



# **Territories and urbanisation in South Africa Atlas and geo-historical information system (DYSTURB)**

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# Territories and urbanisation in South Africa

Atlas and geo-historical information system (DYSTURB)

Notice



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Céline Vacchiani-Marcuzzo

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# Territories and urbanisation in South Africa

**Atlas and geo-historical information system  
(Dysturb)**

Notice

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Cover photo

*Concrete dolos wavebreaker painted with the colours of the South African flag,  
at the entrance of Port Elizabeth deep water harbour COEGA.*

## **Introduction**

# **A georeferenced database covering one century of demographic and administrative follow-up of all South-African localities and territories**

South Africa, the first economic power in the African continent, has a population of nearly 50 million inhabitants, of whom more than 60% were urban in 2008. The country has a long-standing network of metropolises (cities), towns and localities (*places*). These have developed and become hierarchised in the course of a history where population settlement and its distribution have been markedly influenced by colonisation, segregation, industrialisation and globalisation.

An outstanding set of statistics on population distribution, dating from the start of the 20<sup>th</sup> century is available for South Africa. This data was however compiled and presented in a succession of post-colonial contexts each very specific in nature: first the Union of the British ex-colonies and the Boer Republics, still very colonial in style, then the apartheid regime, and finally post-apartheid South Africa. These successive periods led to creations and redefinitions of social categories and spatial frameworks: segregationist “engineering” in the territorial, social and political fields, to which statistical data and its processing were subordinated until the end of the apartheid system; territorial reforms aiming to abolish segregationist legal regimes and to reinstate the country and its cities within the globalisation process.

Thus collating and inter-relating data from census information since 1911 makes it possible to retrace the history of one century of settlement distribution, urbanisation and territorial engineering in South Africa. The Dysturb database available on the CD-Rom and with the set of maps and

commentaries derived from this data are the result of this geographical-historical enterprise.<sup>1</sup> The database collates, harmonises, geo-references and inter-relates in time firstly all the political and administrative maps for districts, *urban agglomerations* and *places*, and secondly the population figures for all these South African entities, both urban and rural, since 1911. In addition, it determines the boundaries and the makeup of the urban entities for each census on a functional basis, moving beyond the administrative divisions and official definitions.

The demographic and administrative datasets according to the entity considered can thus be processed in the long term, and re-aggregated in constant, present or past functional and administrative spatial frameworks.<sup>2</sup> Thus it is the whole spatial and territorial archaeology of South Africa that this tool makes it possible to apprehend in the full diversity of its different modes. The commented geo-historical database Dysturb is compatible with the geographical information systems (GIS) proposed by *Statistics South Africa* (<http://www.statssa.gov.za/>) for the last two censuses (which afford access to all census data according to localities sub-

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1 With the scientific collaboration of Ryad Ismail (University of KwaZulu-Natal) and François Moriconi-Ebrard (CNRS-UMR SEDET) for the initial development of the base.

2 The database is allied to different productions that constitute references in the field of spatio-temporal databases enabling places and territories to be followed over a series of censuses:

- the “Egipe” database developed by CEDEJ (H. Bayoumi, E. Denis and F. Moriconi-Ebrard) for one century of censuses in Egypt (1882-1996) available on CD-Rom ([http://www.cedej.org.eg/rubrique.php3?id\\_rubrique=61](http://www.cedej.org.eg/rubrique.php3?id_rubrique=61));
- the Great Britain Historical Geographical Information System (GBHGIS) developed by the University of Portsmouth (<http://www.port.ac.uk/research/gbhgis/>) which, like Dysturb, makes it possible to collate and inter-relate administrative maps and successive censuses according to locality and district;
- the China Historical GIS on the Harvard University website, faculty of Arts and sciences: (<http://www.fas.harvard.edu/~chgis/>). This is an even wider project, since it goes down to finer scales and integrates spatial, environmental, and socio-economic data in addition to the census data;
- “L’Europe des populations” comprising 130 000 spatial units (*communes* or equivalent) for Europe overall: Moriconi-Ebrard F., Hubert J.-P., Strauch G.-A., Cohen R., 2007, *Europe des Populations Version 2*, cédérom Arctique, Tours, 2007, (new edition revised and augmented) ([www.arctique.com](http://www.arctique.com));
- the Africapolis database “Formes et dynamiques de l’urbanisation en Afrique de l’Ouest, 1950-2020 : approche géo-statistique” developed in 2008 for AFD by SEDET headed by Eric Denis and François Moriconi-Ebrard;
- the NHGIS (National Historical Geographic Information System), set up by the University of Minnesota: this is a project to make available all census data for the American population from 1790 to 2000 within spatial frameworks ranging from the finest (*census tract* if available, if not counties) to the states, and also offering all related cartographic material. This data has been available in various formats since March 2007, after 5 years’ work (<http://www.nhgis.org/>).

divided into *enumeration areas*); it is also compatible with the municipal *GIS SA Explorer* (developed by the *South African Municipal Demarcation Board*: [www.saexplorer.org.za](http://www.saexplorer.org.za)) which enables access to socio-economic data for the new municipalities.

## ■ The challenge of shifting categories

Throughout the past century, to the classic changes in borders and nomenclature were added changes in category and distinctions in terms of status that were applied to entities of one and the same nature. Paradoxically, the distinctions among individuals on the basis of race and origin, forming the basis of the racist political order until the end of apartheid, generate only minor difficulties in statistical follow-up. Indeed, these distinctions, already present in the colonial era, were maintained, refined and made more rigid in the apartheid period. Thus for the censuses, they were implemented in fairly stable manner, although there were some changes in denomination. An under-estimation of the black population should however be noted at the time of the 'grand apartheid' policy, culminating with the census of 1985, which is not retained in this database for reasons of data reliability.

The spatial frameworks within which the censuses were compiled are far less stable. Enumerations were conducted within heterogeneous frames with major changes not only in the delimitation and the number of entities up to 1970, but also in their nature and status. Three distinct periods need to be distinguished to apprehend the main changes: the period during which the apartheid system was established at the end of the 1940s and the start of the 1950s, the 'grand apartheid' period (from the start of the 1970s), and the end of apartheid (in the mid 1990s). Apartheid, and in particular the *Group Areas Act*<sup>3</sup>, does indeed appear as being fundamental in the systematisation of urban segregation and the differentiation of quarters and localities on a racial basis. On a different

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<sup>3</sup> The *Group Areas Act* (1950) obliged the local authorities to allocate separate quarters to the different racial groups, banning any mixed quarters.

## The blacks, the whites and the others the categorisation of individuals under apartheid

The main racial categories used in the censuses were:

- the “Bantus,” also referred to as “Blacks” or “Natives,” referring to the original African population, and more specifically those considered as being of Bantu origin, that is to say the sedentary black populations that the European colonisers encountered as they penetrated the interior beyond the sparsely populated arid territories in the hinterland of Cape Town;
- the “Whites,” or “Europeans,” referring to populations derived from colonial settlement from Europe, with their two main groups, the Afrikaners, of Dutch origin, and the British. These two groups arose from separate phases of colonisation, and distinct modes of integration into the South African space. Thus at the end of the colonial period, for the Afrikaners, also known as Boers, it was mainly the rural interior that was occupied, with an autonomous organisation cut off from its European base, while the British implantation was more urban, in the provinces open to the outside world, and in particular towards the British colonial Empire.

There were also two categories to refer to “Non-Whites” or “Non-Europeans,” and these were formalised in the apartheid period. They were less stable, and have sometimes been confused:

- the “Asians” or “Indians,” referring to South Africans of Indian origin whose ancestors had often arrived as indentured workers or by free passage, in particular at the end of the 19<sup>th</sup> and the start of the 20<sup>th</sup> centuries;
- the “Coloureds” or “Others” who formed a heterogeneous group including persons of mixed blood, and those who did not fit into the above categories.

This classification, derived from the British colonial period and already present in the 1911 census, played an important part in the construction of identity. While condemning the system that designed it, researchers still use it widely, and contemporary censuses enable the follow-up of these categories, even if responses on ethnic origin are today non-compulsory. Certain other terms require definition: Indians, Africans and half-casts were collectively referred to as “Non-European” –which was a rather derogatory term used in the apartheid period– while they might have referred to themselves as “Blacks.”

*(from Myriam Houssay-Holzchuch, note in GIRAUT F. et al., 2005).*

scale, the ‘grand apartheid’ system created what were termed *homelands* alongside the four historical colonial provinces, with their own districts formed on an ethnic basis. It is also the period during which the urban localities taken into account for the census enumerations were particularly numerous, in particular with the appearance of the *townships* that were distinct from white areas. Finally, since the end of apartheid, a complete reorganisation of the spatial reference frames and of statistical compilation methods has occurred. Provinces (since 1994), districts and basic municipalities (since 2000) form exhaustive territorial grids that systematically associate spaces corresponding to the former *homelands* and non-“municipalised” spaces with the spaces corresponding to the former provinces and municipalities. In addition, these entities include the whole population, irrespective of any distinction between urban and rural. Concerning urbanisation and the task of tracing its history, South Africa is a rather unique challenge. This arises in part from the practice, subsequently becoming an inherited feature, of physically separating quarters by means of buffer zones that introduce morphological discontinuities within urban areas; it also arises from the practice of “*displaced*” (re-settled) urbanisation beyond the boundaries of the former bantustans, which raises the issue of the nature of isolated but dependent *urban agglomerations*, and of where they belong.

## ■ **Dysturb: The three scientific objectives**

By way of its design, Dysturb mainly serves three scientific objectives and domains:

### Historical demography and contemporary spatial frameworks placed in perspective

The database enables novel processing of demographic and administrative data according to locality over a period of one century. The data can be aggregated into stable spatial frameworks, both functional and administrative, past and present. This enables research or demographic history, and makes it possible to put data in perspective in the long term and on different scales, ranging from the local scale of village and quar-

ter to the national scale, via the intermediate scales of district, municipality, province and former bantustan. Work on historical demography<sup>4</sup> appears fundamental in the context of the recent reorganisation against a backdrop of colonialism, urbanisation, migratory flows and forced removals, and the ensuing freedom of movement.

### An observatory for spatial and territorial archaeology

It is known that systematising census operations, with the social and spatial classifications upon which this is based, underpins national control strategies in settlement colonies, and this has been studied in particular for the United States (HANNAH, 2000). More generally speaking, political geography has explored and used the work by Michel Foucault on “*gouvernementalité*” and related technologies (2004 a and b) to study the implementation of “geo-powers”<sup>5</sup> (TOAL, 1996; ROSE-REDWOOD, 2006). In the case of South Africa, this process has been characterised by breaks and marked changes in the spatial categories used, which reflect the successive political systems and governing technologies.

The database enumerates the succession of divisions, denominations and statuses of *places* and areas on all scales. These are given for the post-colonial period, for the apartheid period, for the ‘grand apartheid’ period, and the post-apartheid period, each of these periods seeing intense, extremely characteristic territorial engineering activities aiming to manage and use the various spaces for different purposes, colonisation, segregation or reunification. Dysturb enables study of this succession of practices in the division and allocation of spaces, with respect to their general principles and their various modes of implementation according to scale, environment, heritage and opportunity. Beyond the fairly well-known general trends, it is possible to trace the diversity of the different modes of application. Any exceptions identified can take on meaning by

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<sup>4</sup> See A.J. Christopher (1976, 1994, 2001) for his pioneering work on the scale of the national territory and the main cities.

<sup>5</sup> G.Toal (1996) defines “geo-power” as “the functioning of geographical knowledge not as an innocent body of knowledge and learning but as an ensemble of technologies of power concerned with governmental production and management of territorial space.”

way of comparisons with other situations. Finally, it is also possible to cast light on the issues of the status of localities or quarters, and their names, i.e. the toponymy, which is an ongoing concern in South Africa today, by tracing creations and changes of *place* names in the censuses collated in this database, whether from a monographic viewpoint or with respect to trends.

### Study of urban dynamics in the long term

The database provides a long-term follow-up of the urban entities, from their establishment and through the advancement of the successive waves of the urban frontier, the growth of the population in the 20<sup>th</sup> century, and the evolution of the urban contours, both morphological and functional, for each census. Thus the database enables all the localities involved to be linked up, and therefore affords the opportunity to work on South African agglomerations independently from the official definitions in force for each period.

The population database for these urban entities does not escape the difficulties generated by the statistical sources in South Africa. But it does enable a refinement of the definition of the South African city, viewed as a geographical entity, since it does not reduce it to a mere legal or administrative definition.

## Part I

# Composition and structure of the Dysturb GIS database

### ■ Origin of the data

#### South African censuses

The official general censuses of the South African population were performed by successive official bodies (predecessors of the present-day *Statistics South Africa*) for the years 1904 (districts and provinces, no data for localities), 1911, 1921, 1936, 1951, 1960, 1970, 1980, 1985, 1991, 1996 and



2001. Three censuses were removed from the geo-referenced database for reasons of data reliability (1985), incomplete data (1904 and 1985), and difficulties in tracing localities longitudinally (1996). Thus 9 censuses, with inter-census gaps of around ten years, made up the basis of the geo-referenced base with longitudinal follow-up over one century of South African localities (*places*), urban areas (*agglomerations*) and territories.

Where demographic data are available in two modes of enumeration, *de jure* and *de facto*, it is systematically the *de facto* enumeration that is preferred, as being closer to the actual distribution of the population.

### Complementary sources (censuses and reports concerning the *homelands*)

For the year 1991, the data concerning the “independent” *homelands* of Bophuthatswana, Ciskei, Transkei and Venda (TBVC) are derived from official statistical sources in these *homelands*. In addition, several studies (GRAFF, 1986; HRC, 1992; MCCARTHY & BERNSTEIN, 1998; MALAN & HATTINGH, 1976) were used for the former *homelands* and *townships*, in particular for the identification of *urban agglomerations*.

Finally, the reports issued by *Statistics South Africa*, by the *South African Institute of Race Relations* and by the *Urban Foundation* constitute valuable sources on issues of socio-spatial segregation and habitat that conditioned the distribution of the South African population on various scales.

### Administrative and political data (gazettes, toponymic dictionaries)

Regarding administrative and political data (dates and terms of the creation or alteration of *magisterial districts* or local capitals), official government or provincial gazettes listing acts, regulations and proclamations were consulted on the basis of indications in *Juta's Index to the South African government and provincial gazettes*. Concerning the names of localities, the years of their creation and when they obtained local government status (municipality, different local government councils) the main source was Raper (2004).

## ■ **Places: The basic entity in Dysturb**

### Definition of a census locality (*place*) in South Africa in the course of the 20<sup>th</sup> century

The localities or *places* retained in the censuses underwent considerable changes, in number, name and status. The Dysturb database enables follow-up of localities by systematically establishing correspondences despite changes in name or status.

It should first of all be noted that until 1991 the localities used in the censuses correspond to the official definition of the urban object. That is to say that the official list of localities was drawn up in accordance with the status of these localities, which was itself linked to the origin of the locality and its racial composition, more than to its dimensions. The existence of a local government council was the urban definition criterion until 1970.

#### Localities with a local government body

- A Municipalities (including *Boroughs* in Natal and *Town and City Councils* in Transvaal);
- B *Village Management Boards* in the Cape provinces and the Orange Free State; *Village Councils* in Transvaal; *Town Boards* in Natal;
- C *Health Committees* in Natal and Transvaal; *Local Boards* in Cape Town;
- D *Local Areas* in Cape Town and Transvaal; *Public Health Areas* in Natal.

The table provided in the CD-Rom annexes entitled “*Administrative status and functions of localities*” gives dates of creation and of allocation of functions up to the year 2000 for all localities that were local government seats and/or possessed local government status, even if only elementary (non-urban).

A certain number of localities disappear as *places* in the course of the period: these are colonial settlement villages or missionary centres which were at first identified as fully-fledged *places*, after which their populations of European origin declined (the case with certain missions), or else they were integrated into neighbouring municipalities or into wider suburbs.

Among the new *places* appearing, before 1970 these were mainly villages or suburbs where the growth of the population of European origin led to their obtaining local government status, and therefore urban status for the censuses. The increase in the number of *urban places* was thus considerable between 1931 and 1951 (rising from 492 to 722, corresponding to an increase of around 50%).

