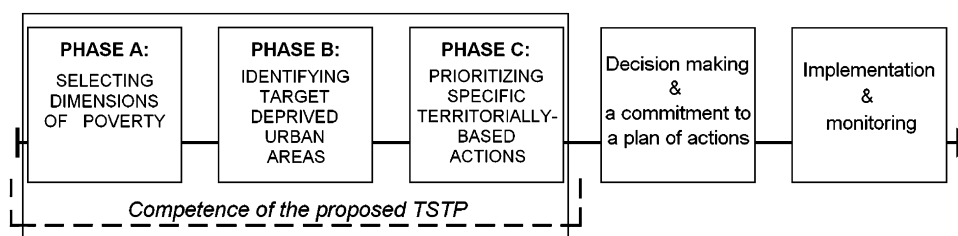

Fig. 1. Illustrates the phases required to apply the TSTP. *Source*: Author.

4.1. Phase A: selecting dimensions of poverty

This first sub-section outlines the three steps required for selecting those habitat-related dimensions of poverty to be studied, including: Step A1, where the objectives of the assessment are defined; Step A2, where dimensions of poverty to be evaluated are selected; and Step A3, in which sources of data are selected. Fig. 2 illustrates the process.
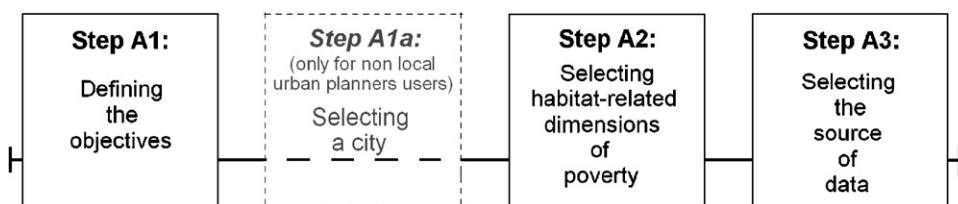

Fig. 2. Illustrates the steps of Phase A required for selecting the dimensions of poverty to be evaluated. *Source*: Author.

Step A1 consists in defining the objectives of the assessment. For example, local urban planners might need to compare the impact on poverty reduction, of a given set of territorially-based actions, or consultants, civil society organisations, or urban planners, at national or regional level might need to carry out a similar comparison in different cities, before modifying a programme, or proposing a policy amendment. The objectives of the Liberian study can also illustrate this step. They include (i) the analysis of the territorial correlation between those urban areas where social housing projects have been implemented and those urban

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[8]The study carried out in Liberia was selected to illustrate the different phases and steps of the TSTP. This study is one of the five case studies parts of a doctoral research to develop the TSTP. A detailed description of that particular empirical study can be found in de la Espriella, 2007.

areas with high degrees of inequality and poverty; (ii) the definition of a short list of territorially-based actions required to rise housing, infrastructure and services characteristics of the aforementioned unequal urban areas.

The TSTP is designed to be used by local urban planners to assist them coping with the political aspects and the decentralisation processes. Local urban planners would not have to select a city because they would already be working in one. The tool is also available to different users (e.g. researchers, civil society organisations, central or regional planners) to promote transparency, accountability and participation in decision-making processes. This requires the creation of a sub-step—to be applied only for users others than local urban planners—consisting in selecting the city, or cities, to be studied which is referred to as Step A1a.

Step A2 involves the selection of those habitat-related dimensions of poverty, which meet the core objective of the assessment. As mentioned in Section 3, the TSTP focuses on the habitat-related dimensions of poverty, which include those variables linked to social and public services, domiciliary services, and infrastructure. The following three habitat-related dimensions of poverty were selected for the empirical study carried out in Liberia: (i) access to housing, (ii) access to hygiene, and (iii) access to knowledge[9] (Table 1 shows the indicators and variables of each selected dimension of poverty).

