

BOGOTA – URBAN EXPANSION SOCIAL SEGREGATION AND LAND DEGRADATION

MIROŚŁAWA CZERNY

University of Warsaw, Faculty of Geography and Regional Studies
00-927 Warszawa, Krakowskie Przedmieście 30, Poland
e-mail: mczerny@uw.edu.pl

ANDRZEJ CZERNY

Maria Curie-Skłodowska University
20-031 Lublin, Pl. M. Curie-Skłodowska 5, Poland
e-mail: aczerny@poczta.umcs.lublin.pl

ABSTRACT: Colombia's capital city Bogota was founded in 1538 by Gonzalo Jiménez de Quesada, a Spanish *Conquistador* who came down from the north to reach the *Sabana de Bogotá*, i.e. the intermountain plateau (and "Savannah") around Bogota. The whole region was already well-developed by then, and inhabited by the *Muisca* people. Their settlements were dispersed across the plateau, though only rarely did these encompass flat areas suitable for crop-growing. Today's Bogota is the largest metropolitan area in the country, with more than 8 million residents currently, and occupying a considerable part of the extensive high plateau. Processes which have resulted in Bogota's present spatial form and its – in some ways – unique functional and spatial structure, are manifold, and highly complex. They include environmental, political, social and economic factors. Nevertheless, among all of these cause-and-effect processes, institutionalized segregation (called *estratificación* in Colombia) is the reason why rigid spatial structures are maintained, while the spontaneous and uncontrolled movement of groups of people within the city and from one social class to another is restricted.

KEY WORDS: social and spatial urban segregation, environmental problems, Bogota, urban expansion.

SOCIO-SPATIAL SEGREGATION IN LATIN AMERICAN CITIES

Social segregation within urban space is one of the most characteristic phenomena that shape the urbanization, structural features and landscape of a city. Urban segregation – its origins, forms and effects on the formation of spatial development models – has been the topic of urban geography studies for decades (Taeuber, Taeuber 1965, Duncan, Duncan 1955, Wilhelmy, Borsdorf 1984, and others). Research initiated in the first half of the twentieth century, and pursued extensively after World War II, focused mainly on North American cities and the processes by which inner city ghettos, inhabited by Afro-Americans and Latinos, come into being. In those days, numerous works appeared, focusing on the spread of segregation and on the effects of this process, not only on the urban structure, but also, above all, on social relations within the urban space.

Spatial segregation is, therefore, a phenomenon reflecting the social segregation that exists in a given country or city. Social segregation may pertain to any and all social traits that vary between people, depending on the region and its culture. There is a lack of uniform social structure to characterize all the countries of the Global South. Income inequality is only one reason for spatial segregation, and is often associated with other types of social divisions, such as unequal access to the labor market or education (Ratcliffe 2002: 23, 20–33, Robinson 2002: 96). However, as Smets and Salman (2008) stress, citing previous works, spatial segregation is, to a great extent, dependent on how prosperous a country is, on the overall standard of living of its inhabitants (Musterd, Ostendorf 1998), and on the level of development of a multicultural civil society (Koopmans *et al.* 2010). Furthermore, the socio-economic effect of globalization goes hand in hand with the expanding social mosaic characteristic of the cities and their residents, and which inner-city inequalities make visible (Czerny, Czerny 2014).

One of the research concepts applied most frequently in accounting for the phenomenon of socio-spatial segregation is the theory of spatial assimilation. This brings ecological models together with elements of sociological analysis concerning the prospects for an individual to achieve a defined status in society (Massey and Blakeslee 1983, Massey and Mullan 1984). In line with the assumption proceeded on by the authors referred to, the consequence of the achievement of a certain improvement in quality of life, as well as higher social status in a given area (e.g. city district), is the creation of common, integrated residential spaces for which ever social class predominates in that place. The perception of individuals held by other groups in society, as well as chances on the market, are left very much dependent on place of residence. Where the social status attached to this rises, lower social classes seek to draw benefit from this improvement in their material situation by improving their spatial location (in this case within a given city's space), and this also denotes a need to assimilate with members of a socio-economic grouping enjoying a more lofty position from the status point of view.

While it is true that this theory propounded by Douglas S. Massey is based on studies of ethnic minorities in the cities of North America, it also proves useful in accounting

for the socio-spatial processes ongoing in Bogota – all the more so when it is assumed that the spatial distribution of immigrants there reflects the level of human capital, as well as social mobility (Massey and Mullan 1984, Massey and Denton 1985). Social mobility is not just a key component of the assimilation process, being in itself capable of influencing (further) social mobility. It represents an important element of social mobility for this reason (Massey and Mullan 1984: 838). The authors cited claim that “blacks” remain socially and spatially isolated within American society. But can one not say the same about the poor inhabitants of peripheral quarters of Latin American cities, where the share accounted for by the poverty-stricken sector is far greater, in terms of both society and space?