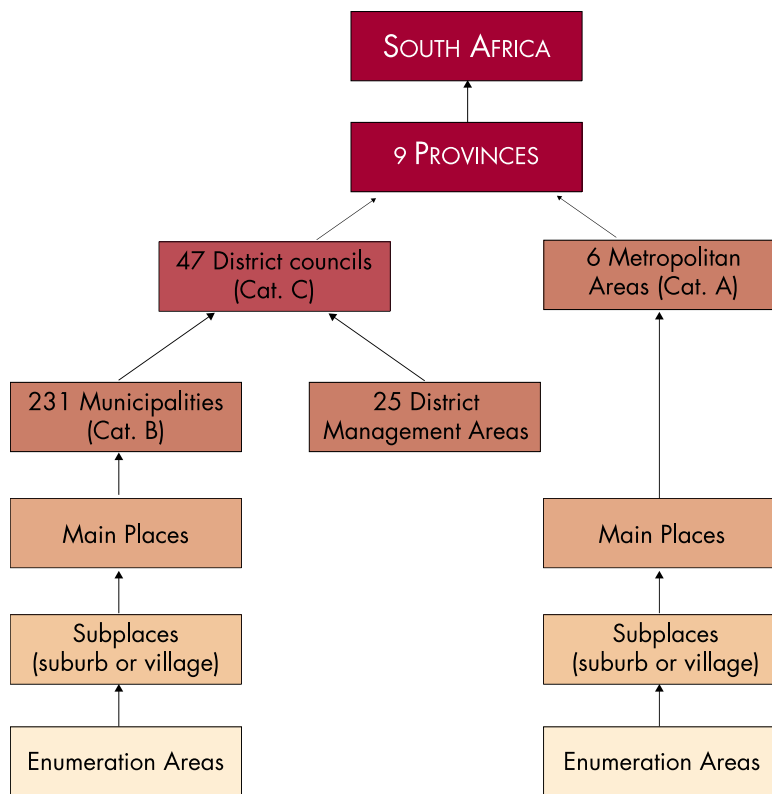
The censuses also make it possible to identify a certain number of localities that have no official status as an *urban place*, but that are included in the Dysturb database. Indeed, the first censuses (1911 and 1921) included lists of *towns*, *villages* and *rural settlements*. In addition, up to 1960, the censuses provide lists of *suburbs* that are not urban localities but a breakdown of the main metropolitan areas. Finally, retrospective tables enable access to data for *places* appearing at a later date. In the Dysturb database localities of this sort (non-official in statistical terms, since only *urban places* are taken into account) are identified as *settlements*. Their populations are also included in the total for rural areas in the district to which they belong, which gathers all the populations outside the *urban places*.

From 1980 the main black, coloured or Indian *townships* not possessing an elected council but recognised as urban localities were also considered as official census localities (*urban places*). This was in no way a concession to democracy on the part of the apartheid regime, but a mere accounting strategy for the black urban areas liable to be involved in forced removals towards “*homelands*” within the ‘grand apartheid’ policy. Thus more than 350 Black *townships* appear as *urban places* in the 1980 census.

In 1991, two so called “independent” *homelands*, Bophuthatswana and Transkei, performed an exhaustive enumeration of *places* in their census, i.e. all the population in each district was allocated to a certain *place*. Thus for these *homelands* there was no longer a non-differentiated “rural” category gathering all the population that was not considered to belong to an *urban place*. This precedes the post-apartheid practices present in the 1996 census where an exhaustive grid of more than 12 000 *places* was used, and the census of 2001 where 2 674 *main places* were determined

and delineated, subdivided into 15 966 *subplaces*. The new administrative organisation is indeed based on seven geographical scales, and the new subdivisions cover the whole of the South African territory.

For the database, the correspondences between *places* of 1991 and before and those of 2001 were first of all systematically sought in the *subplaces*, and then for remaining localities among the *main places*. Of some



- Category A : Metropolitan Area
- Category B : Municipalities (not Metropolitan Areas)
- Category C : District councils

Source: Statistics South Africa, 2001

Figure 1 – Hierarchical organisation of South African territorial subdivision in 2001.

4 000 localities (3 923) enumerated in 1991 or before<sup>6</sup>, around 1 430 are presented in the database but have no correspondence with a *main place* or *subplace* in 2001, and no geo-referencing. For the most part (1 306 out of these 1 430) they are localities noted in Transkei and Bophuthatswana in 1991 alone.

### The issue of name changes

As in any historical database, the follow-up of the basic entities (in this case *places*) and the units to which they are attached (in this case *districts*) comes up against the problem of changes in name. Changes can be linked to transcription, or, on the case of bi- or multilingualism, to the way in which one or other language is given precedence in different periods, or again to dual toponymy. Finally changes in name of a political nature can occur following a change in regime (here the apartheid system), with a desire to erase certain historical references belonging to the abolished regime, or conversely to return to past heritage or commemorate a struggle (GIRAUT *et al.*, 2008).

In the case of South Africa, changes in names are frequent in the period covered by Dysturb. A table given in the CD-Rom annexes lists all these changes in the names of districts and *places*. While it is transcription issues that underpin most of the changes occurring up to 1951, issues relating to the translation of proper names into English or Afrikaans are already found before the start of the apartheid regime. The opposition between the English-speaking and Afrikaner communities can indeed be found in the toponymy. Franschhoek (the French corner, by reference to the Huguenots who left their country after the repeal of the Edict of Nantes) was partially anglicised in the censuses of 1921 and 1936 in the form “French Hoek.” However the apartheid period saw a reinforcement of toponymic bilingualism in favour of Afrikaans. From the 1951 census to that of 1991, numerous *places* (including those in Natal) and *magisterial districts* carried two names via an almost systematic translation of *Bay* (*baii*

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<sup>6</sup> Some had a short-lived existence in the censuses, appearing in one or two census and then disappearing before the 1991 census.

in Afrikaans), of *North, South, East and West*, (*Noord, Suid, Oos, Wes*), of *Road (Weg)* and sometimes *River (Rivier)* or *Town (Stad)*. Mining quarters also took on dual denominations (*Mine Compound* and *Myn Kampong*). Prince Albert is translated as Prins Albert to obtain a dual appellation, while Franschoek took over as the sole name.

Toponymy of Bantu origin with the establishment of apartheid and in particular of the ‘grand apartheid’ policies, underwent a subtle interaction between the established powers and their objectives on the one hand, and subversion by way of local usage on the other. The urban apartheid regime inherited a relatively composite toponymy for the African quarters (created during the colonial and then the Union periods under the denomination of *location*). *Locations* in some cases had no official name, or else were given names of European origin (Alexandra, Lamontville) or African origin (Langa, KwaMashu).<sup>7</sup> Thereafter, the apartheid regime allocated “neutral” *place*-names (or non-*place*-names, *a minima*) to the *townships* that it formed under the *Group Areas Act* of 1950.<sup>8</sup> The official *place*-names as they appear in population censuses from 1980, with the creation of new census localities of the *township* type, were often (183 new *place*-names in 1980) made up of the name of the town followed by the bilingual (Afrikaans-English) acronym SD (Swart Dorpsegebied)/BT (Black Township). In the 1985 census, with the systematic instatement of the ‘grand apartheid’ policies, the *townships* recognised in the census were systematically given African names: allonyms or non-official names in most cases. 122 changes occurred in the 1985 census, and 23 in the 1991 census. It can also be noted that there was some hesitation in this process, since over less than 10 years in the Orange Free State certain *townships* were given two successive African names (for instance Ventersburg SD/BT becomes Tswelagpele and then Mnamhabane).

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<sup>7</sup> KwaMashu is in fact the Zulu form of a reference to a notable in Natal colony, Marshall, so that this place name means Marshall's place.

<sup>8</sup> The well-known acronym SOWETO standing for South West *Townships* (which was a complex of *townships* to the south-west of Johannesburg) illustrates this functionalistic English toponymy. One of the few African names is that of Gugulethu in Cape Town, meaning “our pride” –which was doubtless more the pride of the planners than that of the inhabitants.

## ■ Using the Dysturb data

### The database for *places* and territories

The Dysturb database is designed to enable crosswise and longitudinal study of South African localities (*places*), urban areas (*agglomerations*) and territories and their populations (figures 1 and 2).

#### *Cross-sectional study*

The database enables study of the situation and the population of *places* and *magisterial districts* (the two statistical units that are observable for the whole period 1911 to 2001<sup>9</sup>, at a precise census date. The yearly files concern a single year and are made up of several spreadsheets: one for each type of statistical unit, and one giving meta-data (PL + year, MD + year, meta-data). In the “MD” (*Magisterial District*) sheets, each district is allocated an identification code for each year. This identification is made up of the letters MD, the reference date, and a (non-significant) ordinal number; for example, MD91\_128 stands for the MD of Inanda in 1991. This is followed by the name of the *magisterial district* in the spelling at the reference date, and a set of data concerning the composition of the population (detailed according to category). Likewise, in the “PL” (*place*) sheets, each *place* has a single identifier for each year. This is made up of the code for the MD to which the *place* belongs followed by the letters PL and an ordinal number; for instance, MD91\_128\_PL\_1090 for the *place* Radcliffe in the *magisterial district* of Inanda. The name of the *place* is then given in its spelling at the reference date, and a series of data on the composition of its population. This coding system avoids any confusion between years, between types of statistical unit, and between statistical units of a given type. Any unit can at all times be situated in its temporal and geographical context.

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<sup>9</sup> The base statistical units are *places* and *magisterial districts*. However, in 2001 *places* may correspond to *subplaces*, or *main places* made up of *subplaces*. *Main places* and *subplaces* are distinguished by way of their numerical codes: 5 figures for *main places*, 8 for *subplaces*. In addition, the *places* do not strictly correspond to the *magisterial districts*, but form the new municipalities. We have however allocated the *magisterial district* code to them, since it covers them most efficiently. We have also indicated the municipality code, and have shown the new subdivisions in force since 2000.

### Longitudinal study

The other aspect of the database is its design enabling study over time. One of the main aims was to enable follow-up of the evolution of South African territories and localities. Correspondence for the statistical units over time has been provided for, so that the database can be used for this purpose. Each *place* and each *magisterial district* have been allocated a single code over time at all dates so as to facilitate follow-up. The “dictionary” file makes it possible to know the different codes that a *place* or a *magisterial district* has carried in the course of time. Thus it is possible to start from any given year and find the locality in any other year if it is recorded in a census.

### The “Urban Agglomeration” database

The database concerning towns and cities established by Céline Vacchiani-Marcuzzo (CVM database) is based on a morpho-functional definition of the *urban agglomeration* (association of the white town/city and the non-white *townships* of the apartheid period, inclusion of commuting phenomena).<sup>10</sup> The main source is population censuses, and it covers the long term (1911-2001). Tables (in Excel format) have been constructed so as to enable follow-up and visualisation of urban growth throughout the 20<sup>th</sup> century.

Each *urban agglomeration* is characterised by its total population and its component *places*. In the *agglomerations* file [les agglomerations (composition, population – 1911-2001).xls], the sheet *population agglomeration* comprises the following fields: the *agglomeration* code, a single code through time corresponding to the code for 2001 of the *main place*, total population for each reference year. If the population of a given *urban agglomeration* is to be followed (longitudinal study), it is simply selected on this sheet; and if what is required is an image at a precise date, agglome-

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<sup>10</sup> The word “*agglomeration*” is used here in the sense of the French usage to refer to urban or built-up areas, which may be made up of several entities of different type (central city, suburbs, satellite towns, etc.).



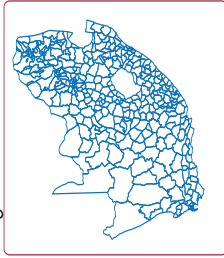
# Territories

**Administrative boundaries and places**  
At each date: one map and one table  
for each administrative level

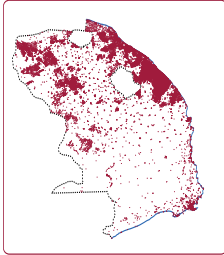
Provinces



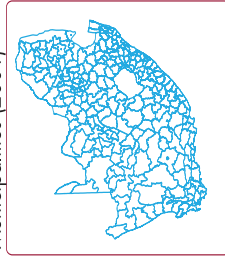
Magisterial districts



Places



Municipalities (2001)



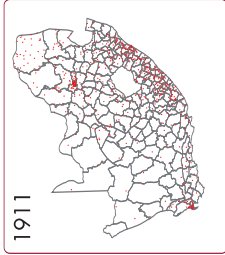
- 1 - A follow-up of administrative boundaries
- 2 - A vision of the hierarchy of territorial boundaries
- 3 - A follow-up of each urban or rural place

Table's content for each level:

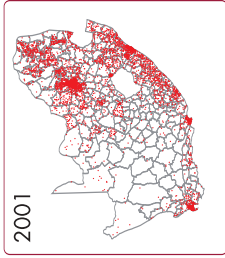
(provinces, magisterial districts, places)

- Code
- Name
- Population
- Legal and administrative status
- Creation date
- Higher administrative level code
- Code previous census
- Changes between two dates (status, name)
- Agglo Code
- Notices

**Evolution of the population distribution**



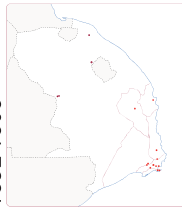
2001



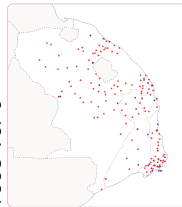
# Urbanisation

Maps of cities by periods where they were founded

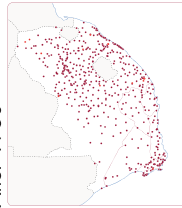
1652-1806



1835-1870



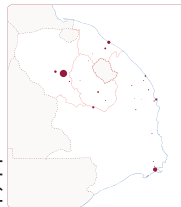
After 1960



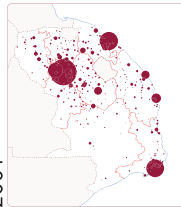
One map and one table  
for creation of cities  
by period

Maps of urbanisation in the 20<sup>th</sup> century

1911



2001



One map and one table of population  
of urban agglomerations

Table's content for each level:

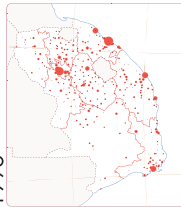
- Agglo Code
- Agglo Name
- Population of agglomeration for each date

Evolution of urban agglomeration components

1911



1996



One map and one table of the evolution  
of urban agglomeration components

Table's content for each level:

- Agglo Code
- Agglo Name
- Component Code
- Component Name
- Administrative Status
- Population Component

Figure 2 – General organisation of the database.

rations with a population at this date are selected. Another file (compo\_agglos1911\_2001.xls) provides the composition in terms of *places* for each *agglomeration* at each date (with the *place* code for 2001).

### The “City Generation” database

This database (figures 1 and 2), (Excel file “generation\_villes.xls”), indicates the period at which *places* appear as *urban agglomerations*. These *urban agglomerations* are characterised by their codes, corresponding to a *place* in 2001 (it has not been possible to allocate a geo-code to some of them), the name of the town/city, and the period of its appearance (date and numerical code) (figure 3).

## ■ Maps

In addition to the province and *homeland* levels, which correspond to the aggregation of districts, two main levels are systematically mapped for each of the census dates, providing a set of cartographic matrices (maplayers): these are the *magisterial districts* (polygons) and *places* (points up to 1991, and polygons in 2001).

### *Magisterial districts*

It should first of all be noted that the *districting* implemented for the purpose of census organisation corresponded to the *magisterial districts* up to 2001, but that the *census districts* actually used in some instances anticipated the official proclamation of *magisterial districts* by a few years. In other words, certain *census districts* used in a given census only became *magisterial districts* in the following census interval and hence after the census. Only the 1970 census distinguished ethnic subdivisions of *magisterial districts* (in particular for Natal) that were later for the most part, but not systematically, officialised as new districts.