Table 1
Dimensions of poverty, its urban indicators and variables

Dimensions of poverty	Urban indicators	Variables from census information
Access to housing	Poor housing qualities	Households living in transitory shelter or slums
		Households living in shelters with non-durable materials on walls, roof or floor
		Households living in shelters with materials of walls, roofs and floors in poor condition
	Overcrowding	Households with more than 2 persons per room
	No electricity	Households with no electricity for lighting
Access to hygiene	No water	Households consuming water from standpipes, wells on plot, existing water courses or ponds, or rain water
	No sewage	Households with pit latrines or without other on-plot disposal options
Access to knowledge	Low attendance	Households with at least one member aged 7–17 not attending school
	Low achievements	Households with at least one member aged 7–17 attending school regularly, but behind by, at least, 2 years

Source: Translated by the author from Méndez and Trejos (2000).

Finally, Step A3 involves selecting the sources of data. The sources of data employed for the Liberian study were (i) the UBN database of Liberia (provided by the National Statistical Institute of Costa Rica, INEC), which was developed using, as a basis, the methodology developed by Méndez and Trejos (2000), which uses the National Population Census 2000; and (ii) two maps of Liberia: one is a GIS-based map from INEC; and one is the 2002 aero-photograph (provided by the National programme for Airborne and Remote Sensing Research, PRIAS).[10] All data was organised by drawing on census tracts.[11]

4.2. Phase B: identification and target of deprived urban areas

This sub-section describes the four steps required for identifying and target deprived urban areas, including Step B1, where available data is collected to calculate and map those urban indicators under study using the UBN method; Step B2, where urban areas with high degrees of poverty are measured and mapped, using the TP (see Section 3.2, for details on methods used for steps B1 and B2); Step B3, where territorial units with high

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[9]The three dimensions of poverty are named as used by INEC, based on Méndez and Trejos (2000).

[10]The 2002 aerial photography in Liberia was acquired from PRIAS.

[11]INEC (2004, p. 6) defines census tract as a delimited territorial unit inside a district, grouping a number of households, which can be fully registered and visited by each census interviewer.

degrees of inequality are measured and mapped, using the index of dissimilarity (D) (see Section 3.4); and Step B4, where both maps are overlapped. Fig. 3 illustrates the process.
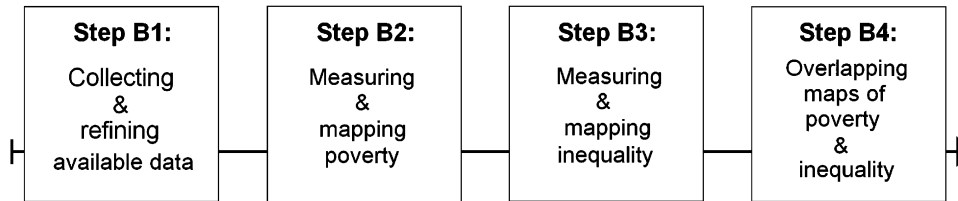

Step B1:	Step B2:	Step B3:	Step B4:
Collecting & refining available data	Measuring & mapping poverty	Measuring & mapping inequality	Overlapping maps of poverty & inequality

Fig. 3. illustrates the steps of Phase B required to identify and target deprived urban areas. *Source*: Author.

Step B1 consists in collecting and refining the evidence required for the assessment. The TSTP relies on statistical data as source of evidence. In the study on Liberia, INEC provided the UBN database of the city, from which data was refined at territorial unit level.