Examples reflecting this include waves of migration, the practice of social exclusion and the bipolarity of the labor market. The effects are visible not only in the vast differences in wealth among city residents, but also in their capacity to improve their material situation, closely linked to the assets in property and accumulated resources that individual households possess. The coping strategies of individuals and groups vary in times of crisis, when relocation might be necessary or resources may have become scarce. One basic strategy adopted by more disadvantaged groups is spatial mobility (emigration) – departure from one’s place of origin to take up residence in another region, most often in a city. This is a phenomenon that contributes to disintegration of the social network normally supporting individuals and families in their pursuits. Here again, mention can be made of the study by Oscar Lewis concerning San Juan de Puerto Rico (1966), which illustrated the workings of the mechanism described above. People relocated to public housing felt lost and alone. Ultimately, they ended up returning to the shantytown, where they felt they were members of a community, able to draw strength from their sense of belonging, which they needed in order to overcome adversity in daily life. Unequal access to municipal services and infrastructure is an additional phenomenon that accentuates spatial segregation, and pains urban communities in their daily life. It also makes it difficult for residents from the poor districts to integrate with the rest of the urban community. At the level of society, inequality concerns, not only social and political stability, but also levels of productivity and poverty (UN-Habitat 2004: 2).

In the 1960s, the first studies dealing with socio-spatial segregation of Latin American cities began to appear. These are mainly analyses of the processes by which shantytowns come into being in Peru and Brazil. (Wilhelmy, Borsdorf 1984). Other studies followed, examining the spatial arrangement of poor and wealthy neighborhoods. It was in the 1970s that first models of the Latin American cities appeared (developed by Bähr, Borsdorf, Gormsen and others).

Geographical research focusing on the edges of great cities in Latin America today is mainly concerned with residents’ livelihoods, and ways in which those living in poor, marginal neighborhoods can obtain access to essential services including fresh water, plumbing and garbage removal. While these studies illustrate the problems occurring in these areas well, through them researchers have come no closer to forming a new

paradigm for the development of the great cities of the Global South. Other studies that have appeared present the edges of large cities as a diverse mosaic of “natural” ecosystems, “agro” systems for the production of food, and “urban” systems (Allen 2003). Such an illustration of the urban periphery in Latin America corresponds well with reality. Here it is possible to observe structural diversity among the small agricultural farms, the remnants of large haciendas parceled into smaller lots for construction, informal settlements composed of makeshift shacks built by migrants newly-arrived from rural areas, housing communities of the upper and middle class, industrial plants and warehouses (Allen 2003, Friedmann 2006, Tacoli 2003). As a result of the expansion of urban land use into rural and agricultural areas, a varied spatio-functional structure, which Dupont (2007) calls “mixed space,” comes into being: new socio-cultural forms are created through the layering of waves of migration by the rich and poor, under complex conditions of diversity and segmentation, leading to new forms of segregation, polarization and fragmentation.

In the article presented here, the authors accept that the process of spatial assimilation is strong, and this is attested to by data on the divisions in the social strata as formally introduced. They also claim that this phenomenon is inclined to be self-perpetuating and persistent. To gain some confirmation of this, a statistical analysis has been carried out in regard to the share of the city space accounted for by different social strata over the last 20 years, i.e. for the time that the system under study has been in place. Comparisons are also made as regards the ranges of the different strata in different periods, with this analysis then combining with the processing of satellite imagery into maps to allow for the updating of the spatial depiction, as well as the drawing of conclusions regarding trends for the expansion of the built-up urban area.

This is a reflection of the way in which this article associates socio-spatial segregation with the issue of the built-up area’s encroachment on to land that on paper enjoy legal protection, but is in practice witnessing the expansion of housing construction – on both legal and illegal bases – as a result of the activities of different pressure groups. Barriers to mobility are thus inherent to the deep socio-ethnic divisions that seem to go on irrevocably assigning certain locations in urban space to particular social strata.

DEVELOPMENT OF SETTLEMENTS IN THE AREA OF BOGOTA

Colombia’s capital city Bogota was founded in 1538 by Gonzalo Jiménez de Quesada, a Spanish *Conquistador* who came down from the north to reach the *Sabana de Bogotá*, i.e. the intermountain plateau (and “Savannah”) around Bogota. The whole region was already well-developed by then, and inhabited by the *Muisca* people. Their settlements were dispersed across the plateau, though only rarely did these encompass flat areas suitable for crop-growing. Similar activity was engaged in by Jiménez de Quesada, who founded a Spanish settlement at the foot of the Eastern Cordillera of the Andes. The city is at an altitude of 2640 m a.s.l., while the surrounding mountain chains rise to 4050 m. At the time the Spanish arrived, a large part of the plateau was occupied

by shallow lakes and swamps, while the slopes of the Andes were forest-covered, with this giving way to the high-altitude Sumapaz *paramo*.