Technically, our task was to obtain the largest possible number of available outline maps for the different periods and grids, and then to select the most compatible in terms of projection and quality. Following this, a choice was made in favour of the 2001 and 1996 census outline maps, to which the other outline maps were fitted. For 1991 a digitised out-

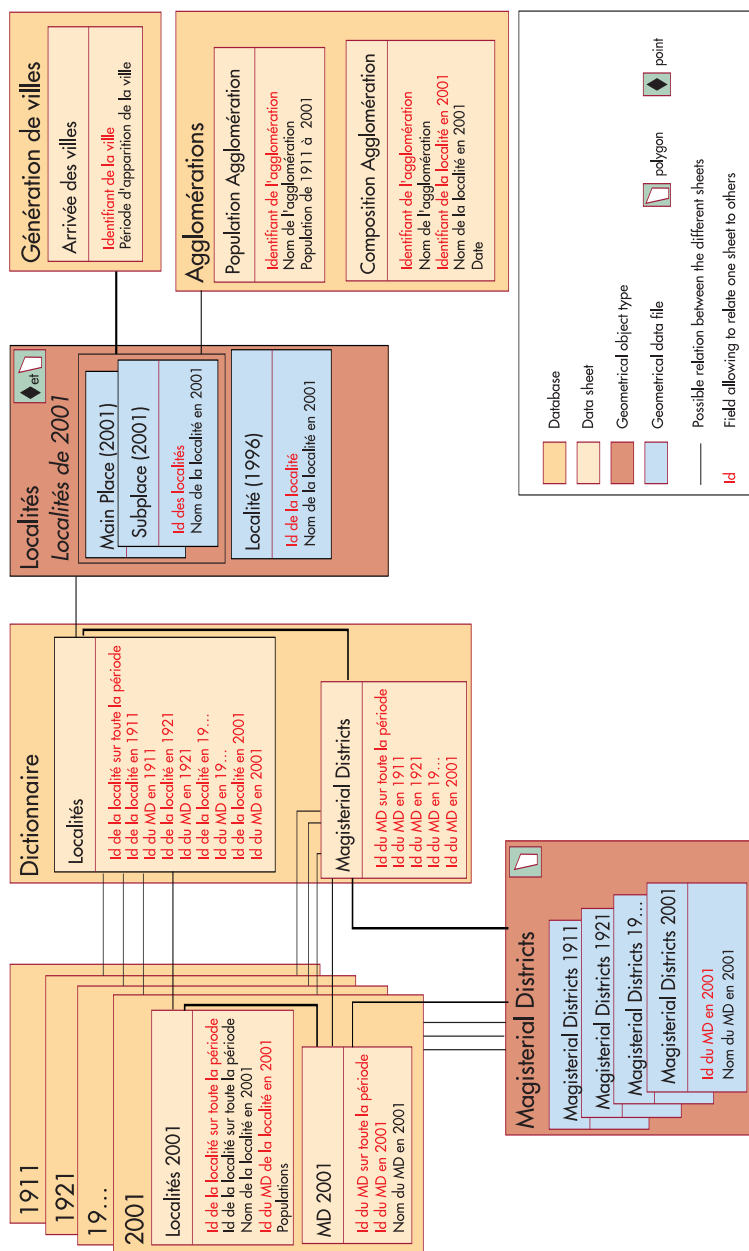


Figure 3 – Organisation of the database.

Source: T. GIRAUD, 2007.

line maps was available at a different level of generalisation. The earlier outline maps were derived from paper maps for the years 1911, 1960, 1970 and 1980, ensuring that the *places* were in the correct position in relation to administrative boundaries. For the years 1921, 1936 and 1951, as there was no outline maps enabling verification of the accuracy of the *magisterial district* boundaries, this was checked by available textual information on administrative changes, and a verification of the situation of the *places*. Thus the boundaries in these instances are less accurate than they are for the other years. It is fully possible to perform spatial analytical processing on these outline maps. In addition, the geographical objects of the MD files possess a code in common with the statistical units in the attribute files, so that it is possible to map census data from 1911 to 2001.

### *Places*

For 2001 it is possible to link all the *places* in the attribute files to GIS files. The largest possible number of *places* present before 2001 were then manually linked (on the basis of spelling proximity and belonging to a *magisterial district*). As it was not possible to assess their spatial cover or their evolution between 1911 and 2001, it is preferable to use only the centre points of *places* for any dates except 2001. These files can also be used for the representation of *urban agglomerations* and their dates of appearance. The maplayer for the new municipalities, used by Stats SA jointly with that for the *magisterial districts* for the 2001 census, is also available. This enables identification of municipalities to which *places* and districts belong, and ensures continuity with the other GIS which use only the municipality grid, such as SA Explorer, the GIS developed by the Municipal Demarcation Board.

All the Dysturb files can be used in the main GIS, most are in Shp format for Arcgis ESRI®, and some are also available in the Mid/Mif format for MapInfo®. The maplayers are accompanied by a projection file (.prj) detailing the projection and reference parameters used (geodesic system: WGS\_1984, projection system Alber's Equal Area Projection).

## Part II

# Spatial and territorial engineering in South Africa

The different post-colonial periods in the 20<sup>th</sup> century in South Africa saw intense and territorial engineering of a unique nature for the management and exploitation of spaces, first for segregationist purposes and then aiming at cohesion and unification. Beyond the general trends, the diversity of the strategies according to period, scale, environment and heritage can be distinguished. Exceptions and even aberrations that may be shown up by the systematic compilation of changes in status and boundary can take on meaning by way of comparison with other situations. Here, Dysturb provides information on the creation or appearance of new entities, and enables a periodisation reflecting the succession of models and political techniques applied to the subdivisions of spaces and representations of spaces in relation to their functional affectations and their hierarchisation. The periodisation that appears for the South African territorial engineering process thus highlights breaks or hiatuses formed by the following:

- the establishment of apartheid, and in particular the *Group Areas Act*, which was fundamental in systemising urban segregation and the differentiation among quarters and urban localities on the basis of race;
- the establishment of the ‘grand apartheid’ system, with the formation of the *homelands* from 1970. Technically, this was a “*consolidation*” of the native reserves inherited from the colonial period, aimed at creating districts on an ethnic basis, backed up by forced removals of population. These ethnic districts were aggregated to form the *homelands*;
- emergence from the apartheid system and complete territorial reorganisation, at provincial level, with the disappearance of the *homelands* and their integration into the provinces, and at municipal level with an exhaustive two-level “wall-to-wall” grid (with the exception of metropolitan areas). At provincial and municipal levels, the aim was to form entities of spatial and social cohesion bringing together the

privileged areas (white provinces and municipalities) and the underprivileged areas (ex-bantustans and *townships*) inherited from the apartheid system.

### Further information

On the subject of the heritage derived from territorial engineering and the historical-political geography of South Africa, the ground-breaking work by A.J.Christopher, and in particular his *Atlas of apartheid*, constitutes the essential reference. A large body of study generating different publications (books and journals) has been conducted on the post-apartheid territorial reforms, in particular at provincial level, positioning the issues in the long term. The French-South African team<sup>11</sup> (IRD-UKZN) formed within the framework of French-South African scientific cooperation and funded by the French foreign affairs ministry, linked to the development of the Dysturb database, has undertaken work on the models, the references and the central issues that relate to territorial subdivision and the selection of local and regional seats of government (see bibliographical indications at the end of this booklet).

## Overall architecture and the higher levels: provinces, homelands, regions

The outlines, the names, the functions and the numbers of territorial entities altered constantly in the course of the different post-colonial periods: the segregationist period, the apartheid period and the post-apartheid period. Nevertheless, despite the upheavals brought about by territorial engineering, the overall architecture of the main data collation frames for census was more or less stable with regard to the number of levels over the whole 20<sup>th</sup> century (1911 to 2001): there were three main levels: *places*, *districts* and *provinces*. In contrast, status, boundaries, denominations and numbers of these entities evolved considerably.

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<sup>11</sup> The "Territories, borderlands and urban dynamics" programme 2000-2002 (research contract in social sciences FAC-IRD-CODESRIA and a French-South African research contract) was led by F. Giraut jointly with B. Antheaume and B. Maharaj, and associated IRD and UDW, and later UKZN, with researchers from CNRS, from several French universities (Avignon, Grenoble I and Paris I) and from South African universities (Wits-Johannesburg, Fort Hare and UPE), and the president of the Demarcation Board (Michael Sutcliffe).





At the top of the scale, there were four *provinces* up to 1960 (the former colonies of the Cape and Natal and the former republics of Transvaal and Orange Free State), and these made up a homogeneous grid. In the 'grand apartheid' period, the former native reserves in these provinces formed the basis for the *homelands* (at first 9 in number and later 10, of which 4 were pseudo-independent) which appeared from the 1970 census onwards to form, with the rest of the provinces, a heterogeneous grid at the top level. From 1996, this collection of "white" provinces and bantustans disappeared in favour of a homogeneous subdivision into 9 new provinces. These were made up of the former provinces of Natal and Orange Free State and the breakdown of the former Cape province and Transvaal into 3 and 4 new entities respectively. The *homelands* were integrated as such into one or other of the new entities, preserving their outlines. Only Bophuthatswana was subdivided among three of the new provinces, and its breakdown led to a rectification of the historical border between Northern Cape province and North West province, the southern boundary of which corresponded to the former boundary of Cape province.

At the next level, secondary distinctions defining territories, sections and regions appear in the censuses. These intermediate divisions, which are not retained in the database, were either technical statistical subdivisions with no political or administrative meaning, (the census sections of 1904, and the "economic" regions of 1960), or distinctions concerning certain territories with a particular mode of administration, mainly comprising native reserves. These non-permanent intermediate subdivisions are interesting inasmuch as they appear to anticipate the political and administrative subdivisions that came into force later. The distinction that held from 1904 to 1960 regarding a few "native" territories (Zululand, Transkei) was at once an inheritance from the *treaty states* (Bechuanaland, West Griqualand also appear as particular sections of the Cape colony in the 1904 census) and a first step towards the creation of the *homelands* on the 'grand apartheid' period, by way of aggregation of the native reserves.

The 66 economic regions defined in the 1960 census are derived from an aggregation of the *magisterial districts* that does not draw away from the historical basis of the former *treaty states*<sup>12</sup>; however these regions did not form blocks in which reserves were in a majority position. In this sense, this technical subdivision based on regional specialisations is a precursor of the division into large *development regions* (1982) identified by letters (figure 4).

These regions went beyond the boundaries of the *homelands* on the basis of polar attraction of urban core on tributary areas in an attempt firstly to establish a territorial development scheme making the best possible use of

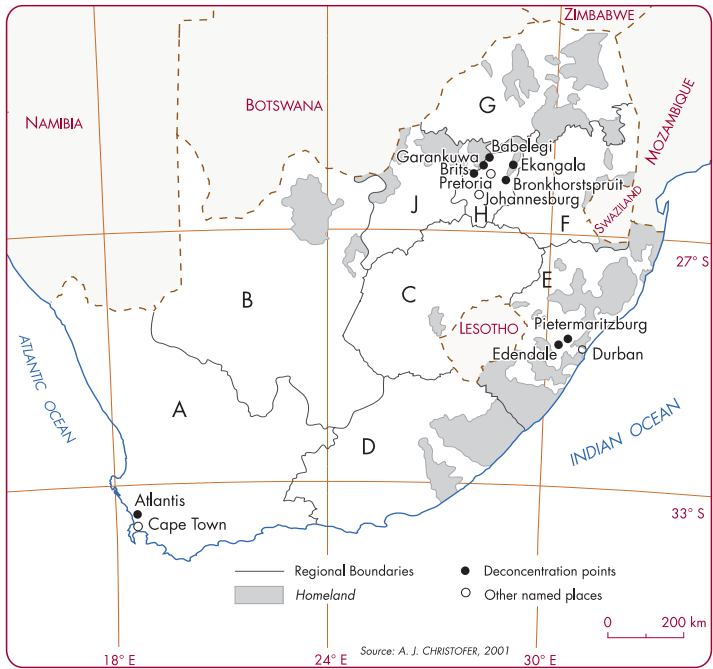


Figure 4– Development regions (1982)

12 They reconstituted the Transkeian territories and delineated a Zululand core the contours of which were particularly complex.

South African resources, and in particular the human resources of the peripheral areas constituted by the *homelands*, and secondly to manage services at regional level, distinct from the political order of the 'grand apartheid'. Here can already be seen the principles of a centre-periphery association that were to become the basis of post-apartheid patterns, established no longer with a view to exploiting resources but in a perspective of spatial solidarity and redistribution. Thus the 9 *development regions* in fact formed the basis for the post-apartheid provincial divisions (KHOSA & MUTHIEN, 1998; NARSIAH & MAHARAJ, 1997; MAHARAJ & NARSIAH, 2005).

The upper level of the provinces (and *homelands*) and the intermediate level of the regions, which was discontinuous, unstable and impermanent, both in fact correspond to aggregations of districts. The *census districts* were based on the evolving *magisterial district* subdivisions. These changed in number and contour according to successive patterns and strategies that the database systematically takes into account, and that will be discussed below, but they do form a typical framework for the whole of the 20<sup>th</sup> century. It is in these districts that the *urban places* are distinguished from the non-differentiated rural fabric. The distinction is based above all on the status of a given *place*, which is itself based on its origin and population rather than on its size. The list lengthens in the course of the 20<sup>th</sup> century, and at the same time the principles governing their distinction evolve (see details on the subject of *places* in the first part).

## **The district: from the magisterial district to the integrative municipality**

From the 18<sup>th</sup> century until the end of the 20<sup>th</sup> century the political-administrative division of the South Africa space was performed on the basis of judicial districts known by different names until 1911<sup>13</sup>, and then

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<sup>13</sup> In fact, historically speaking, there were two types of district (judicial and fiscal) which were not always merged. In Cape colony in the 19<sup>th</sup> century and up to 1910 one division came under the jurisdiction of a *civil commissioner*, and then an elected divisional council, and one district came under the jurisdiction of a *resident magistrate court*. The division could correspond to the jurisdiction of a single district such as Caledon or Paarl, or of two districts, for instance the Fort Beaufort division encompassed the district carrying that name and the district of Stockenström (mainly made up of *locations*).

as *magisterial districts*. Each unit was associated with a capital town centralising the jurisdiction. These *magisterial districts* held as the basic local subdivisions for colonial and post-colonial organisation up to the establishment of the new system of local government instating municipalities in 2000. The 20<sup>th</sup> century population censuses and the organisation of local administration used this grid, although there were variations over time. Thus the census districts consistently corresponded to the MD, but in some cases came into use with a time lapse in relation to their administrative creation. This is the case with certain MDs in Cape province created at the end of the 19<sup>th</sup> century (Simonstown in 1848; Steytlerville in 1899; Kuruman in 1896 with the *districting* of British Bechuanaland; Ignawuma annexed in 1896 in north Zululand) which do not appear in the first census in 1904, but only in the 1911 census. Later there was an anticipation of the *magisterial districts* by promotion of several new jurisdictions and related capitals via decisions already reached in the census year and often coming into force on publication (in the 1936 census the district of Keiskammahoek was already present a year earlier, the district of Ndwedwe appeared in 1921 for an official creation as a MD in 1937). For 1951 the apparent anticipation that concerns the districts of Delmas, Kirkwood, Theunissen, Sibasa, Oberholzer, Kempton Park, Sasolburg, Wesselsbron, Vredenburg, Welkom, and Venderbiljpark is linked to the fact that in the database it is the division of 1960 that has been used to compile the data for 1951 (these are in fact retrospective data for 1951 as they appear in the 1960 census using the 1960 divisions). Anticipation in the ‘grand apartheid’ period districts relates to the same phenomenon: thus numerous districts created within the 1972 movement already appear as *census districts* in 1970, alongside ethnic subdivisions of MDs into “Zulu,” “Xhosa” “Swazi” sub-districts. These sub-districts were later re-aggregated to form the Zululand, Ciskei and Kangwane MDs. The table concerning the districts (in the CD-Rom annexes) provides the following for all the *magisterial* and *census districts*: date of creation as MDs, date of appearance as CDs, denomination, successive capitals. The table also indicates the previous divisions from which they were derived, and any later changes in contour. Finally, the

table enables the MDs to be grouped according to genesis typology into four categories represented in diachronic maps.