Step B2 involves measuring and mapping the territorial distribution of poverty. The empirical study used the UBN database to calculate the number of households in every territorial unit. This included information on whether or not deficiencies existed in respect of each one of the selected basic needs (housing, hygiene and knowledge). These results were mapped in what is referred to as the three dimensions of poverty in the city of Liberia (see Map 1).
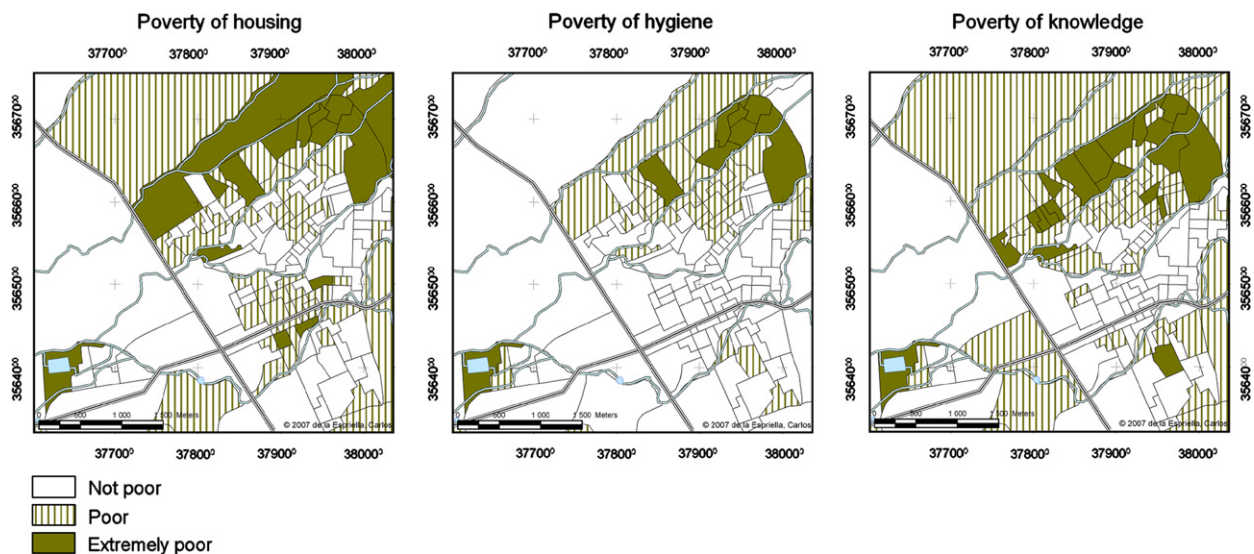
Map 1. Illustrates the territorial distribution of three dimensions of poverty of the city of Liberia. *Source*: Author, based on INEC (2001).

Thereafter, the TP was calculated by combining the three dimensions of poverty in order to obtain an overall measure of the level of poverty in the city (see Map 2). The analysis of Step B2 shows that territorial units with predominantly poor households are situated to the north and south of the city centre, while those with extremely poor households are concentrated in the north-east and south-west corners of the city. In particular, 11% and 35% of all territorial units of the city were found to be extremely poor or poor, respectively, and when combined, they are host to 43% of the total number of households in Liberia.

Step B3 is the measurement and mapping of the territorial distribution of inequality. This step is required when a significant proportion of the territory of the city under examination is classified as poor, because the final objective of Phase B is to identify deprived urban areas with limited territorial extensions, in order to propose specific territorially-based actions that can be implemented to reduce inequality, and therefore integrate those areas with the rest of the city. The analysis of inequality in Liberia confirms a north–south
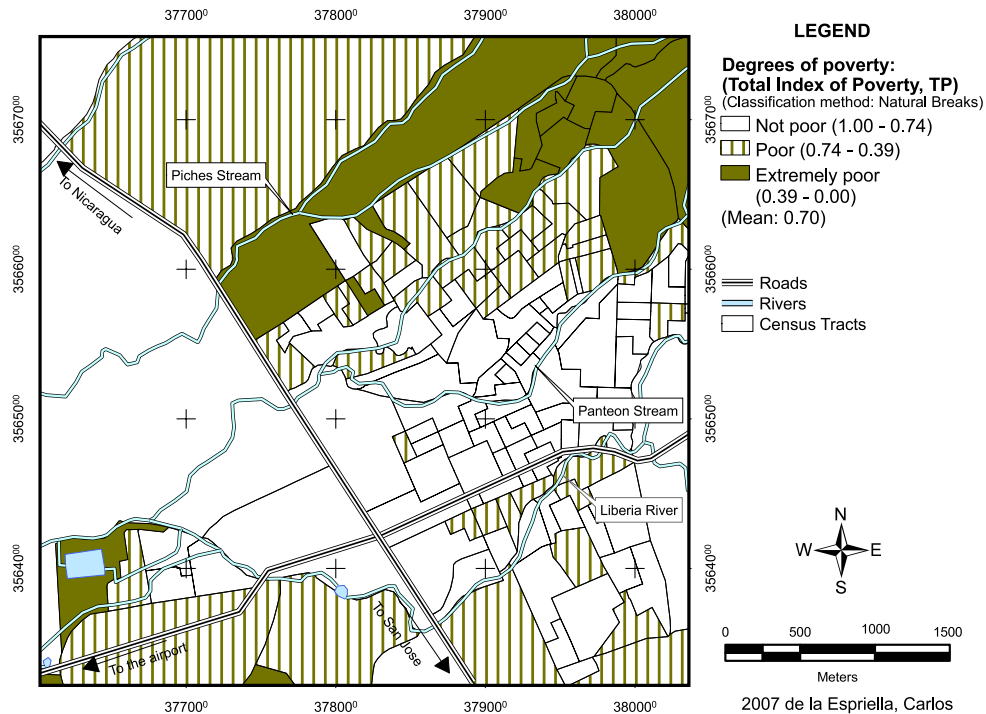
Map 2. Illustrates the territorial distribution of total poverty (TP) in the city of Liberia. *Source*: Author, based on INEC (2001).