The former inhabitants of these lands did not settle the more elevated parts of the mountains to the east of the *Sabana de Bogotá*. However, they did terrace the less-steep lower slopes for the purposes of crop-growing. The mountain peaks all around the plateau were afforded cult status by the native peoples, with homage being paid to both the Sun and water. The cosmology of the *Muisca* deals *i.a.* with the relationship between human beings and the high East Andes (Bohórquez-Alfonso 2008). In turn, in the first years of Spanish colonisation, the eastern chain of mountains was treated as a defensive barrier for the city.

Nevertheless, it was not long before the exploitation of forest timber for construction purposes began, as associated with a development of settlement by indigenous people on the mountain slopes. This phenomenon gave rise to a slow but steady process of deforestation of the Cordillera. Intensive development of the city with new manufacturing plants also being located here then put paid to any discussion there might have been regarding care for the forest. Thus by the 20th century, the forest cover of the west side of the Cerros Orientales range had disappeared almost entirely, with its place taken by grassland and scrub.

In the colonial period, at the foot of those same mountains and on their lower slopes there grew up a Spanish town. The location on gentle slopes between the Rivers San Francisco and San Agustín was a very favourable one, being on the edge of an extensive agricultural region, as well as at the bottom of mountains able to provide wood for fuel and as a building material. In the late 19th century, areas on the heights surrounding Bogota to its east and south-east played host to extensive landed estates or haciendas, including La Merced, El Arzobispo – Parque Nacional, Chapinero, Chicó, Santa Ana, Santa Bárbara and Contador y La Calera. However, by the early 20th century this part of the city had already seen the first emergence of a more-permanent working-class district, and in consequence the onset of deforestation processes. Some parts of the remaining forest began to be brought under protection in the 1950s, but felling became ever more intensive in the 1960s. Mudslides and landslides that began to threaten inhabitants during periods of very heavy rain ensured that a start was made to a reforestation effort on the slopes of the Andes. However, the species used were alien to the region. Further into the 1960s, both the central and northern parts of the city also began to witness ever more severe encroachment on to the slopes, albeit by housing complexes designed for the capital city's wealthiest inhabitants. Members of the highest social strata were seeking security by "escaping" from the city on to the mountain slopes, where they might isolate themselves more effectively from what they deemed their social inferiors. They were to be assisted in the achievement of this goal by both the topography and the lack of any city transport – the districts inhabited by the wealthiest residents of Bogota could not be reached by any bus lines.

In contrast, in the south, poor quarters of the city took in more and more new land, in so doing repulsing farming activity beyond the southern margins of the *Sabana de Bogotá*.

In their majority, these were illegal settlements founded by people forced out of their villages by political conflict whose origins stretched back even to the 1940s, and which has come to be known in the subject literature as the *violencia*.

In the second half of the 20th century the authorities of the Colombian capital began to enforce an Act which prohibited further exploitation of timber in the Cerros Orientales region. Furthermore, a programme to replant forest in the mountains got underway, while nature protection zones were introduced, especially on forest land at altitudes above 2500 m a.s.l. (Mendoza *et al.* 1997). Paradoxically, the onset of a more active approach to nature conservation coincided with an era in which intensive expansion of urban construction on to the mountain slopes began, most especially with the housing needs of the middle and upper-middle classes borne in mind. The 1920s in turn saw a start made to quarrying for stone and gravel on the slopes. The areas around the quarries and excavated areas began to house incomers from rural areas who had come to Bogota in search of work. From the 1940s, they had been joined by people actively fleeing from rural areas, as the first victims of the so-called *violencia* – effectively a civil war in Colombia that has not ended even now. Most of the mines closed down in the mid-20th century, though the land around them was parcelled off and sold as building plots.

SEGREGATION IN BOGOTA

The factors involved in the formation of a city that is divided and segregated are either regulatory, achieved through the decisions made by city authorities, or spontaneous, specific to each community, where pre-existing relationships are often transferred from the previous place of residence and result in the division of cities into neighborhoods, the composition of which is based on ethnicity or region of origin. Thus, the process of segregation goes hand in hand with the process of integration. The fact that city residents live together in specific groups in a specified area is none other than the effect of social integration. While social integration is an important element shaping the internal structure of the city, the matter of where an immigrant lives will have a serious impact on his or her (and the family's) chance for success in life. According to the *spatial assimilation theory*, social mobility of the group or individual within urban space increases the chance that social status and living conditions for immigrants to the city will improve (Alba and Logan 1991, 1993). Mobility of the newly-arrived within urban space brings good results if there is a possibility of economic inequality and differences in cultural capital between immigrants, and usually better-off long-time residents being eliminated. However, the degree of spatial integration is not only dependent on individual ability and socio-economic status, as the proponents of the *spatial assimilation theory* claim (Zoua Vang 2010). A family's ability to secure the means to live, accompanied by a gradual increase in income, making better housing

options and access to education possible – i.e. the usual course of affairs in Bogota and other South American cities – does not guarantee access to “better” housing areas, or freedom to choose the place in which one resides (Freeman 2002).