For this typology, four main phases of *districting* and territorial engineering can be distinguished, with a degree of overlap. They correspond to the colonial strategies for territorial exploitation and (re)distribution of population, and form the territorial heritage of apartheid. The different modes of application in the course of these *districting* phases (table 3, figure 5) are as follows:

- **conquest-generated divisions** (1a) or the formation of the initial grid of districts that accompanied the progression of the colonised space;
- **first colonial subdivisions** (1b) of the initial entities;
- the progressive **tightening of the grid** and the **promotion** of new centres (2);
- the **creation of ethnic districts** to form the *homelands* (the ‘grand apartheid’ strategies) (3).

Table 2 – Number of districts according to type of genesis and census

	N° MD	Conquest-generated (1a)	First subdivisions (1b)	Tightening and promotion (2)	Ethnic districts and homelands (3)	Dis- appearance
1911	206	31	106	68		1
1921	211	31	109	71		2
1936	248	30	108	110		
1951	267	30	107	130		
1960	277	30	106	141		
1970	371	30	110	164	67	
1980	352	30	109	168	45	32
1991	370	30	105	175	60	1
2001	354	30	107	172	45	16

In 1911, of the 206 MDs, about two thirds correspond to the initial entities in the first divisions (1a and 1b) that accompanied the progression of colonised and annexed space. These first-generation MDs had already been reduced in area, since in 1911 about a third were already second

generation MDs (2) proceeding from a tightening of the grid by subdivision, along with some reorganisation.

All of the new creations from 1921 to 1960 (some hundred in number) followed this same logic of a tightening of the grid and promotion of new localities as seats of magistracy. From 1970, this trend slowed (around ten creations between 1970 and 1991) while a new wave of creations of ethnic MDs occurred within the ‘grand apartheid’ logic, and the formation of the bantustans (around 100 up to 1991, and about 40 temporary creations in 1970 before reorganisation). Thus in 1991 more than a third of the districts related to a colonial origin, a little over half corresponded to subdivisions to tighten the grid, forming districts on the basis of attraction poles, and a quarter concerned ethnic districts created within the ‘grand apartheid’ policy.

### The constitution of an initial *district* grid organisation in the colonial period

The mode of formation of this grid differed according to the nature of the colonised spaces. However an initial model can be seen: a new Cape colony district was formed overlapping the preceding district (then no longer on the colonial conquest frontline) and extending into newly integrated territory. Thus the preceding district was progressively reduced in area around its seat. In this way a town could shift from a pioneer or military frontline position to a rear base status, and then become the capital of a small colonial district no longer in contact with the frontier. The best examples of this are Stellenbosch, Graaff Reinet and Somerset West.

There were numerous variants to this model from the first half of the 19<sup>th</sup> century, at a time when the pioneer front was in contact with previous dense and well-organised occupations, that gained recognition (as protectorates or *treaty states*), or else were fought and annexed, or again reduced to the status of native spaces, after the model of the reserves developed in the colony of Natal (under the name of “*locations*”). Administrative centres could then be created *ex nihilo* to accompany a mode of colonisation based on management rather than settlement. In this case

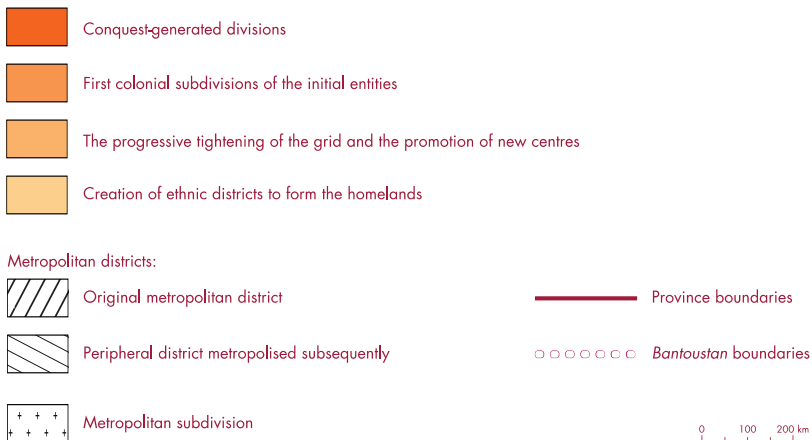
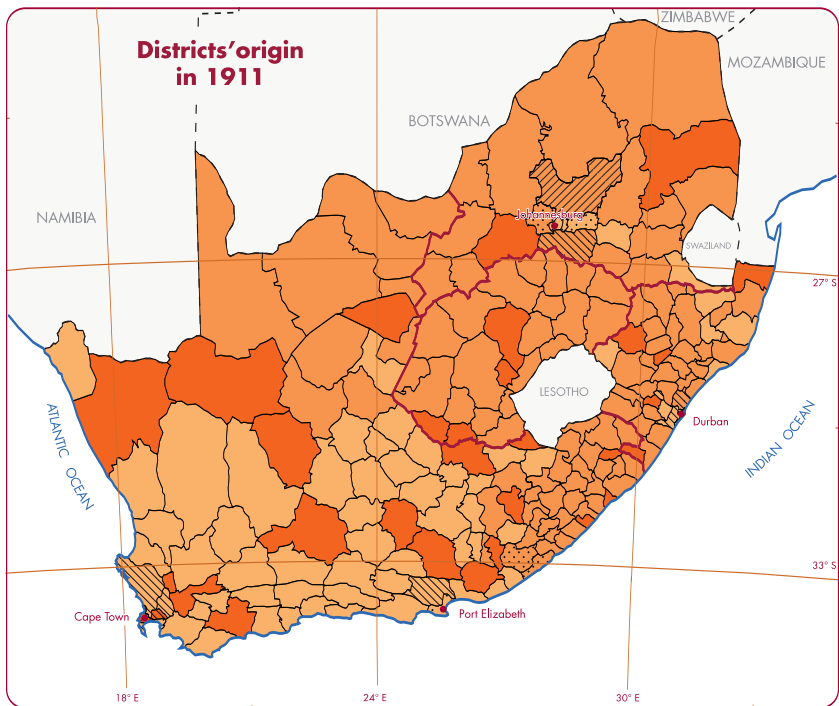
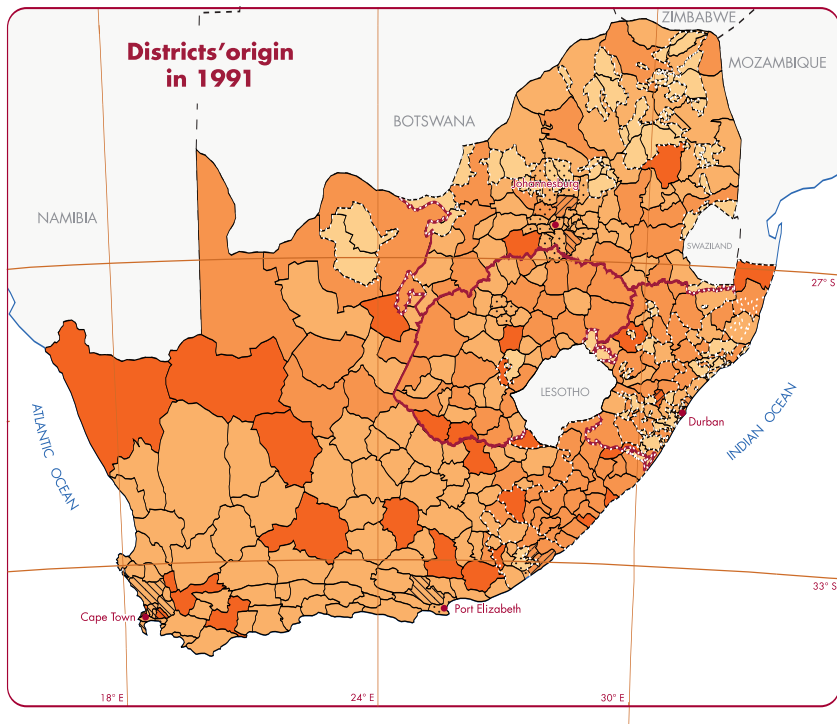
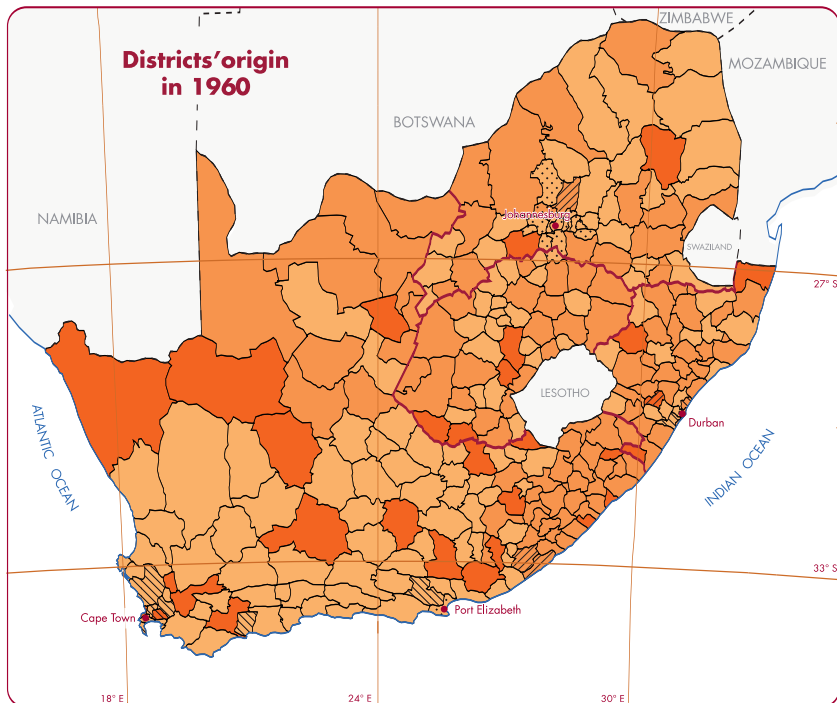


Figure 5 – Genesis of districts, typologies in 1911, 1960 and 1991.





a small white “isolate” appears, retaining its status as a district capital, sometimes becoming considered progressively as part of the native territories as in the case of the towns in the Transkeian territories, or sometimes excised from the territory initial district when it became part of a bantustan if the town was on the district fringes. Examples are King William's Town or Matatiele, around which a settlement colony established. Alongside this, the Boer conquest went forward in the interior, engendering a race towards territorial dominion via the creation of large not very organised blocks on one side (the Republics) and a boundary formed on the other side to the south by large British protectorates, the extension of Natal and the annexation of Zululand.

It is a first subdivision of these republics and treaty states once they were annexed that forms the second mode of colonial subdivision into *magisterial districts*. From the outset they were designed to divide up these territories by way of a grid, producing entities of fairly equal dimensions. But the model, defining a new district-based jurisdiction around an embryonic city as the seat of magistracy and the local capital, lacked hegemony, so that the configurations of the colonial districts, their cartography and their denominations show varying practices and different models. Five regional instances can be mentioned:

- Natal, with the first division, Natalia, (centred on Pietermaritzburg) was subdivided into large entities delineated by the main rivers, and these entities were in some cases centred (Impafana on Weenen; Pietermaritzburg on Pietermartitzburg; and d'Urban on Port Natal), in some non-centred, on the fringes (Umvoti, Umzynnnyati and Upper Tugela), or on the coast (Lower Umzikulu, Lower Tugela, Alexandra, Umlalasi);
- Zululand, following the difficult period of subjugation to colonisation, was first of all broken down into competing chiefdoms, and then, once annexed, was divided into districts that returned to some of the tribal divisions. North-west Zululand was integrated into the South African Republic, and later returned to Natal, forming polarised districts: Vryheid, Utrecht, Paulpietersburg;

- Transvaal underwent a first subdivision with territories named after the local seat of magistracy, and others named according to the natural regions and resources: Waterberg, Witwatersrand, Soutpansberg. The layout of the districts is a roughly circular configuration surrounding the main mining, industrial and settlement centre, Witwatersrand. Beyond, the districts were distributed in sectors with their capitals decentred and close to the provincial core, forming a first and second ring. Krugersdorp, Pretoria, Middelburg or Heidelberg were the centripetal local capitals in the first ring, Rustenburg, Nylstroom (for Waterberg), Pietersburg (for Soutpansberg) and Lydenburg were in the second outer ring in the Transvaal;
- the Orange Free State was divided from the outset (including the southern part made up of concessions and *treaty states*) following a regular grid organised on a network of small towns;
- the Transkeian territories were subdivided before 1904 into districts which were derived from the initial divisions into treaty states progressively annexed between 1879 and 1894: Fingoland, Tembuland, Pondoland, and Griqualand East; they however still appear in the 1911 and 1921 censuses as intermediate subdivisions comprising districts with a particular administrative status.

The hybrid denomination of the districts illustrates the plural nature of their configurations. The names of the seats of magistracy dominate (rarely based on African *place* names, except in the Transkeian territories) and they were exclusively used in the Orange Free State. However other denominations occur in two forms, that relating to British culture and history on the one hand (in particular in the ex-Cape colony), and on the other hand that relating to environmental features (in particular in Transvaal and ex-Zululand (GIRAUT *et al.*, 2008).

### A progressive tightening of the grid

The subdivision of the initial grid began as early as the first third of the 19<sup>th</sup> century, but continued throughout the 20<sup>th</sup> century (more than 150 creations between 1911 and 1996, most occurring before 1970). The

driving force behind this phenomenon was the densification of the administrative cover, relating first to the promotion of new localities (rural centres), and later to that of mining compounds and metropolitan peripheries which acquired municipal status at much the same time. The mode of creation of new districts sometimes involved mere subdivision of the previous grid, sometimes the creation of a new contour by way of amputation of several existing districts (the most frequent instance). Thus the evolution of the territorial grid both reflects and accompanies the evolution of population distribution, and the South African industrial infrastructure which was considerably reshaped by the development of mining activity and industrialisation. All the districts created in this logic carry names that relate to their capital (seat of the magistracy). The case of the successive creations in Orange Free State illustrates the variety of different modes of creation, with the promotion of small rural towns between the two world wars, and from 1950 a reorganisation of the new mining basin and its surrounding areas.

Where promotions concern secondary crossroad points, the new district encroaches on several surrounding districts (for instance Dewetsdorp and Reiz, created in the 1920s, each overlapping four surrounding districts). When the secondary centre promoted is not far from the previous district capital, it is the surrounding area or hinterland that is subdivided (creation of Vredendal in Vanrhynsdorp, for instance). Finally, there is the case of the breaking-up of a district to form several entities, such as Rustenburg in 1963 becoming 4 entities with the creation of Koster to the south, Schwartruggens to the west and Thabazimbi to the north.

Divisions within a dense fabric of small towns (the Cape Town region) give small districts (for instance Wellington from Paarl or Vredeburch and Hopetown from Malmesbury), while a little further away in areas of less dense fabric subdivisions yield large districts such as Williston from Fraserburg. If the *magisterial districts* of the conquest period were practically all progressively subdivided, in contrast the division into *magisterial districts* corresponding to a first subdivision of the *treaty states* after annexation appears relatively stable, and hence not much affected by this

phase of creation of new districts. This is particularly true for the ex-Transkeian territories, and also to a degree for ex-Zululand.

### The creation of ethnic districts

The creation of ethnic rather than functional districts from 1970 belongs to the 'grand apartheid' policies aimed at forming independent *homelands*, accompanied by the mass expulsion of black urban populations towards these bantustans according to their affiliation to the various linguistic groups.

The first stage was the formation of territorial blocks to make up the future *homelands*. This process started with the 1970 census in the form of ethnic sub-districts for the Zulus, the (Ciskei or Transkei) Xhosas, the Swazis, the Tswanas, the Lebowas, the Vendas, the Basothos and the Matshanganas. These new Bantu districts were subdivisions of existing *magisterial districts*, and were subsequently recomposed to form a new set of *magisterial districts*, this time cross-sectional as for the KwaZulu district. In addition, adjustments and even major changes (as for Ciskei) were made throughout the "consolidations."

In most cases, the creation of districts forming the *homelands* was performed by aggregation of the former native reserves, which were removed from the jurisdiction of the districts in which they were situated. This process concerned the bantustans other than Transkei, which was already divided into a system of districts and which was converted as such into a *homeland*, with merely a few adjustments on its margins.<sup>14</sup> Instances of major reconfiguration of the district map were seen during this phase (also affecting districts bordering on those that were directly concerned by the creation of the new ethnic districts) (figure 5).