polarisation of the city, with a high concentration of rich households in the southern territorial units, and a high concentration of poor households in the northern areas of the city. It also shows four territorial units with a high degree of inequality (see Map 3).
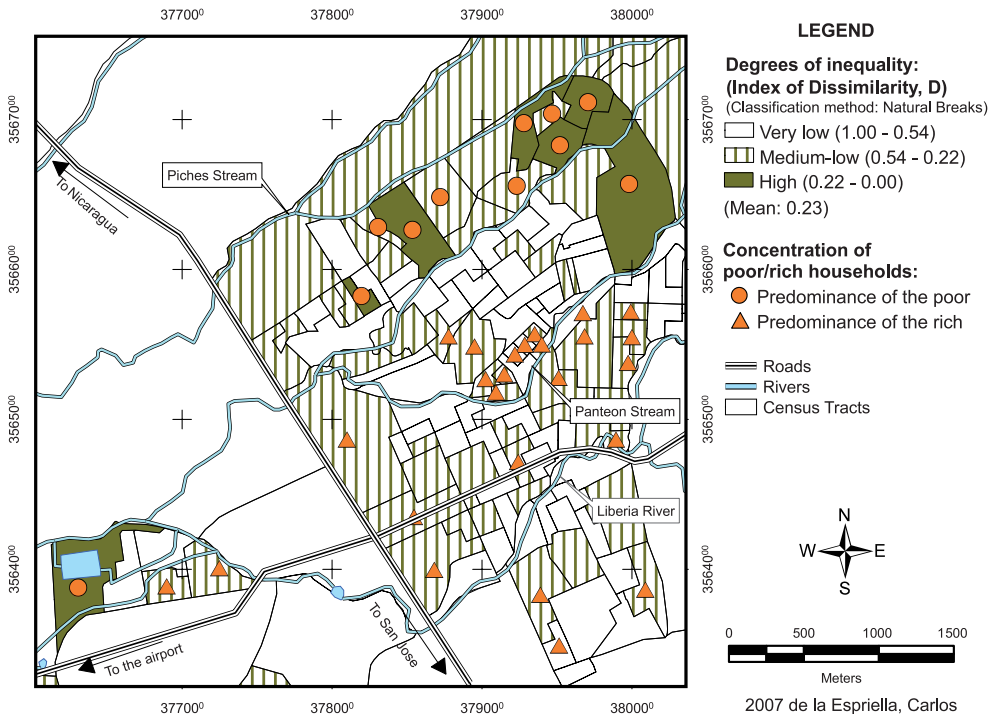
Map 3. Illustrates the territorial distribution of inequality in the city of Liberia. *Source*: Author, based on INEC (2001).