The dynamic demographic processes, particularly the steady stream of immigrants from rural areas and those expelled from areas where guerilla warfare continues combines with the fact that Bogota is located in the High Andes (a specific natural environment), where residential areas reach up onto the steep slopes of Cordillera Oriental to exert a clear influence on the spatial appearance of this region’s population. In addition, division of the city into zones in which municipal services are available to varying extents (as the subject of a special program introduced by the Colombian government), the nature of the labor market, the size of the metropolitan area, and the limited housing resources all serve to exacerbate the process of socio-spatial segregation. Many authors have shown that the natural environment plays a significant role in shaping the process of social segregation. In their book dealing with the spatial situation of African American neighborhoods within the urban space of North American cities, Taeuber and Taeuber (1965) were the first to call attention to this fact.

The influx of immigrants and the rapidly intensifying processes of settlement and urbanization in new areas of the city is not devoid of constant tension and conflict, which stems from differing notions of how the land is to be taken over, developed and managed. Conflicts may be violent in nature, sometimes even involving armed struggle. It is never just one factor that leads to conflict and violence in cities; it is a variety of factors. These include negative socio-economic conditions, spatial segregation, social exclusion, and a weak central government, to name but a few. At the same time, the continuous process of the expansion of the built-up area and the influx of new immigrants only make the situation worse.

Bogota is Colombia’s largest urban center, and currently has about 8 million residents. The rapid increase in the city’s population and area (around the periphery) over the last two decades has been caused by an influx of immigrants driven forcibly out of the rural areas they once inhabited.

Relations existing between the city and countryside since the 1940s are the main force shaping the process of urbanization in Colombia. Accelerating population growth has been noted in all of Colombia’s cities, and most of all its largest urban centers, including the capital, Bogota. Figure 1 shows the urban expansion of Bogota in the last 25 years.

Rural areas supply cities with new immigrants constantly. The most significant reasons for the rural population’s exodus into the cities in the last half-century include:

- lack of agricultural reform;
- unresolved land-ownership issues;
- the expulsion of farmers from land they had taken over and adapted for agriculture;
- the criminal activity of paramilitary groups, drug lords, and armed gangs supported by rich landlords.

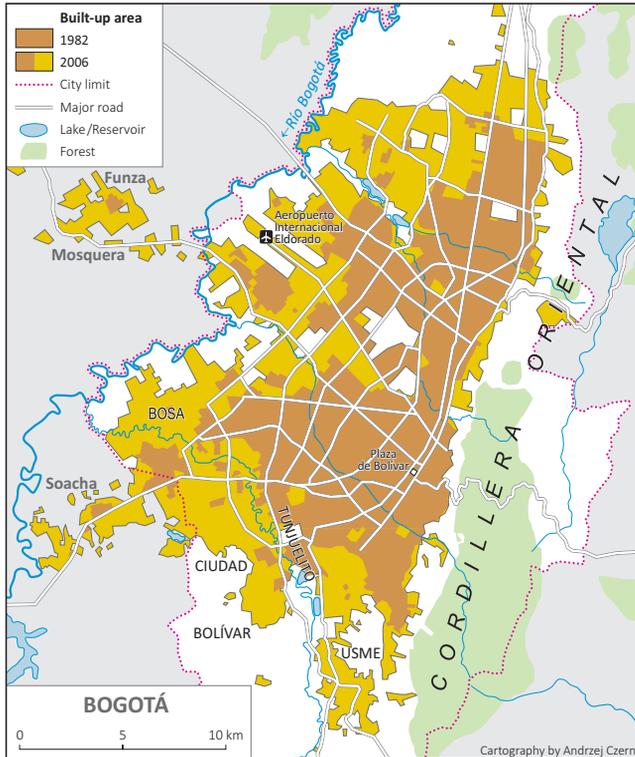


Figure 1. Bogota. Urban expansion

The consequences of these processes for the development of Bogota are:

- increased population;
- land takeover by invasion or the founding of informal housing districts;
- social marginalization and enhanced informal spatial and economic processes in urban areas;
- the populating of entire districts and cities by refugees and people in hiding.