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<sup>14</sup> In the perspective of the creation of Transkei, the districts of McLeer, Eliot and Mount Currie were first of all removed from the Transkeian territories. The districts of Herreshel and Glen Grey, historically outside the Transkeian territories, were then integrated into Transkei according to a "consolidation" logic, although they had initially (1970) been allocated to Ciskei. Within the Transkeian territories, the small colonial coastal towns (Port Saint Johns) and towns in the interior (Umtata, Butterworth, etc.) were integrated (after certain hesitations for port Saint-Johns and Umtata) into the independent homeland; only Matatiele, a border town, was removed and attached to the Mount Currie district of Natal.

A few examples can be cited:

- in the north, the district of Soutpansberg was first of all subdivided into five entities which then occupied only the north-west part of the district existing at the start of the century. The creation of Venda and Gazankulu led to the dismantling of the district of Sibasa in the north-east, and the white sector of this former MD was then attached, without spatial continuity, to Soutpansberg which thus integrated a piece of Kruger park situated on the other side of Venda which was independent;
- the district of Letaba in the 1970s first of all lost several sections in the centre-north to create Lebowa, and in 1982 all the centre and east of Gazankulu was separated from it for the promotion of the mining town of Phalaborwa, one of the entrances to Kruger park. Letaba survived in residual form (with no eponymous *place*, and cut off from Kruger) between two fragments of Lebowa;
- Maluti (ex-Matatiele) was the Xhosa part of the original Matatiele district, while the white part was attached to Mount Currie. Thus a paradoxical situation occurred in which there was a Matatiele district in Transkei that did not include the town of Matatiele which was situated in the district of Mount Currie;
- the disappearance of the district of Mafeking: this district first of all lost its south and central zone in 1971, with the creation of Bophuthatswana. It was then in two distinct parts; the northern part with the town of Mafeking was transferred to Bophuthatswana in 1980 and became part of the district of Molopo. The southern part, with no district capital, was then transferred to Vryburg.

The administrative reorganisation of the metropolitan peripheries was also affected by this racist territorial engineering. Large *townships* (Umlazi in Durban) and/or informal peripheral areas (Mdantsane in East London, Zwelisha in King William's Town, Odi-Moretele in Pretoria, or Mpumalanga between Durban and Pietermaritzburg) graduated to the status of districts before being used to create a *homeland* or being joined to one. Thus the *homelands*, structurally, are spaces with a rural centre, some-

times dense, with their main *urban agglomerations* on the fringes. The ‘grand apartheid’ territorial reorganisation reinforced the dual nature of South African spaces, already organised via the municipal system and land ownership patterns. This dual nature pervaded the political and administrative spheres and underpinned all public territorial policy, whether administrative, judicial, or technical. The territorial patterns were, from then on, defined sometimes on functional criteria, sometimes on racial criteria, yet the territory was mapped out on modern, rational principles of grid and nesting. The result was that the territorial patterns in South Africa yielded a mosaic of discontinuous, profoundly heterogeneous spaces. Thus the ‘grand apartheid’ territorial policies appear in some ways as a post-modern territorial management freak.

## **South African post-apartheid territorial engineering**

### **Establishment of a coherent system**

After reviewing the subdivision into provinces, and removing the former bantustans, New South Africa set out to establish a rational, equalitarian municipal system. A spatial-social mix, alongside a “wall-to-wall” type grid with nested subdivisions (province, district and local municipalities) were the main underpinning principles of this system. There are however notable exceptions that do not obey the rationale. These exceptions concern first of all the metropolitan areas which became autonomous within the municipal and provincial system, and secondly the areas on the fringes of the new provincial divisions, for which hybrid status was coined in the form of the *District Management Areas* (DMA) and the *Cross Boundaries Municipalities* (Local and District Councils) (CBLC and CBDC).

For this purpose, a law derived from a White Paper created a mandate for an independent body, the *South African Municipal Demarcation Board*. This, in compliance with the 1996 Constitution, was to provide South Africa with an equalitarian local government system using an overall grid system for the territory, which had not been fully achieved

in the interim system, the Transitional Local Councils (TLC) established for the first local elections in 1996, and found in the 1996 census. The emphasis, in particular in the *demarcation objectives*, was on the ability of the different entities to ensure basic services to their populations, which implied resorting to socially composite entities of a size that would provide the local government body with a sufficient financial base. A fundamental aspect of the policy can be seen in the wording: a need for coherent, inclusive and non-fragmented entities, opening up scope for the establishment of metropolitan areas. However a set of general criteria were also enumerated to be taken into account: environmental, topographical and physical characteristics, the traditional rural community areas, commuting patterns and use of infrastructures, and other administrative borders.

### The fringe areas, at the heart of the South African territorial reorganisation

One of the challenges facing social, political and territorial reorganisation in post-apartheid South Africa is the way in which it was to process its internal fringe areas, those fringes where “second rate” citizens were relegated, areas distant from the economic and political centres. The task was to rehabilitate and reintegrate them, and for this purpose two requirements, to some degree contradictory, had to be met: differences in status needed to be abolished, and solidarity, hence a social mix, needed to be introduced into the new entities and institutions. The issue of how to manage the fringe areas inherited from the past thus became crucial. The issue, after dominating the debate on the subdivision into provinces, was equally central for municipal subdivision. This focus of debate on internal fringe areas, rather than on potential centres, first of all led to the inclusion in the interim constitution of a nominative list of 1994 potential border conflicts arising from the subdivision into nine provinces. Such conflicts were to be solved by referendum and/or by the new system of local government. Some of these border conflicts, in particular that of Bushbuckridge, have been studied in detail (RAMUTSINDELA, 1998, 2001; NARSIAH & MAHARAJ, 1999).

Between 1996 and 2000, the debate on the subject of the *transitional local councils* also focused on the way in which internal fringe areas should be dealt with. The TLCs, created in haste, were an extension of the municipal status that had hitherto been restricted to white quarters of towns and cities. While integrating non-white *townships* in the name of spatial-social solidarity, the TLCs were often disputed because they ignored the informal or semi-rural peripheries of towns and cities, as well as urbanised areas that had shifted beyond the boundaries of the former bantustans (McCARTHY & BERNSTEIN, 1998).

Finally, with the “wall-to-wall” grid across the whole South African territory dividing it into municipalities, metropolitan areas and districts at the end of the 1990s, the question of the customary authorities returned, and more generally the issue of autonomy for the rural peripheries. Against a backdrop of *African renaissance* claims launched by President Thabo Mbeki, with wide scope for interpretation, the calls of the customary authorities, threatened and marginalised by the new local government proposals, met with popular support. Setting aside the issues of redistribution of wealth among composite municipal entities, these demands, which were for a while met by the TLCs, failed in certain cases. In KwaZulu-Natal they led to the establishment of municipal entities that were completely deprived of resources, but homogeneous in socio-economic terms. In fact this amounted to granting administrative autonomy to a certain number of displaced urban fragments in the internal fringe areas of the ex-bantustans, with their customary rural environments and in some instances some modern agriculture.

Thus the sector of Loskop<sup>15</sup> constituted a municipality (Imbabazane Local Municipality, KZ336) that was independent from the industrial towns of Estcourt (Umtshezi Local Municipality, KZ234) and Ladysmith (Emnambithi-Ladysmith Local Municipality, KZ232), although the

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<sup>15</sup> It should be noted that Loskop, a bantustan urban zone in ex-KwaZulu on the railway line from Estcourt to Bergville, does not appear as a locality or place, or indeed as an urban area, in the censuses, since it was divided among several chiefdoms each extending beyond the urban area.



mayor resided there in 2002. In Eastern Cape province, it is also the case for the municipality of Peddie (Ngqushwa Local Municipality, EC126) which, with the sector of Glenmore, gained autonomy with regard to Grahamstown (Makana Local Municipality, EC104) and King Williams Town/East London (Buffalo City Local Municipality, EC125).

What we have here, in contradiction with regard to the general policies of the new divisions, is an officialisation of the administrative divides inherited from the 'grand apartheid' between small towns and dependent displaced urban zones. This yields the series of diagrams given in part III devoted to towns and cities, which shows the municipal phases for these displaced urbanised sectors.

The debate on the challenges of a radical reform of the state's territorial organisation thus focused on how to deal with internal fringe areas. It is indeed true that in South Africa, whatever the scale, contrasts are extreme in the fringe areas of the entities inherited from previous periods, and that the phenomena of discontinuity were exacerbated by the 'grand apartheid' policies.

### "Empty fringes" and "full fringes"

On national and regional scale, it is however possible to distinguish two very different, contrasted, marginal spaces or fringes. There are indeed on the one hand what could be called "empty fringes," often also positioned on international borders, and characterised by very low population densities, with systems of management dominated by environmental protection of the national park or reserve type, former buffer zones between an isolated South Africa and the 'frontline states'. On the other there are the "full fringes" urban fragments that were shifted outside the contours of the former bantustans, which form a particular South African feature. They are directly inherited from the displaced urbanisation policies enacted within the 'grand apartheid', and the establishment of the bantustans with their peripheral 'dumping grounds': this corresponds to a type of urbanisation directly projected several tens of kilometres away from a central town in the form of urban fragments with no central element.

Besides the centres of metropolitan areas and dense rural areas (Zulu, Venda and Xhosa in particular), the population distribution map also highlights these 'dumping grounds' (ALLANIC, 2003; MCCARTHY & BERNSTEIN, 1998). These spaces, located on the borders of the former bantustans, also found themselves on the fringes of the administrative divisions of the new province map. This is particularly true on the borders between the provinces of Limpopo and North-West and the provinces of Gauteng and Mpumalanga. There are three patterns:

- peri-metropolitan settlement: the northern periphery of Pretoria (city of Tshwane) where the last perimeter integrates the main dumping grounds of Odi Moretele (GERVAIS-LAMBONY & GUILLAUME, 1999);
- settlement on the peripheries of small towns: Groblersdal and Marble Hill which integrate the displaced urban areas derived from ex-Lebowa (RAMUTSINDELA, 2001);
- residential basins on the national borders; Bushbuckridge on the edges of Kruger park and to the north of Nelspruit (NARSIAH & MAHARAJ, 1999; RAMUTSINDELA, 2001).

In other instances, these former bantustan "full" fringes are integrated into a composite province, and are today poor urban isolates on the fringes of the metropolises (Mpumalanga to the north of Durban, Botshabelo and Thaba N'Chu to the east of Bloemfontein, Mdantsane and Zwelisha to the north-west of East London, Esikaweni some way from the Empangeni-Richard's Bay axis). They are thus on the fringes within new municipalities, either metropolitan (type A municipality) such as Durban, or non-metropolitan (type B municipalities), like East London/ King William's Town, Bloemfontein or Empangeni/Richard's Bay (GIRAUT & MAHARAJ, 2003). To comply at local level with the principle whereby well-provided centres are associated with underprivileged peripheries, the new municipalities in some instances comprise entities that are discontinuous in spatial terms but functionally interdependent.

There are composite situations in which "empty" and "full" fringes coexist. This is particularly true to the north and west of KwaZuluNatal with the complexes of parks and reserves (Maputaland, Drakensberg)

which are known internationally (Unesco World Heritage) and lie alongside dense rural areas (Zululand) or areas assimilated to the dumping grounds (Drakensberg piedmont). The South African provincial borders, which perpetuate the discontinuities of apartheid at regional level, are remarkable with respect to population distribution. They present an irregular succession of human concentrations and human vacuums, which are reiterated in the grid of the new municipal entities and in their statuses.

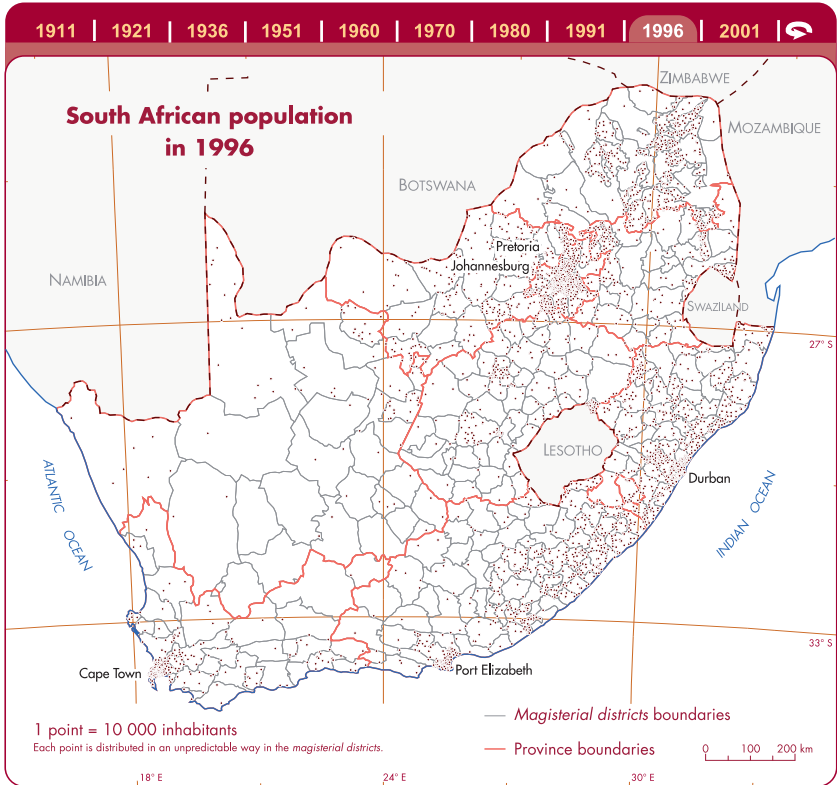


Figure 6—Distribution of the South African population (1996).

### The administrative treatment of “empty” and “full fringes”

When the two maps (figures 6 and 7) are set one alongside the other, it can be seen that parts of the “full fringes” have the status of *Cross-Boundary Local Municipalities*, which have been done away with today by the alteration of provincial boundaries. This is true in particular of the area round the conurbation Johannesburg-Pretoria, and on the fringes of the provinces of Limpopo and Mpumalanga for the much-disputed region of Bushbuckridge, but the treatment was not applied to the southern borders of KwaZulu-Natal following refusal by the provincial authorities. The “empty fringes,” which are numerous along international borders and in Northern Cape province, constitute areas that are administered by the districts (*District Management Areas*), so that they come under the second level of local government, and thus escape the integral “municipalisation” of the South African territory.

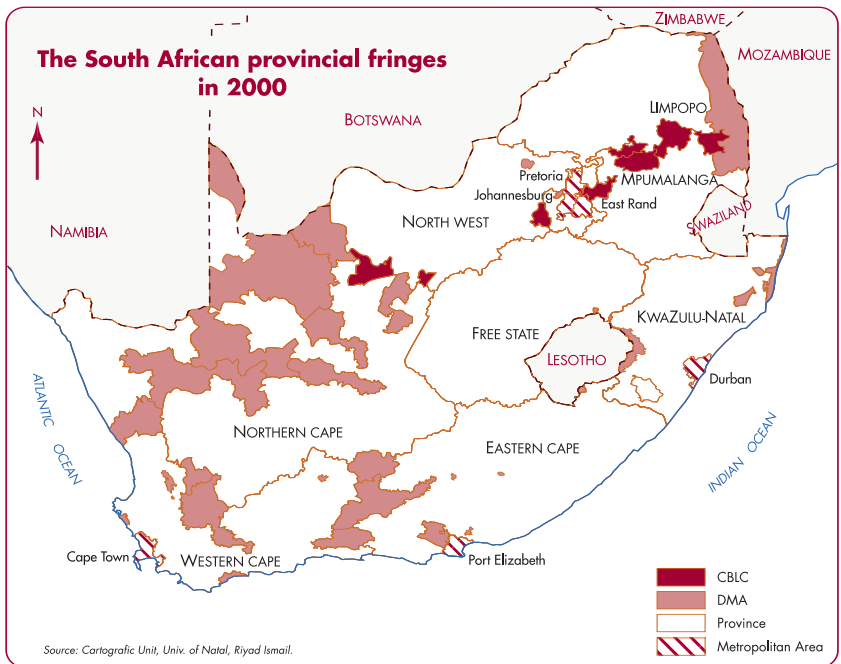


Figure 7–The South African provincial fringes (2000).