Step B4 involves overlapping the maps of poverty and inequality, in order to identify specific deprived urban areas with limited territorial extensions. For example, Map 4 shows the result for Liberia, where the
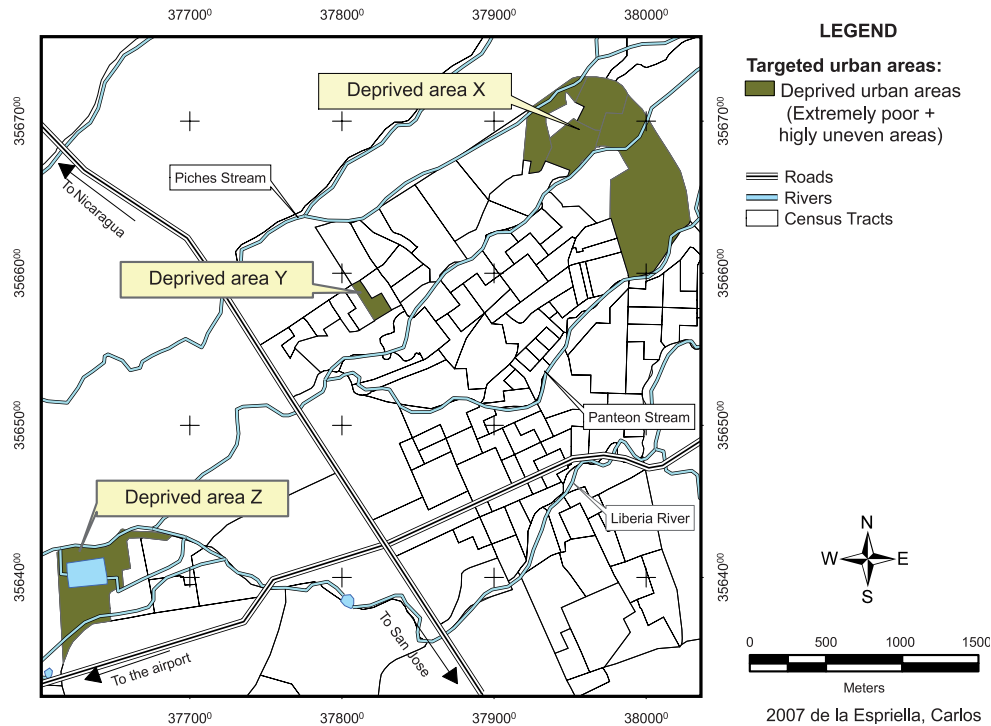
Map 4. Illustrates three deprived urban areas in the city of Liberia. *Source*: Author, based on the analysis of Maps 2 and 3.

dark shaded areas illustrate the extremely poor and highly 'uneven' territorial units of the city. The following three target deprived urban areas were identified in Liberia based on the evidence analyzed: one in the north-east (X), one in the north (Y) and one in the south-west (Z) of the city.

4.3. Phase C: prioritisation of specific territorially-based actions

This last sub-section describes the four steps required to assign priorities to a short list of specific territorially-based actions, including: Step C1, where priority urban areas are identified; Step C2, where the more acute indicators of poverty in each target deprived urban area are defined; Step C3, where a list of required territorially-based actions is defined; and Step C4, where priority actions required to integrate the already defined priority urban areas are defined. Fig. 4 illustrates this process.
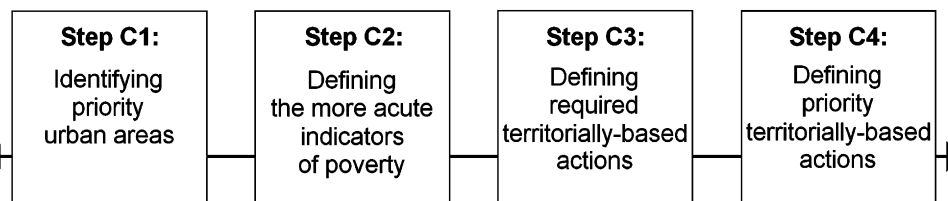

Fig. 4. Illustrates the steps of Phase C required to define priority specific territorially-based actions. *Source*: Author.