In the case of Bogota, the intense urban expansion into the peripheral areas that has taken place over the past 30 years, planned only in part and hence insufficiently, has led to the breakdown of the mono-centric city structure so characteristic of Colonial and post-Colonial cities prior to the second part of the twentieth century. Uncontrolled urban growth, coupled with an underdeveloped public transportation system, and the appearance of various shopping centers targeting residents in suburban neighborhoods are the main causes of the fragmentation and segregation of urban space. Because of decentralization and deconcentration, the city center has lost some of its significance and prestigious function, a factor that in turn has contributed to a slowdown on the real estate market and a loss of property values. Efforts on the part of the city authorities to reintegrate the center with remaining areas, and to restore it to its former glory, have led to large-scale road construction and other transportation development projects that encompass the entire

historical city center. A ring of government buildings and business establishments now surrounds the old city center. This is also where most of the institutions of higher learning in Bogota have their main offices. Thanks to this process, the center as originally defined is much “expanded” or “spread” (*centro expandido*), as is confirmed in the *Plan de Ordenamiento Territorial* (POT) for the years 2000–2010 (Czerny 2011a).

The consequences of the existence of neglected areas (*deprimidas*) marginal to the process of urban growth and development, are generally negative. Nevertheless, and without a doubt from the point of view of residents, illegal urban development was the only rational solution (Vernez 1974) to critical problems with housing and jobs that arose out of the accelerated urbanization process taking place in the second half of the twentieth century. A life in one of the illegally urbanized areas (*barrios piratas* in particular) became the only means of survival for numerous immigrant families unable to find legitimate housing and employment options in the city. Public aid programs were extremely limited at the time, with both the cost and type of housing poorly suited to families accustomed to life in the countryside. In 1970, at a time that of critical importance for the urbanization process, only 10.7% of needy families were able to secure housing through government programs, while 46.4% opted for illegally-built housing, which allowed them to tailor their living quarters to their needs and financial abilities (Valenzuela, Vernez 1974) – Figure 2.

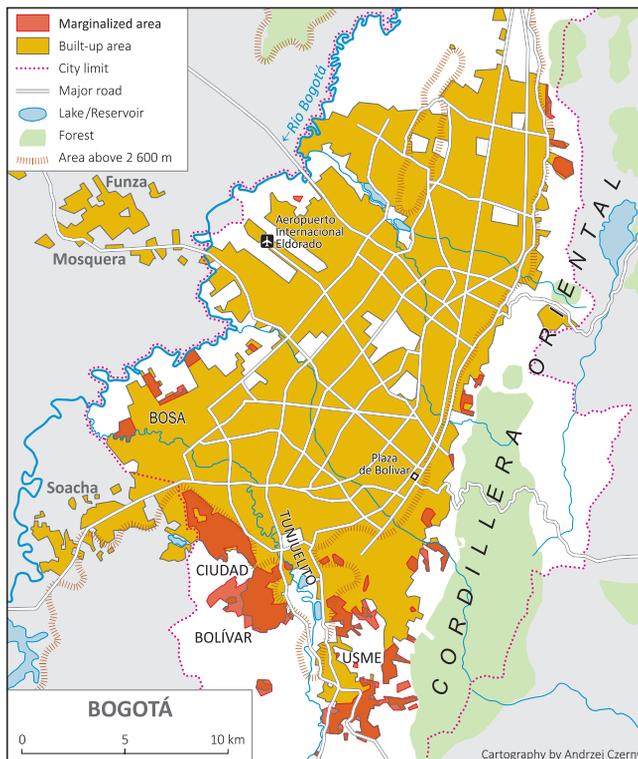


Figure 2. Bogota. Marginalized areas

City governments can try to remedy this situation. Thus far, government action has entailed:

- legalization of the settlement process;
- the development of infrastructure – mainly electricity and public roads;
- action on the part of NGOs to better public health and education.

In Bogota, as in any major South American city, we find the characteristic, highly pronounced differentiation of urban space with regard to quality, urban landscape features and living conditions. The existing deep socio-spatial divisions stem from many causes – linked to political, social, economic and urban-planning questions. It is assumed that primarily political issues underpin Bogota's varied current levels of spatial development. While other factors of course play important roles in the process, it is the history of city (and country), political decisions meant to improve city management, as well as specific aspects of spatial order, that have reinforced (and continue to influence) the divisions existing within the city (Czerny 2011).

In the 1990s, with a view to living conditions being improved, the authorities divided Bogota's urban space into units corresponding to inhabitants' social status. This division was described as stratification, and location within the city space thus became an indicator of the affluence and living standards of individual social classes or layers (*estratos*). See Figure 3.