## Part III

# The spatial and territorial dimensions of urbanisation

The urbanisation of South Africa occurred in rather unique circumstances, linked first of all to the different phases of economic development which gave the main role to port cities on the periphery, and later to mining cities in the interior. The processes of urbanisation were then subjected to a shaping process in the form of the spatial and ethnic apartheid policies, on national scale and on intra-urban scale. It is for this reason that the South African town and city system is often presented as being specific or unique, and difficult to compare with any other, all the more so because the different populations have not had the same rates of growth<sup>16</sup>, so that the whole system is very heterogeneous.

## A town and city system halfway between developing country and new emerging country: advanced urbanisation

### Colonisation, urban frontiers and the occupation of the territory (generation of towns and cities)

Towns in the pre-colonial period were rare, but there were some, so that it is justified to refer to a “pre-colonial stage”<sup>17</sup> which more widely concerns southern Africa, and only the margins of the present South Africa. The urban area of Mapungubwe situated on the northern border appears as the first instance of an isolated *urban agglomeration* with political and economic functions. The Tswana “agro-towns,” some of which set up and

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<sup>16</sup> This refers to the racial classification in force under apartheid, which divided the population into four rigid, sophisticated categories: White, Black (or Bantu) Asian or Indian, and Coloured. Despite the end of apartheid and of segregation policies, these categories are still used today, even if the term “Black” now refers more and more in the new South Africa to all “non-whites” (GERVAIS-LAMBONY, 1997). See Part 1 of this booklet.

<sup>17</sup> This chronology is derived from that established by R.J.Davies in 1972, which we have reshaped and completed. Davies is one of the few South African geographers to have analysed the organisation of the urban network and to have conducted comparative studies on all the towns and cities in the country.

developed within present-day South African territory (Dithaking, Kaditshwene), probably over several centuries from the middle of the second millennium, are certainly the most notable pre-colonial South African agglomerations for their size and longevity, and they were indeed in existence at the time of the first colonial incursions (FREUND, 2007). Two capitals of warrior kingdoms should also be mentioned, Ulundi for the Zulus and Thabo Bosiu for the Basothos, also in existence as native agglomerations at the time of the 19<sup>th</sup> century colonisations.

Cape Town was the first *place* to see urban concentration of colonial origin from 1652 and the establishment of the Dutch East India Africa trading company. This is the “colonial pre-industrial phase” extending from 1652 to 1806. No town, in the sense Europeans would give the word, existed on the territory before this date, and it was the implementation of the Western colonial model (COQUERY-VIDROVITCH, 1993) that marked the beginnings of modern urbanisation. If across the African continent generally, the African colonial town was not a white town, South Africa constitutes an exception, with Cape Town being the only white city in black Africa until as late as the end of the 19<sup>th</sup> century. Thus the originality of the establishment of the South African urban system and its evolution over time highlight its marked dependence on, and openness towards, the outside world. The first clusters of urban population, established by successive urban frontiers, were totally dependent, in particular in economic and trading terms, on the outside world. At this stage in the process of urbanisation, the main centres of urban growth were the coastal towns, the ports, and the towns situated in the immediate hinterland: Cape Town first of all, since up to the start of the 19<sup>th</sup> century ten of the thirteen established towns were situated around Cape Town, the others being Durban, Port Elizabeth, Grahamstown and secondarily East London. The arrival of the British settlers in Durban in 1824 emphasised the prime role of the ports in the process of urbanisation (the “Colonial transition stage” 1806-1833). These various urban areas maintained marked autonomy, and each developed relatively dense communication networks with their immediate influence

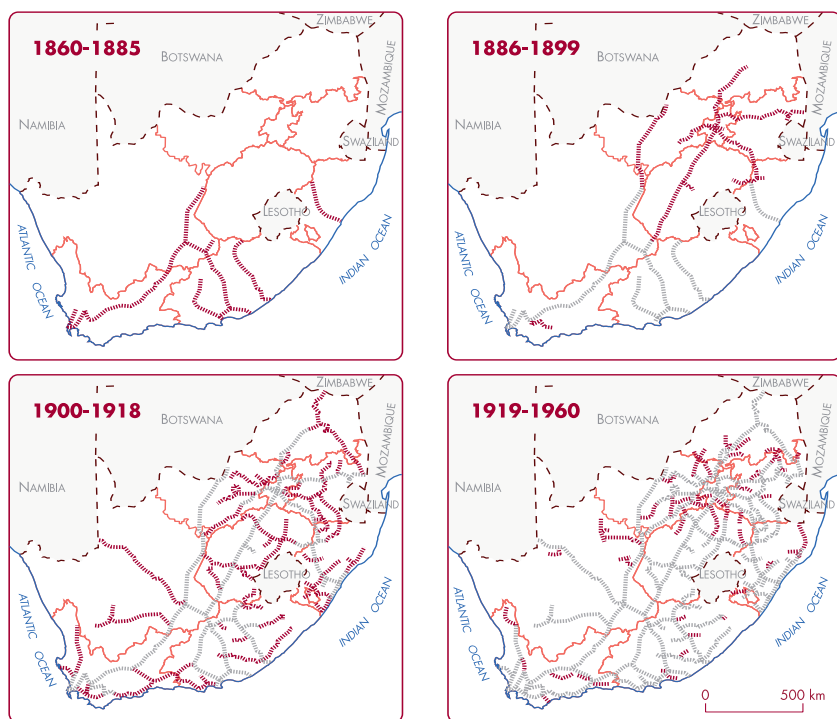
zones, but there were few links from one to the other. There was little integration among these areas of urban growth. Before 1860, urban development thus remained linked to the growth of regional economies, entirely created by Dutch and British settlers.

### Discoveries of mineral wealth: acceleration of the urbanisation process on the interior

The discovery of diamonds in Kimberley and gold in Johannesburg (the “Mid and late colonial stage”) between 1867 and 1883 was the starting point of a different configuration of the urban structure. This change led to the appearance of a new centre, Witwatersrand, in the present-day province of Gauteng; its position in the interior of the territory and its increasing weight, rapidly reaching a dominant position, led to the reorientation of inter-urban relationships and communication networks.

It was between 1870 and 1930 that there was the most marked acceleration in the growth of new towns in the whole history of South Africa. The combination of this phenomenon and the political unification of the country by way of the Union Act in 1910 led to a continuous reinforcement of the degree of territorial cohesion in the course of the 20<sup>th</sup> century. Thereafter, situation in relation to the main existing communications, and in particular the railways, was a determining factor (figure 8), with the region around Johannesburg becoming a railway centre that was essential in the process of urban growth. Another more secondary event occurred in the 1920s in the form of a prolonged drought, which led to population migrations from the country to the towns.

The speed of evolution was closely linked to the economic upheavals in the last decade of the “Late colonial transition stage,” which was an economic expansion phase, characterised by the healthy mining sector (in the Transvaal –present-day Gauteng– and Orange Free State) and by the intensification of agriculture, in the course of which the foundations of the industrial expansion of the 1930s were laid. Unprecedented rural exodus, mainly made up of Afrikaner farmers, fed the growth of towns in this period. The decisive factor, after the discovery of mineral wealth,



Source: UMR Géographie-Cités.

Figure 8 – The establishment of the railways (1860 to 1960).

was the intense industrial development from 1933 (the “Industrial colonial and apartheid stage”). The rapid economic expansion, which accelerated with the industrial era, progressively affected the major part of the South African territory in a variety of ways.

However, the creations of towns after 1933 were concentrated in the most dynamic industrial regions, in particular the mining interior. The succession of creations very well demonstrates that the town system was young and underwent major changes in its spatial layout until very recent years. This is in particular the case with the new entities created after 1960, during the apartheid period, almost exclusively located in the bantustans or in the peripheries of the main urban areas, intended to act as de-concentration poles of attraction (Atlantis, to the north of Cape



Town for instance). The establishment of an urban system, seen through the successive waves of creations of towns, provides awareness that the system is very young, that growth has been very fast, and closely linked to economic and later to political upheavals in South Africa.

### Recent intense phases of urbanisation

In recent decades, the rates of urban growth partly reflect the political upheavals that have occurred. The *influx control* laws restricting flows of black populations towards the towns and cities<sup>18</sup> which were implemented by way of passes (removed in 1986) and the end of the apartheid regime in 1994 both had repercussions on migrations between the rural and urban spaces. In addition, entry into a post-fordist urbanisation phase brought a change in the economy, the growth of which was then generated by other sectors, mainly tertiary, such as trade or tourism, notably in association with the arrival of foreign capital. These most recent changes show that between the private sector and local government, and between the private sector and the state powers, within the *Growth, Employment and Redistribution policy* (GEAR), relationships altered fundamentally. The main characteristic of present-day urbanisation is a more marked networking of towns and cities, and the concentration of the urban population and activity in the metropolitan areas, in a process of “metropolisation.” It should be emphasised that overall the urbanisation boom occurred suddenly and very fast, considering that it occurred within a rural civilisation.

Thus South Africa today presents numerous spatial disparities. The different features inherited from its history that were mentioned earlier led to migratory flows that contributed to creating considerable variations. In more precise terms, the different phases of urbanisation generated three

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<sup>18</sup> The Native Urban Areas Act of 1923 marks the start of urban segregation, well before the official instatement of apartheid. It is crucial in that it underpins all subsequent legislation. The Act signalled the start of residential segregation by giving municipalities the power to create quarters reserved for Africans. In addition, the text established a system of population control (*influx control*) involving “passes” (these passes carried the name of the employer, and enabled black workers to leave the bantustans, native population reserves, to go to work in town. At the outset, the system was not widely observed. Indeed the periods in which the mining industry developed and industry expanded created considerable needs for labour in the towns and cities, so that influx control lost a large part of its relevance in most towns. The text was later strengthened by an amendment in 1937.

main zones of urban concentration, although without any phenomenon of macrocephaly, which is rather remarkable for the African continent. The primacy index<sup>19</sup> between the first and second *urban agglomerations* is only 2. In addition, the degree of urbanisation is unequally spread according to the province (nine in number since the presidential election of 1994). Gauteng province, which includes the three metropolitan areas of Johannesburg, East Rand (Ekurhuleni<sup>20</sup>) and Pretoria (Tshwane) obviously heads the list with an urbanised population rate of 99.6%, followed by Western Cape province (95.1%). At the other extreme Northern Province has a proportion under 20% (11% according to the 1996 census for this province). Thus the provinces are at different stages in the process of urban transition, and with considerable differences between regions.

These towns and cities form an urban fabric across the national territory that is hierarchised by the various relationships they entertain one with another. Towns and cities, from the smallest to the largest, are in constant contact and the dynamics of their evolution are complementary and inter-dependent.

## **What definition can be given of the city or the urban object in South Africa?**

### **A restrictive definition until 1991**

Defining what is urban and what is not, and outlining the different spaces correctly are delicate matters involving variations over time. Should towns and cities be defined administratively or statistically? Should urban entities be outlined according to morphological of func-

<sup>19</sup> The primacy index has been calculated since Jefferson (1939) by measuring the relationship between the population of the first city and that of the second ( $P_1/P_2$ ). F. Moriconi-Ebrard (1993) proposed a generalisation of this notion, distinguishing as metropolises the city or cities situated immediately above the greatest discontinuity threshold in the distribution of city size ( $P_i/P_j$  max) and named this the macrocephaly index. It is therefore not the same measure, but in theory if  $\alpha = 1$  in Zipf's law, it can be expected that  $P_1/P_2 = 2$ . In practice, the worldwide mean according to F. Moriconi-Ebrard should be around 4 or 5.

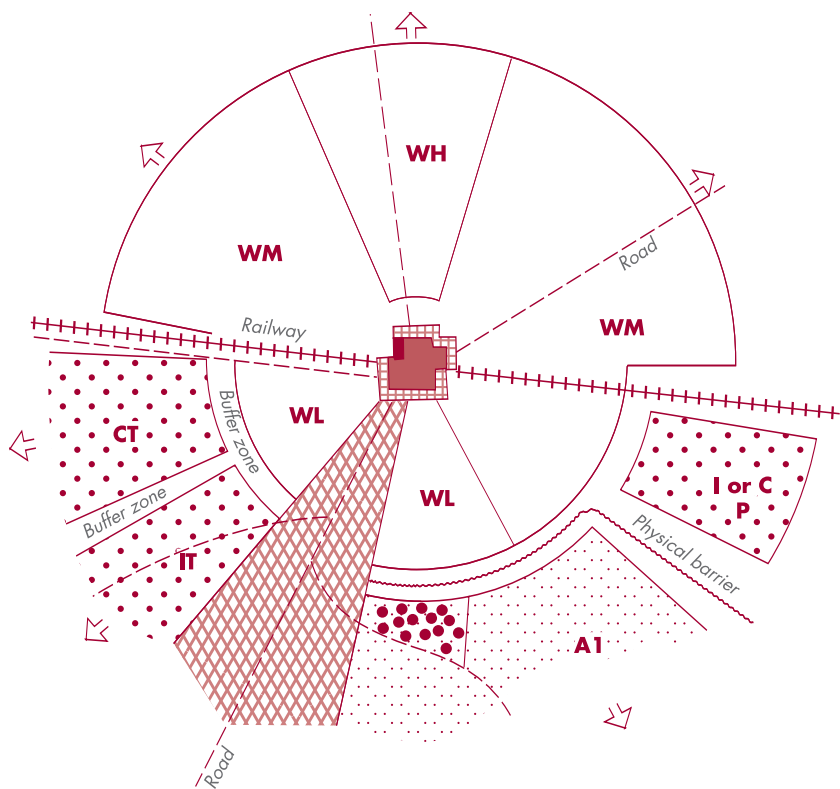
<sup>20</sup> The renaming of municipalities affected the names of most of the metropolitan areas, with the exception of Johannesburg and Cape Town.

tional criteria? These different options are part of the general consideration devoted to towns, cities and issues of urbanisation across the world today. And the issue is all the more crucial in South Africa because displacements in the urbanisation process have upset relationships between town and country. Thus very high concentrations of population are found in certain parts of the territory, while at the same time these areas show no organisation into urban poles of attraction, nor any availability of the functions and services that belong to a town or city. In this context, the definition and delimitation of urban spaces is a genuine political challenge.

The layout of the apartheid city (figures 9 and 10) shows that it is not possible to use morphological *agglomeration* criteria to define urban areas. Indeed, there are discontinuities and breaks of two types, firstly between the *townships* and the *Central Business Districts* (CBDs), materialised by buffer zones, and secondly between these centres and urban fragments that developed some distance from the borders of the former bantustans.

Neither does the administrative criterion appear as being operational, since the different generations of South African municipalities covered only segments of *urban agglomerations* in the apartheid era, while in the case of the new municipal system they cover areas extending beyond the urban peripheries of metropolitan areas, or else group several secondary towns. Only the interim structure the *Transitional Local Councils* (TLCs) remained close to the perimeters of the *urban agglomerations* and extended to include the *townships*, the ex-municipalities of the apartheid era made up of CBDs, and white suburbs. However, these transitional structures did not include the *urban agglomerations* that developed beyond the boundaries of the former bantustans, structurally linked to the cities or towns of which they were projections.

The presentation of the urban object in censuses is in this respect a faithful picture of the fragmented structure of the South African town or city (the Davies model, figure 9). There is indeed no official definition of urbanised spaces that is equivalent, for instance, to the French “*aires urbaines*”<sup>21</sup> or to the *Metropolitan Statistical Areas* (MSA)<sup>22</sup> in the



### Residential areas

White CBD

Indian CBD

CBD frame

Industrial

White group area

African area

Indian or Coloured group area

**I** Indian **C** Coloured **T** Township **P** Privately developed

Hostel **A1** Municipal township

### Socio-economic status (white group area)

**H** High **M** Middle **L** Low

*Domestic servants quarters not shown.*

*Source: R.J. DAVIS, 1981.*

Figure 9– The model of the apartheid city according to Davies.