Step C1 involves the identification of those urban areas, where territorially-based actions to reduce inequality and poverty should be a priority. The prioritisation of urban areas is based on the potential impact that territorially-based actions might have in the already targeted deprived urban areas, in terms of benefiting

the greatest number of households there. The concentration index (C) was selected because it shows the proportion of poor households in every territorial unit of the city (see Section 3.4). Priority urban areas can be defined by comparing C with the targeted deprived urban areas. In other words, the larger the number of poor households/km^2 benefiting from an action in a deprived urban area, the higher its impact and the sooner it should be implemented. Map 5 shows the results of this step for Liberia. It was drawn by superimposing the
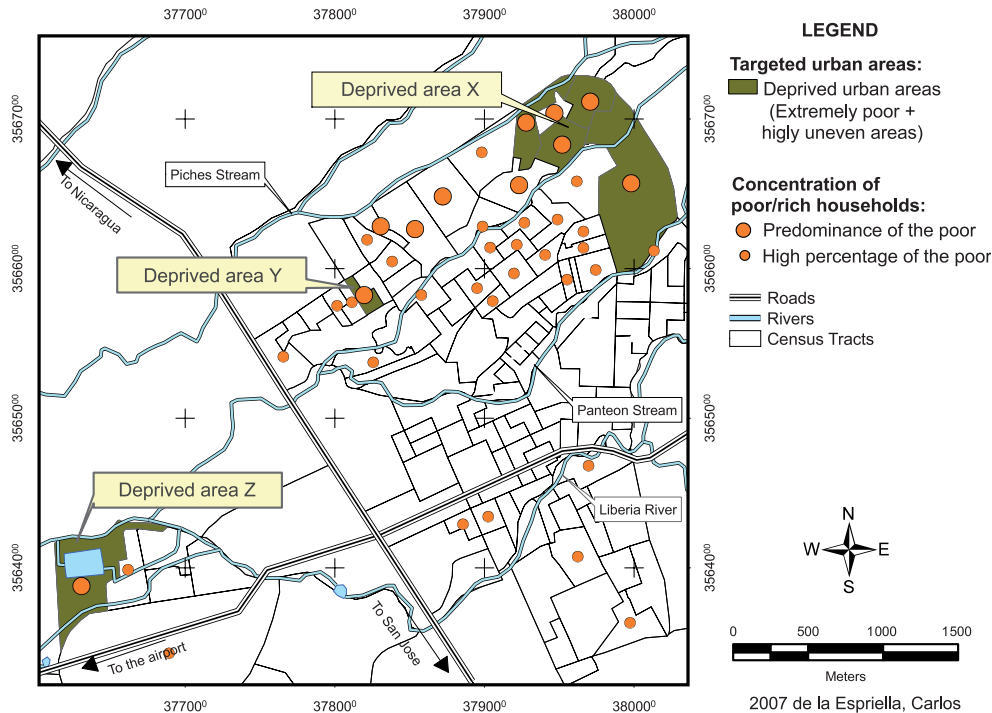

Map 5. Illustrates the territorial correlation between three deprived urban areas and the concentration of poor households in the city of Liberia. Source: Author, based on Map 4.

representation of C on Map 4. It shows that the deprived urban area Y has a high concentration of poor households. Y is also the smallest of the three targeted deprived urban areas, which means that small interventions here—in terms of territorial coverage—should benefit a large number of households. For these reasons Y was suggested as the priority urban area.

Step C2 involves defining which indicator(s) of poverty is (are) the more acute in each target deprived urban area. This step requires looking back to the selected indicators of poverty; overlapping the map of the deprived urban areas with those of each indicator; and selecting those indicators which are critical for every targeted deprived urban area. Map 6 shows the result of this step for the study of Liberia. As a result, it was found that housing, hygiene and knowledge are critical in deprived urban areas X and Z, and housing and knowledge are critical in area Y.

Step C3 defines a list of territorially-based actions required to reduce inequalities and therefore, to integrate (de-segregate) those target deprived urban areas. This is achieved initially, by referring back to those variables, which have compounded the given indicators of poverty, and secondly, by listing possible territorially-based actions to improve the situation of the variables of the already defined deprived urban areas. For example, some possible territorially-based actions to raise housing standards of those households living in Y are to improve household lighting and housing materials, or to promote house extensions.