At least as provided for in the relevant legislation, this measure was not intended to lead to social-spatial discrimination, but rather to assign payments for municipal services in relation to membership of particular social groups. This stratification implemented by means of legislation thus had as its main aim the creation of a basis for varying the size of charges for the use of basic media: electricity, water, sewage (if available), and telephone. The policy of stratification introduced in the 1980s categorizes housing according to its size, building materials used, access to city infrastructure, quality of neighborhoods, number of rooms per family member, and average income per family member. Under this policy, housing standard and location is taken to determine membership in a specific social class, which in turn indicates the ability to pay monthly fees for infrastructure and media usage (Uribe Mallarino *et al.* 2006).

The proposed legislation therefore divided the city's inhabitants into 6 different layers, on the basis of which charges could be differentiated, taking into account the specific tariffs for: electricity, water, gas, landline telephone, rubbish collection, and sewerage. Next, specific rates for the above-mentioned services were determined, and it was decided that the true charges based on the actual level of usage would be paid by layer 4. The amounts paid by the other layers differ from the actual use of a given utility. Thus, charges incurred by the first three layers – 1, 2 and 3 – are subsidized partly by the city authorities and partly through increased payments made by (the wealthiest) layers 5 and 6. The principle is as follows: the average value of the actual costs of the abovementioned utilities incurred by layer 4 is taken as the base figure from which subsidies are calculated for layers 1, 2 and 3 and additional charges incurred by layers 5

and 6. Group 1 receives a subsidy amounting to 50% of this figure; layer 2 – 40%, and layer 3 – 15%; layers 5 and 6 pay an additional charge of 20% on the layer-4 average. Income obtained from the additional charges paid by layers 5 and 6 increases the fund from which the three poorest layers are subsidized. The remainder of the subsidies come from municipal funds, in the case of Bogota from the Administration's Distrital Fund.

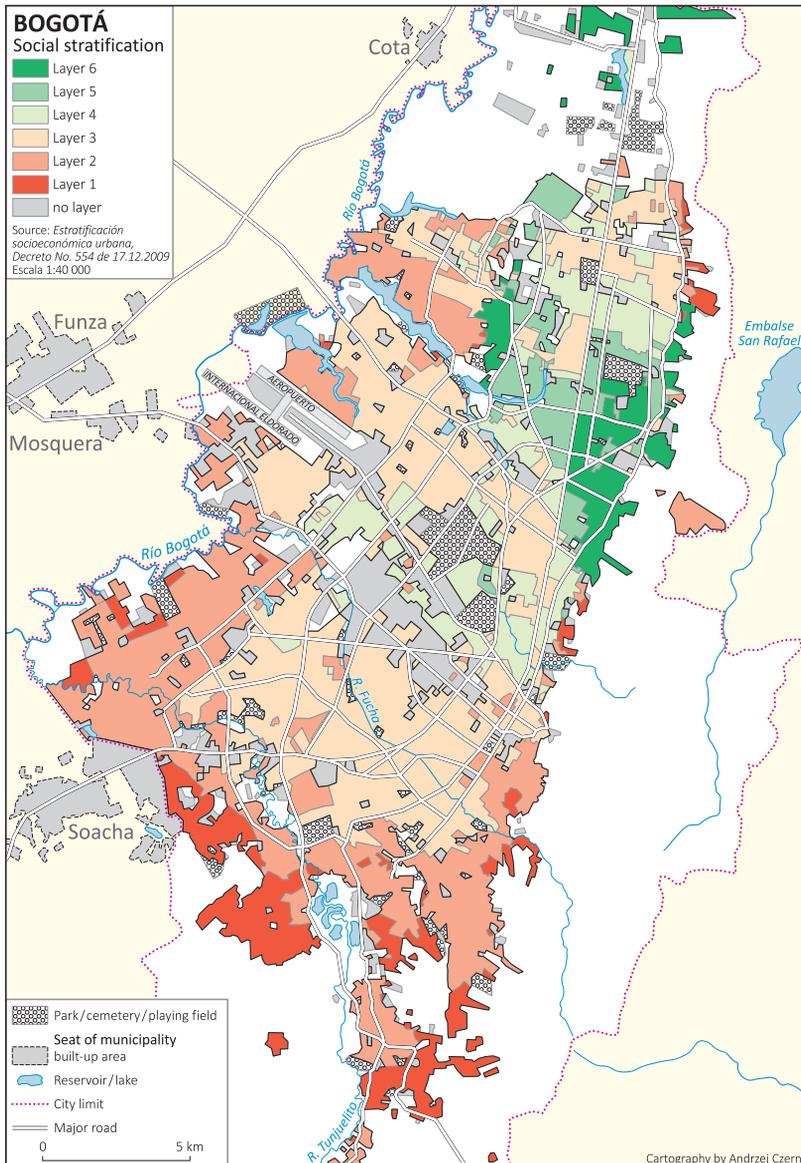


Figure 3. Bogota. Social stratification

The most important result of this stratification is spatial fragmentation and division of urban areas. The rich are in the North and the poor in the South. But both rich and poor more often locate their homes on mountain slopes. The rich look for security, and the poor for cheap land not yet seized for development. In this way, the destruction of vegetation is promoted, as are processes leading to landslides and mudslides.