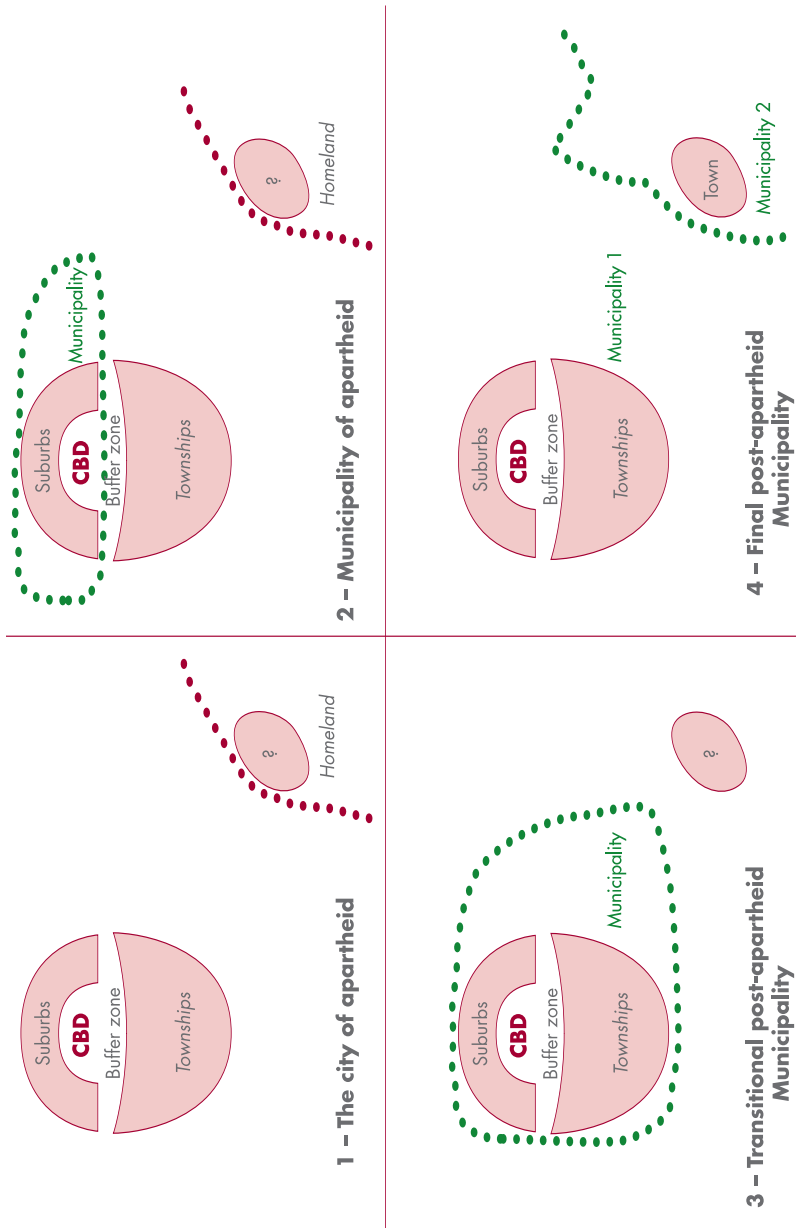


Figure 10 – The apartheid city and the succession of municipal systems (GRAUT, 2005).

United States (which are functional urban areas). The different definitions presented in the censuses fairly clearly show that throughout the 20<sup>th</sup> century a legal definition of the city is preferred. This is indeed a satisfactory approach when the issue is to control a territorial entity, but it is nevertheless unstable in the long term, and this is particularly true in South Africa where political action has considerably altered and shaped the territory, whatever the scale envisaged. The definition of the urban object was markedly restricted from 1960, and clearly expresses the establishment of the apartheid system, with the city being above all intended for the white population. It is however instructive to see that, very early on, the statistical departments were not satisfied with the definition, and that they put emphasis on the existence of spaces that could be considered as urban on account of their location and/or their functions, while remaining outside the strict legal definition. This constraint binding statistical departments was overthrown as soon as apartheid came to an end in 1996. The political upheavals of that period generated a new administrative grid, and the definition of the city became a genuine subject of consideration. The question of urban sprawl, and the issue of the reintegration of fragments of territories formerly separate from an administrative viewpoint, gradually came to be envisaged. But only the 1996 census, and above all the 2001 census, offer a definition consistent with reality, a definition that was resolutely functional rather than legal.

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21 The *aires urbaines*, created by INSEE (*Institut national de la statistique et des études économiques*) for the purpose of describing more adequately the peri-urban extension of cities, are made up of an urban “*pôle*” (centre of attraction) of more than 5 000 inhabitants to which are aggregated in an iterative manner all the *communes* (municipalities) in which 40% of the working population commute to the *pôle* or to a secondary *pôle* attached to it in a previous stage. This definition, like all definitions of functional urban regions, is thus mainly based on outreach (extent of influence) and the intensity of home to work commuting.

22 The MSAs are made up of a centre (core) of at least 50 000 inhabitants. The peripheral areas or *outlying counties* are aggregated to the centre if they have 15% of their workforce commuting to the centre and if the density and the growth of the population are sufficiently high.

## 1996: Putting an end to the administrative subdivision of urban territories

The *Transitional Local Councils* (TLC), intended as temporary entities established in the transitional post-apartheid period (lasting 5 years), show the beginnings of a change in urban matters in South Africa. In the definition of these entities, the authorities for the first time took account of functional aspects of towns and cities, putting an end, with variable success, to the separations between the white city and the non-white *townships* or segments of bantustans. The vast majority of the newly-formed TLCs indeed combined a former white municipality and its black *township* or *townships* (GIRAUT & MAHARAJ, 2003). For instance, the King William's Town TLC (in Eastern Cape province) officially integrated black population zones formerly part of the bantustan Ciskei, such as Zwelitsha or Bisho. Very often, the population of the white city was smaller than that of the *townships*. However, despite the vast progress achieved, imperfections remained in the TLC delimitation process. In some instances, most often for political reasons, certain *townships*, despite having links with the city or town, were not integrated into the boundaries of the new entity.

The question of the reintegration of whole segments of bantustans into the TLC urban entities was complex on account of the very nature of these spaces, generally located relatively far from the white city, between 20 and 60 kilometres away (GIRAUT & MAHARAJ, 2003). In fact, certain parts and in some cases the whole of a given independent territory were able to develop a degree of autonomy by establishing their own activities, and even their own administrations. In addition, the border areas of the bantustans often possessed zones of informal population settlement, often rural in character, with low population densities (GRAAF, 1986), which did not really warrant their classification as urban areas. Consequently, very few TLCs integrated displaced urbanisation zones (for instance Mabopane and Temba to the north of Pretoria were not part of the *Metropolitan Local Council* (MLC) (figure 1), forming the *Transitional Regional Councils* (TRC) that were independent. The period

from 2001 saw attempts to correct these shortfalls in the delimitation of urban entities.

Thus in this post-apartheid transition period the issue of the recognition and reintegration of marginalised localities (that were virtually occulted via certain forms of official geography) became acute. It is known that official South African cartography ignored certain *places* set aside for African populations (STICKLER, 1990; HRC, 1992). While for the main *townships*, recognised as urban localities in the 1980s, their administrative integration occurred without difficulty at the end of the apartheid period, the same is not true for urban areas displaced beyond the boundaries of the former bantustans, where any integration into urban entities was dependent upon their being recognised as *urban agglomerations*. The reluctance, whether or not it was deliberate, to recognise these very specific *places* can still be seen in academic publications, otherwise very thorough and valuable.<sup>23</sup>

### The revolution of 2001: adopting a definition suited to reality

The work conducted by the statistical departments on the measurement of urban objects is certainly one of the most interesting innovations in the 2001 census. To understand the level at which the rural/urban distinction is set, it can be recalled that in the new administrative organisation (figure 1) the 65 536 census *enumeration areas* are positioned in accordance with the 15 966 *subplaces* (urban quarters or villages) which in turn belong to 2 674 *main places* aggregated into metropolitan area municipi-

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23 The dictionary of South African place-names in its most recent edition (RAPER, 2004) opens up widely to African toponymy, integrating numerous allonyms; it however continues to ignore part of what the HRC termed “the shadow South Africa” (1992) occulted in the official apartheid cartography: distant *townships*, *townships* or concentrations on the bantustan, peripheries, and squatter camps. Thus certain major urban areas do not appear, such as Ozizweni, Ezikhaweni, Esikhaweni, Kwa Msane, Wembezi, Ezakheni, Emondlo, all in KwaZuluNatal, or Kayaletu in ex-Ciskei, or again Ga Luka in ex-Bophuthatswana. And if Bushbuckridge is mentioned (a vast concentration of African population in a pocket of ex-Bantustans a few dozen kilometres from the employment poles of Kruger park and the provincial capital Nelspruit), it is always as the denomination of a small mountain range that gives its name to a village, Bosbokrand! As for Inanda (a very vast urban quarter that developed autonomously on the periphery of Durban in continuity with the *township* of KwaMashu) the locality appears as a mission post.



palities that are six in number, or into two levels outside the metropolitan areas: 231 basic municipalities and 25 *district management areas* (for the zones of semi-desert, without permanent occupants) headed by 47 *district council areas*. Finally, nine provinces cover this whole. In these new delimitations, the main drawback is that they are difficult to compare with those that preceded them because they have evolved, even if it is generally possible to aggregate *main places* according to *magisterial district* (354 in number), a division used throughout the 20<sup>th</sup> century for South African censuses.

The *Statistics South Africa* departments drew up a report (*Investigations into appropriate definitions of urban and rural areas for South Africa: discussion document*) which clearly sets out the issue of the measurement of urban objects, proposing a new method for the delineation of the different types of space. Thus peri-urban spaces, suburbs and spaces not hitherto considered as urban, were viewed as being functionally linked to the town or city and defined as urban. The spaces concerned were those previously excluded either by denying their existence (informal settlement zones around cities) or because they were zones belonging to the former bantustans. It should be noted that in this approach to the urban object, it is on the level of the baseline unit, the *enumeration area* (EA), or census area, that the distinction between rural and urban operates. Thus for the first time we have a morpho-functional definition of the city, far more satisfactory than all previously implemented definitions in South Africa. In addition, the statistical departments endeavoured to classify as urban those spaces that were effectively urban in 1996, but that had been defined as rural from the administrative viewpoint. Thus it is possible to compare the scale of urban growth between 1996 and 2001 using the same delimitations.

### Consideration of the South African urban object in other sources

Secondary sources available and partially used to compare and validate population figures are also very useful for their analysis of the urban object, all the more so because some, such as the *Urban Foundation*, have

broached the question of the South African city and its transformations directly, as a subject of study in itself. The numerous reports produced by the *Centre for Development and Enterprise* (1996) show the extent to which a new approach to the urban object and its definition constitute a challenge as early as the transition period, before the national statistics departments tackled the problem. Thus the functional aspects of the city were studied and taken into account far earlier than in the censuses.

## **The choice of a functional definition in the Dysturb database**

Given these different not very satisfactory “official” definitions of the town/city or the urban object, derived from the censuses, a definition was needed to enable the follow-up of urban growth in the long term. The main difficulty was that of recomposing coherent, functional urban units combining the white city and its *townships*. Despite the difficulty of choosing variable, non-constant criteria for delimitation of *urban agglomerations*, in particular in terms of comparisons of successive urban growth phases, this choice was essential on account of the South African historical context and realities. This is indeed the stance adopted by any historical database on urbanisation, whether those established by historians for Europe (DE VRIES, 1984; BAIROCH *et al.*, 1988), for France (INED urban database, PUMAIN, 1982), or worldwide (*Géopolis*, MORICONI-EBRARD, 1994).

It is essential to escape from administrative boundaries to identify geographical urban entities that are coherent and relevant, and that evolve over time both by the growth of their populations *in situ* and by spatial extension of the built-up areas. It is because the latter process is almost always one-way in time and space (progress outwards with the problem of the integration of already formed settlements which then change status, as do the inhabitants; no regression of built-up areas) that a “variable geography” outline is the only way to give meaning to the city defined as a geographical entity. In the case of South Africa and the spatial discontinuities that were imposed between the urban employment

core (the former centres of the “white cities”) and the workers' residential peripheries (the non-white *townships*), the concept of the *urban agglomeration* made up of a continuous built-up area needs to be extended to include the functional *urban agglomeration*. The issue is, as for the ZPIU (*Zones de peuplement industriel et urbain*) established in France in 1962, and as for the *aires urbaines* of 1996<sup>24</sup>, to take into account new forms of urbanisation incorporating commuting patterns, and hence the use of individual transport (cars) and collective transport (taxis, buses and so forth).

Thus the functional definition of the *urban agglomeration* implies an urban area made up of a main urban pole (the white city) and its periphery with which it is in immediate contact (towns with or without official recognition, black *townships*, economically linked to the urban pole) the main link being that of the commuting journey from home to workplace. The *black taxi* lines, an extremely well organised transport system, typify this link. This essential economic relationship between the centre and its peripheries was thus the main justification for the choices made to develop the spatio-temporal database for towns and cities proposed by Dysturb. The continuity of built-up zones is a criterion that was used above all in the case of the largest *urban agglomerations* (Johannesburg, Cape Town, Durban, Pretoria etc.) to include the white municipalities belonging to the *urban agglomeration* area, but the built-up area continuity criterion was not used for the *townships*, since by their very nature they were physically separated from the towns and cities by a wide buffer zones, and sometimes distant from the city (figure 11).

This gives scope for exploration of the dynamics of the city systems on different scales, and also for working more specifically on the dynamics of the peri-urban spaces which in South Africa entail particular features and constitute a challenge, with the practices of displaced urbanisation

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24 For details of the successive delimitations of urban areas in France, see two studies: GUEROIS M., PAULUS F., 2002 (<http://www.cybergeog.eu/docannexe/file/3491/212revu.pdf>) and BRUNET R., 1997, <http://www.mgm.fr/PUB/Mappemonde/M397/Brunet.pdf>.

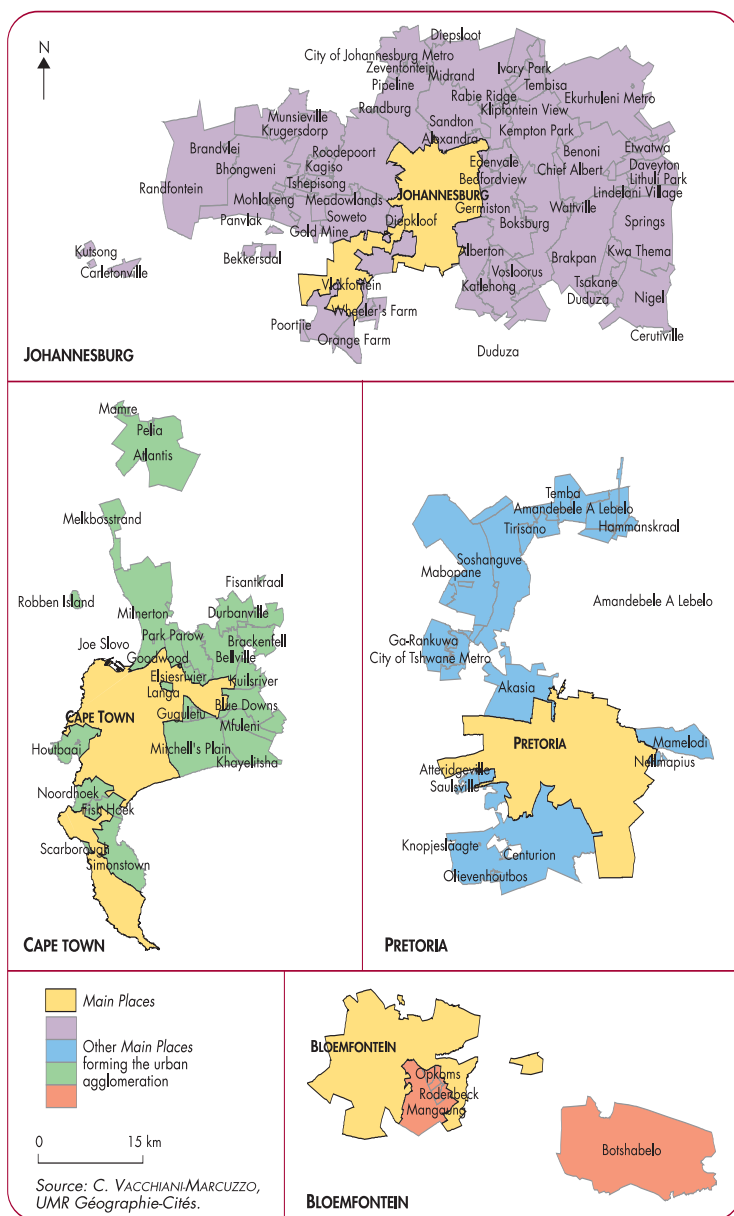


Figure 11 – Examples of delimitations of urban agglomerations following a functional definition.

inherited from the grand apartheid system. Finally, retrospective data on administrative status enable study of political and administrative urban functions within the urban dynamics at different periods.