Step C4 involves defining priorities from amongst the possible actions previously listed. This is achieved by ranking the list of possible territorially-based actions according to the previous prioritisation list for deprived urban areas, and by referring back to the objectives of the study, which might serve to indicate the criteria used for prioritisation. For example, in the Liberian study, the principal criterion was to give priority to those
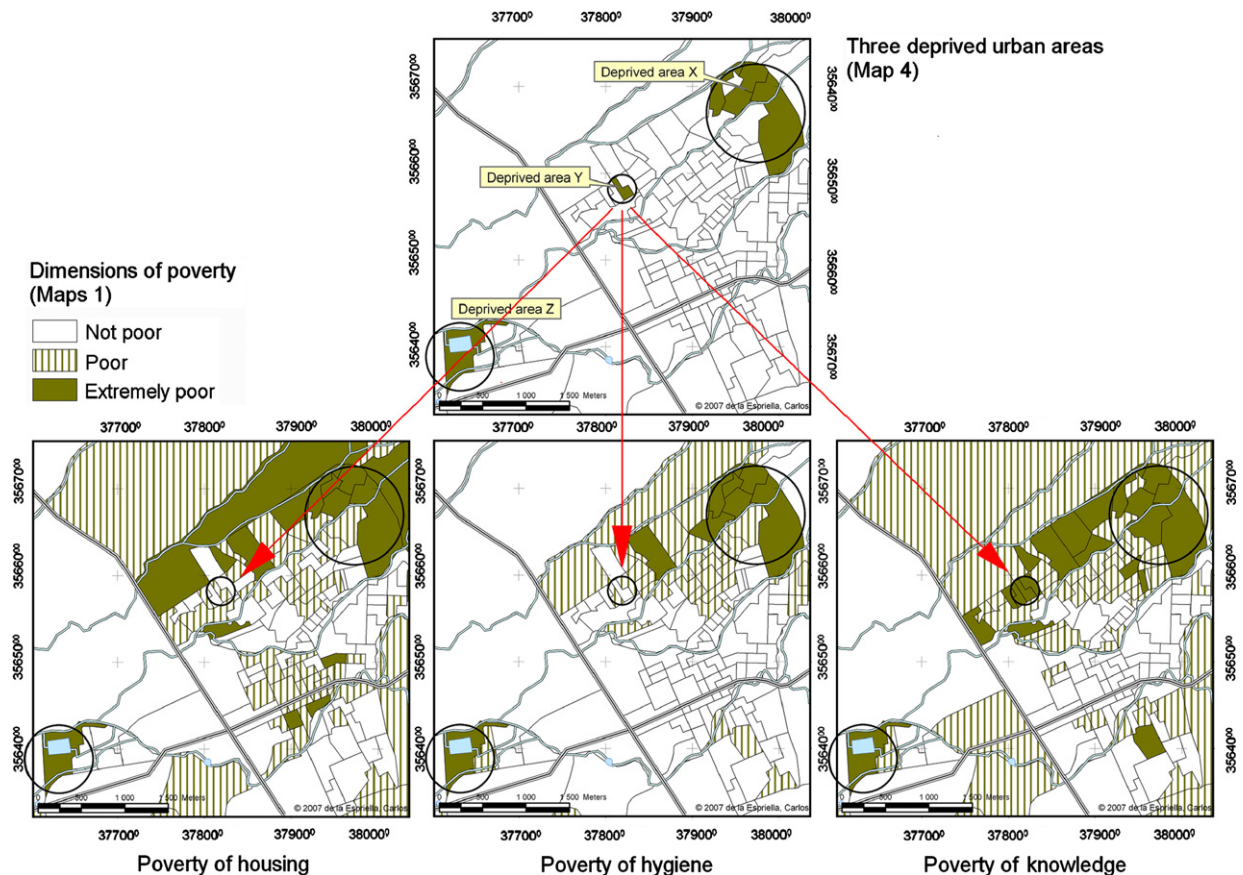
Map 6. Allows the comparison of deprived urban areas and the territorial distribution of three dimensions of poverty in the city of Liberia. For example, it can be noticed that households living in the 'deprived area Y' do not report having significant problems related to the dimension of poverty of hygiene. *Source*: Author, based on Maps 1 and 4.

actions that should have accompanied the implementation of social housing projects. Consequently, it was suggested to give priority to those territorially-based actions in Y before those in X or Z. In particular, the improving in household lighting should be the priority territorially-based actions in Y, since it might contribute to both improving local housing conditions and raising school achievement and attendance. Building pedestrian paths to schools, housing extensions and material improvements should follow.