LAND-USE AND ENVIRONMENTAL PROBLEMS OF BOGOTA DUE TO URBAN EXPANSION

In the work of contemporary authors (Bohórquez-Alfonso 2008), analysis of changes in land-use on the slopes and crests of the East Andes is related to what the people of Bogota call the Cerros Orientales. The issues raised most often in discussion concern the eastern margins of Bogota, and the urban sprawl taking place there, as well as the consequences this has for the natural environment, and ultimately also public policy (Bohórquez-Alfonso 2008) – as this is addressed to land of particular vulnerability where ecosystem quality is concerned, and readily subject to negative anthropogenic influences. The further aspect being added to this is the expansion of urban fabric of varying quality, especially in the *Bosque Calderón I* and *II* housing estates, as well as the Pardo Rubio and San Martín de Porres neighbourhoods in Chapinero, La Cita and Soratama in Usaquén and La Gloria Suroriental in San Cristóbal. In all of these places, new settlements have come into being on plots designated for residential construction (*ibid.*). These were the first settlements to be developed in the Cerros Orientales proper, and their presence served as an encouragement to other inhabitants, and to agencies trading in land who provided for ever-bolder development of the areas in question.

The first complexes of housing to appear on the slopes of the East Andes only encouraged further expansion into these areas, even though they had partly come under protection. A mixed form of land-use saw urban plots develop side-by-side with rural ones featuring small areas under cultivation, as well as summer residences. Together these started to be seen as sources of destruction in the natural environment. Meanwhile the agencies began to treat some of these areas (especially the ones less desirable for the building of luxury homes, given the presence of steep slopes from which forest had already been lost) as areas in which the sector of “informal construction” might be expanded. The firms in question saw an opportunity to “make a fast buck” by offering plots for sale in areas that are vulnerable from the environmental point of view and difficult and costly to invest in where infrastructure is concerned (hence a continued lack of even basic infrastructure in many such areas). In this way a division of city space into wealthier and poorer districts that had existed since the colonial era became yet further entrenched. In the first place the activity of the firms in question ensured that districts inhabited by the poor extended to higher elevations beyond the city-centre area. The occupation of the mountain slopes for construction also redefined the limits of the city, though it disrupted the natural landscape in this zone and also came to pose

a threat to the residents themselves. It has become ever-more common for downpours to give rise to mudslides down slopes cleared of their vegetation – these being quite capable of destroying settlements and cutting short the lives of their inhabitants. Above *Paseo Bolívar* there were by the end of the 20th century some 18 districts on the slopes of the Cordillera serving the lower orders in society and frequently lacking in even the most basic infrastructure (CIFA 1999).

Delimitation of the area known as the Cerros Orientales is to be found in a 2014 document published by the *Secretaría Distrital de Medio Ambiente* (SMA 2014). In line with this, the northern limit is in Torca, the southernmost in Boquerón de Chipaque. Numerous rivers begin their courses in this area, before flowing across the mid-Andean plain known as the *Sabana de Bogotá*. This ecosystem is at altitudes between 1575 and 3575 m a.s.l. The said land enjoying protection is entirely located within the city limits of Bogota, construed as *Distrito Capital*. The management of the protected area (specifically a *Reserva Forestal*) is a matter for the regional body called the *Corporación Autónoma Regional de Cundinamarca*. 63.2% of the area retains natural vegetation in the form of forests, scrub and páramo communities. 2005 saw the "legalisation" of building on some 973 ha within the zone (*ibid.*), even though the law prohibits the construction of new homes here. At the same time, a permit was issued to allow illegal districts of poor people to remain in the protected area, providing that they comply with legal provisions as regards the protection of the environment. Both the city authorities and organisations representing the inhabitants of these illegal districts are signatories to documents known collectively as the *Pactos de Borde*, by virtue of which residents can more easily organise to improve quality of life in their district, manage land in a proper and effective manner, protect the protected area, resolve conflicts and have recognised the rights they enjoy, as well as the obligations they are bound by.