Establishing the relevant associations between the white cities and the black *townships* is the only way, particularly from 1970, to obtain a coherent, functional urban area, even if, for the administrations of the time, these inhabited areas were not part of the white city<sup>25</sup> (figures 11 and 12).

The criteria used to form the database for the *urban agglomerations* are as follows:

- where possible, continuity of the built-up area between centre and periphery;
- aggregation of functionally linked spaces: joining of *townships* and centre (CBD + former white suburbs);
- minimum population threshold : 5 000 inhabitants.

A further difficulty concerns the way in which the bantustans are taken into account (TBVC<sup>26</sup>, Lebowa, KwaZulu, Gazankulu, Qwaqwa, Kwandebele and Kangwane) for the 1970 to 1991 period. For certain years, there are no data whatsoever (for instance Venda or Ciskei).<sup>27</sup> When the data was available, *agglomerations* of over 5 000 inhabitants were taken into account (on the basis of the threshold chosen). When data for certain dates were lacking, estimates were made on the basis of mean annual growth rates between the known dates. Few towns were in fact concerned, but it was considered to be more accurate to proceed in this way so as not to lose track of any town at a given date.

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25 For this purpose, one main source was used: *The Two South Africas, a people geography* (HRC, 1992). This was on the initiative of the Humans Rights Commission in 1990. It aimed to draw up new maps of South Africa, mainly maps of “shadow black South Africa,” i.e. of the black *townships* close to the white cities. This source distinguishes the white cities, defined as being previously reserved for the white population in the *Group Areas Act* (1950) and the “black towns” or *townships*, covering the zones reserved for the black, Indian and “coloured” populations. If previously the authorities completely ignored the functional associations of urban areas, in this report this characteristic was central in the definition of the town/city.

26 Transkei, Bophuthatswana, Venda, Ciskei.

27 These territories were enumerated separately in the censuses, since they were officially independent.

From the maps provided, also including road maps and aerial photographs, it was possible to reconstitute *urban agglomerations*<sup>28</sup>, although it was a lengthy, difficult task. The minimum hierarchical threshold of 5 000 inhabitants was applied once associations had been established between each former white town and its peripheral units. The boundaries thus formed vary over time and in the different censuses, since new quarters and *townships* appearing between censuses were integrated into the main towns.

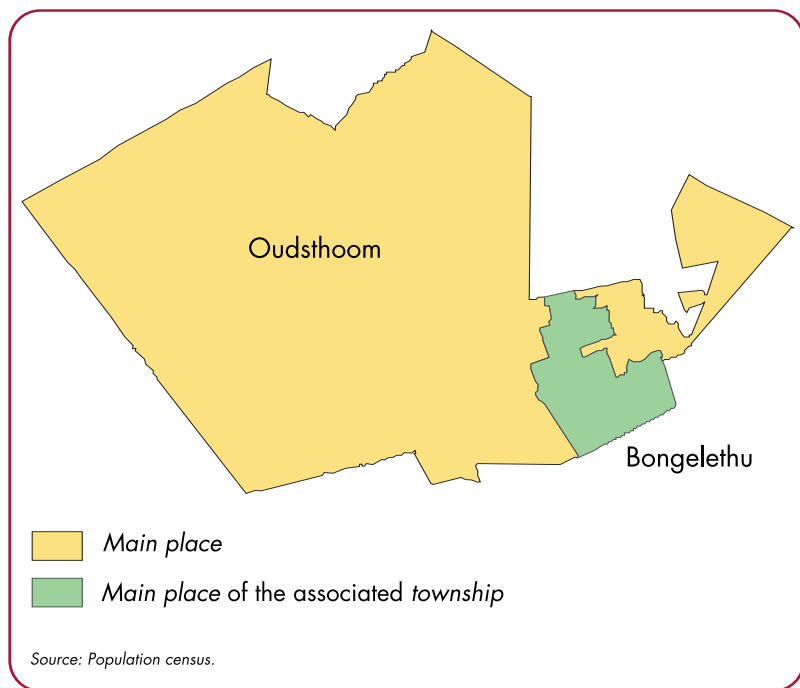


Figure 12 – Example of the association of territories on the scale of an urban agglomeration.

28 In *Géopolis* (1994) F. Moriconi-Ebrard made a start on reconstituting the *agglomerations* of more than 10 000 inhabitants from 1951 to 1991.

The database presented in Dysturb thus plots out the evolution of the population of the *urban agglomerations* of over 5 000 inhabitants from 1911 to 2001. The task of reconstituting the *agglomerations* and of checking data from one year to another did not highlight any major inconsistency in the long term. Certain anomalies did however require correction, for instance a *township* that could not be found at one date while it was present at the previous and later dates. To decide not to take it into account would have led to a very marked decrease in population for the town concerned, which would have been incorrect. The missing data thus led to the estimation of certain figures. In most cases estimates were made on the basis of mean annual growth rates between the two dates either side of the missing year. However, instances in which such estimates were required were very few, amounting to not more than ten cases. Another difficulty encountered was that of homonyms, in particular for the *place*-names of *townships*. So as to avoid mistakes in associating these names, and to ensure that the right *townships* was allocated to the corresponding white town, maps and GIS were used.<sup>29</sup>

Between 1911 and 1991, the work of reconstitution was relatively easy. To go further using the data for 1996, the database encountered a problem of correspondence between the former municipalities and the new TLCs. Although the definition of the TLC appeared to correspond to the definition that we had established for functional *agglomerations*, in all cases it proved necessary to go right down to the *place* names level so as to find the entities and reconstitute the *agglomerations*. In all, 60% of the results did in fact correspond to the figures given for the TLCs, but for the rest there was a discrepancy which was corrected, even if it only represented

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29 Cartographic material in *Arcinfo* format obtained in 1997 was extremely useful until the issue of the official 1996 census GIS, and then the establishment of *SA Explorer* by the *Municipal Demarcation Board*, and finally the GIS that accompanied the 2001 census. From one year to another, these systems improved and are today extremely powerful. It can however be noted that the CD-Rom *SA Explorer* is a completely new GIS system. The work conducted by the *Demarcation Board* and Michael Sutcliffe have provided a very versatile tool which takes the new 2001 municipal boundaries into account. The data is available on several geographical scales, from the wards (electoral districts) to the provinces, and including the previous TLCs and the new municipalities. A second edition, reviewed and adjusted, was issued in 2002.

a small difference in population. The last stage of the constitution of the database was the most delicate, since between 1996 and 2001 not only did the country change its territorial grid with the establishment of the new municipalities, but there was also a more difficult issue to be managed, arising from the new toponymy established for these same municipalities, so that any immediate correspondence between the *agglomerations* of 1996 and those of 2001 became impossible. To this were added the boundaries to these new administrative entities, which do not cover only the urban areas but also a considerable number of rural areas, creating an extra difficulty in establishing immediate correspondences. The solution adopted was to start from the *main places*, or even the *subplaces*, so as to return to the basic entities (towns/cities and *townships*). These different levels did not undergo changes in name (at least for the most part) so that they were easier to use. However several revisions of the data were conducted so as to complete the year 2001. Finally, at the initial date of 1911 the database has 25 *urban agglomerations*, in 1951 there are 89 and in 2001 there are 307 *urban agglomerations* of more than 5 000 inhabitants.

## Conclusion

In the course of one century of South African censuses the number of localities and districts increased considerably by way of creations and subdivisions. This reflects the growth and the spread of the population, an increase in densities, and the appearance of new settlement centres. Alongside this, the *urban agglomerations* developed by way of creations, demographic growth, morphological extension and incorporation of peripheral localities.

The follow-up of localities, territories and cities over time required correspondences to be established between the various spatial entities used in the successive censuses, and a re-composition of the *urban agglomerations* for each different period. Correspondences had also to be established across changes in name, status and boundaries of the different territorial units. This exhaustive work required for the diachronic processing of the census data



belongs to the fields of historical geography, political geography and also urban geography, which are the specialities of the developers of this database. Potential scientific developments are numerous, in particular in the field of historical demography and the study of modes of urbanisation. It is also a contribution to knowledge on the subject of the genesis and the evolution of every town and territory in South Africa, because it enables the different stages to be distinguished with the circumstances of their formation, whether morphological, functional or institutional. In this sense Dysturb is one of the as yet small family of geo-historical (spatio-temporal) national databases that provide follow-up and establish correspondences for *places*, districts, municipalities and provinces in the long term.

The development of Dysturb has already made it possible to detail and model the different modes and techniques of territorial and urban engineering that took *place* in the colonial, apartheid and post-apartheid periods. In terms of population census and the way in which *places* were managed, these periods were successively characterised by the systematic instatement of selective and segregationist principles, then by the recognition and incorporation of all locations of settlement. New developments are expected now that this database is available to researchers, and beyond them to territorial or urban development agents wishing to put their projects or actions in historical and spatial perspective.

Thus Dysturb is a dual challenge, scientific and operational. It enables changes in category to be set aside in order to follow the dynamics of settlement and urbanisation over one century, and at the same time it enables a better understanding of the discontinuities and changes that occurred in the designation and the definition of *place*. It opens the door towards a historical, geo-political approach to territory, populations and urban areas in South Africa, which have been subjected to territorial technologies for the purpose of control that were particularly refined. The scope for re-evaluation of the most dominated and the most concealed parts of the South African *urban agglomerations* and territories is not the least of the contributions of this database, providing material for more general consideration of the different forms of metropolisation and metropolitan fragmentation.

# Glossary

## Buffer zone

The different spaces generated by the apartheid policies, which were essential components of the city, were separated by buffer zones, which were empty spaces or zones occupied by communication channels and industrial estates; these buffer zones were boundaries and prevented any real direct contact; they were visible, real, social and ethnic discontinuities in the landscape. They separated the CBDs (*Central Business Districts*) and the white suburbs from the *townships* reserved for the non-white populations.

## District (census and magisterial)

The *census districts* form the regional grid (infra-provincial level) to which *places* are allocated, serving to compile census data from 1904 to 2001. The reference is the *magisterial district* (legal and administrative entity) the numbers and boundaries of which varied over the whole period, ranging from 206 in 1911 to 370 at the peak in 1991. The *census districts* sometimes preceded the official establishment of the *magisterial districts* by a few years. For the 1970 census, certain *magisterial districts* were subdivided into two districts for the purpose of “ethnic” enumerations. With the new subdivision into local government entities in 2000, the level of district *municipalities* was created immediately above the new basic municipalities, in non-metropolitan areas. The *magisterial districts* eventually found their *place* in the new municipal divisions.

## ‘Grand apartheid’

This was the general policy of the apartheid regime aiming to partially decolonise South Africa. Developed from the 1950s onwards, on the basis of the recommendations of the Tomlinson Report, the idea was to create “*homelands*” (known derisively as bantustans), set aside for the main Bantu ethnic groups as defined by the regime, for the purpose of granting them independence or annexing them to neighbouring countries that were economically dependent upon South Africa. To do this, the apartheid regime used the native reserves inherited from the colonial period, and decided to operate in constant surface areas (13%), at the same time “consolidating” the territorial entities by way of exchanges of territory, so as to obtain less discontinuous territories than those formed by the scatter of reserves; they were however always dependent and had no access to the main resources.

Compulsory resettlements of population, known as *forced removals*, accompanied the establishment of these *homelands*. Four out of ten of them reached a stage of pseudo political independence, but the policy, rejected by the large majority of the populations involved and by the international community, was a failure. The spatial impact of the ‘grand apartheid’ period was however considerable, in particular in the form of what is known as “displaced” urbanisation, developing beyond the boundaries of the bantustans but close to the South African *urban agglomerations* in the form of concentrations of poor populations in vast, not very dense, semi-rural *agglomerations* with inadequate services.

### Homeland or bantustan

The grand apartheid laws mainly aimed to physically separate populations in space, and as far as possible to prevent the black populations from living in the towns and cities. Thus black populations had to keep away from the urban poles which provided the jobs, and settle in the spaces that were set aside for them, i.e. in the *homelands* or bantustans formed on the basis of the Bantu reserves (see ‘grand apartheid’). This form of “house arrest” also involved losing South African nationality. It is these forced removals of population that generate “displaced urbanisation.” There was very considerable population growth *in situ* (migration and natural budget) on the fringes of the bantustans, as can be seen in the first (non-exhaustive) census conducted in the “displaced” *agglomerations*. These spaces constituted a real challenge when the time came to reintegrate them into the new system of subdivision of the territory, and in particular for the delimitation of urban areas.

### Municipality

This is the highest status in the hierarchy of local government institutions. In the colonial and apartheid periods, the status was restricted to white localities of a certain size, along with any of their *locations* derived from the colonial period. It is the status as a municipality, and local government status in general (which could vary from one province to another) that gave a locality its urban character in the censuses up to 1980. From then on, the main *townships* which were located outside the municipalities were taken into account as urban localities.

The post-apartheid regime quickly operated an extension of the boundaries of the former apartheid municipalities, in particular by inclusion of the main *townships* in the *Transitional Local Councils* that had been established by the

time of the 1996 census. A new exhaustive subdivision into municipalities and extended to two levels (one for the metropolitan areas) was set up in 2000 by the *Municipal Demarcation Board*. Since then, in South Africa the term municipality refers to one of these two levels: basic municipalities (231) or district municipalities (47). For the metropolitan areas (6), it refers to the single institutions in charge of their management.

## Place

Here this term refers to any census locality. Census localities, which were for a long period subjected to the requirement of local government status, either effective or pending (*settlements* and *suburbs*), were extended to all human settlements from 1990.

## Place-name

Also referred to as toponyms, *place* names can refer to a locality or a territory. South African *place*-names in some cases changed in form or in meaning, first under the influence of cultural rivalries between Afrikaners and British, and later in the process of recognition of African toponyms, or as anti-colonial stances or a return to pre-colonial names.

## Settlement

This generic term refers to localities that are characterised by a certain population concentration, while they do not have any marked or official urban identity. At the start of the 20<sup>th</sup> century (up to the 1921 census) these *settlements* were villages, hamlets, suburbs, missions, or mining compounds that the censuses individualised pending their promotion to urban status as seats of local government. In the database they are treated as census localities in their own right. The term “settlement” is also used to refer to human settlements (or occupation), and population concentrations connected with urbanisation but separated from the physical, official *urban agglomerations* by the boundaries of the former bantustans. These *settlements* only appear in the official South African censuses from 1996 with the end of apartheid. Previous to that they were amalgamated with the rural areas (except in 1991 for 3 pseudo-independent *homelands*, Bophuthatswana, Venda, Transkei).

## Subplace

In the 2001 census this term refers to sub-localities making up the second level of *places* (*main places*).

## Township

This word was first of all used in its generic colonial settlement acceptation of a locality created and developed by a colony of settlers. From the 1950s, with the growth of urbanisation and the apartheid policy which rendered segregationist policies systematic, the term came to be applied to the new urban quarters set aside for the non-European population. Unlike the *locations* that went before, they were mainly dormitory-suburbs separated from the rest of the town or city by *buffer zones*. They were made up of small detached or semi-detached houses (“match-boxes”) with rudimentary comfort and sanitation and no services. They were widespread around large cities and small towns alike, and the *townships* left a mark on the urban landscape at all levels of the hierarchy. Inside or on the edges of the *townships* there were also the *hostels*, which were collective housing facilities intended for the male, single workforce moving to the towns and cities to find work.

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