Lastly, a short list of priority actions—emerging from the analysis of concrete evidence—should be discussed and decided upon with the participation of all TSTP users. Thereafter, this prioritised list of actions should be presented to local authorities and public decision makers who should assess it in relation to the availability of resources, policies and local politics, in order to decide which action to include in any proposed action plan.

5. Conclusions

This final section of the paper pulls together some conclusions regarding some of the conceptual and applied issues raised in the paper, the limitations of the TSTP, and the future actions required to render the programme operational.

5.1. Conceptual issues raised in the paper

The paper centres on the need for a better understanding of the hows and whys of the existence of territorial aspects of inequality and poverty. This is required by urban planners in order that they can implement poverty

reduction policies more effectively, and can also deliberate on which territorial aspects need to be managed and which need to be left alone to support the modification and shaping of our cities in a positive way. The following additional issues were raised in the paper:

- The need to combat poverty not only with measures that will foster economic growth, but also with actions, which will serve to decrease inequality.
- The need to understand poverty as a multidimensional phenomenon, in order to create diverse opportunities and channels to facilitate future growth.
- The need to use evidence, drawn from statistical data, when proposing, implementing and monitoring territorially-based actions.

5.2. Applied issues raised in the paper

This paper has presented the proposed tool—the TSTP—as a step forward in the process of understanding the territorial representations of inequality and poverty at both area- and city-based levels, using evidence drawn from statistical data, as a tool to assess the effects on inequality and poverty reduction that proposed territorially-based actions might have, as a tool that assists its user in the implementation of social policies in the search for equality, and as a tool to guide urban planners, almost on a day-by-day basis, in their development decisions.

The paper has also inscribed the TSTP in the modern context of urban planning. It has grounded the development of the TSTP in concepts and methods related to the study of poverty, inequality and data management, based on the current debate on poverty reduction in Latin America. Ultimately, it has described and illustrated, step by step, the three phases that the user of the TSTP would follow when applying it. The following issues were also raised:

- The need to overcome some of the limitations faced by urban planners working in medium-sized cities of rapidly urbanising countries, where economies are under development and decentralization processes are emerging.
- The need to grasp and compare the effects of different territorially-based actions on the reduction of inequality and poverty, using evidence drawn from statistical data.

5.3. Limitations of the TSTP

Probably the main current limitation of the TSTP is that it depends on available, reliable and timely statistical data that corresponds to equally available and reliable cartography. Other limitations are:

- The need to have access to comparable historical data in order that longitudinal studies can be carried out.
- The need to test out the TSTP in different contexts and in the presence of different social policies that focus on the reduction of poverty.
- The need to test the performance of the tool in a 'real environment', although it has been tested hypothetically based on empirical information.
- The need to fully develop the appropriate instrument for the implementation of the TSTP.

5.4. Future actions

The TSTP introduced here is part of a wider doctoral research endeavour, which will include the following future actions:

- To develop an understanding of the context for pro-poor urban spatial planning in respect to the acknowledged relationship between poverty, URS and those 'actors' involved in the process and development of urban spatial planning.
- To verify the relevance, suitability and feasibility of combating poverty via the reduction of URS and inequality, in respect of which three workshops have recently taken place with the participation of Costa

Rican decision makers from various levels of policy making and development (local, regional and national decision makers, civil society organisations, researchers and practitioners).

● To achieve the full development of the TSTP application.

As a final remark, the author believes it should be stated that efforts should persist in respect of developing statistical-based tools that contribute to the greater transparency and accountability of local public decision-making processes. Special attention should be given to promoting the development of new planning tools, which would enable local urban planners to propose pro-poor, priority territorially-based actions, and limit political, market and informal pressures. In other words, the challenge of establishing a new type of planning tool is to uphold healthy market dynamics and yet pursue the implementation of effective redistribution mechanisms and the effective targeting of public spending in order to achieve more egalitarian societies, reduce poverty and foster positive development.

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