By 1977, Bogota was already a metropolis of 3.5 million inhabitants covering an area of almost 31 000 ha. However, the 1980s brought very dynamic growth of the areas settled by new immigrants flooding into the city from regions afflicted by civil war and subject to acts of violence perpetrated against country-dwellers. Extensive shanty towns of rude shacks and non-completed homes of a more permanent nature thus came into existence in Ciudad Bolívar, Bosa, Soacha and Suba (all in the southern and south-eastern parts of the capital city). The increase in population and ever-more extensive sprawl of the built-up area was associated with the appearance of community organisations and local initiatives among the inhabitants, with these demanding that the authorities act to improve living conditions, first and foremost by further developing city infrastructure to take in the new residential districts (Torres 1999: 14). It was from this time in the city's history onwards that it began to become clear how the districts inhabited by the poor, and mainly by incomers from rural areas, were being "shoved" towards the peripheries of the capital city – in a particular direction (in this case southwards), with developers enjoying the backing of the finance sector making every effort to ensure that these people would not encroach upon districts already identified with the middle and upper-middle classes. In this, they were not always successful.

The above-mentioned processes of the “division” of urban space between different social classes shaped the spatial structure of Bogota, and led to change in the function of the city centre, from industrial and worker-dominated to financial and services-related. Where people on lower income levels were concerned, the residential function began to develop mainly in a southward direction from the centre. Now, the residents in poor districts shape the material and symbolic space of their surroundings in a situation of spatial segregation that arises out of the socio-economic disparities present in the urban society (Plazas Neisa and González Rodríguez 2010).

The process of more-distinct socio-spatial segregation in fact began to take hold in the 1970s, *inter alia* thanks to action taken by the city authorities to prevent the lower orders in society from making a free choice of where they would locate. This in turn reflected the emergence of strong groups of investors in the residential construction sector, whose aim was to develop the market targeted at the middle and upper-middle classes; as well as the appearance of social movements seeking to ensure that the demand for cheap dwellings exerted by lower-income inhabitants would be satisfied (*ibid.*). All of these phenomena and processes would act to ensure that the city space developed into a fragmented conglomeration characterised by the phenomenon of class-based segregation. The peripheries then became reception areas for poor sectors of society, with all the sprawling construction characteristic for such impoverished inhabitants of a city.

A particular phenomenon came to characterise the area of heights known as the Cerros Orientales, in which all the phenomena associated with the urban expansion of Bogota, and all the causes thereof, were in action – and could be observed – together. Thus, farmland on the Sabana de Bogotá was being converted into urban land, and there was violence, a concentration by force of those moving in from other regions of Colombia, and pursuit overall of a city policy that took no account of the needs of poor people (*ibid.*: 48).

Torres (1999: 14) holds that: “‘migrants’ winning of a social and cultural identity within the city was focused around their common interests as builders in, and users of, the city space. Experience with a shared battle to take up residence and have a place to live, to have basic services provided and to build up a symbolic space of their own – all of these factors were decisive in influencing the development of attitudes typical among the residents of poor districts.” To be an inhabitant of a poor district meant – as it still means – to build or create material and symbolic surroundings in a situation of socio-economic segregation in space. This takes place within the framework of a concrete historical process that transforms the poorest into clients of state policies understood as economic policies shaped by social policy (Plazas Neisa and González Rodríguez 2010: 50–51).

This historical process shaped the forms of land use and the expansion of urban built-up areas in the area of the Eastern Cordillera within Bogota. For the Muisca indians inhabiting this land prior to the arrival of the Spaniards, the Cerros Orientales were of symbolic significance as “the Mother of the Earth”, protecting them from the

east winds and allowing them to achieve high crop yields out on the *Sabana de Bogotá* (*ibid.*: 51).

At the same time, as early as in the 1940s, districts housing the upper echelons of society also began to locate in the northern part of the city, which was then giving shape to a socio-spatial structure characterised by “large areas of a peripheral nature with construction encroaching upon the mountain slopes. In residential estates the built-up areas are beginning to pack more densely...” (Zambrando *et al.* 2000: 252). That trend has been characteristic of the spatial development of Bogotá in the whole period since the 1940s, if assuming still greater intensity given the influxes of migrants from rural areas at times of worse fighting in the countryside.

The first plans to bring some order to the spontaneous and unplanned occupation of land here emerged in the 1970s. Among other things, the *Plan Integral de Desarrollo Urbano de la Zona Oriental* – or *PIDUZOB* – was drawn up, with its assumptions including the construction of the *Avenida de los Cerros*. The aforementioned reforestation of the slopes with alien tree species was engaged in here, but represented the kind of measure helping to radicalise already-existing social movements which now demanded improvements in the living conditions endured by the residents of the poor districts. Specifically, the aims were for the city authorities to start caring about the improvement or introduction of streets, as well as health centres and schools. However, a part of what was agreed entailed protection of forest in the so-called *Reserva Forestal*. Subsequent years brought further new projects designed to safeguard the slopes and peaks against continued development.

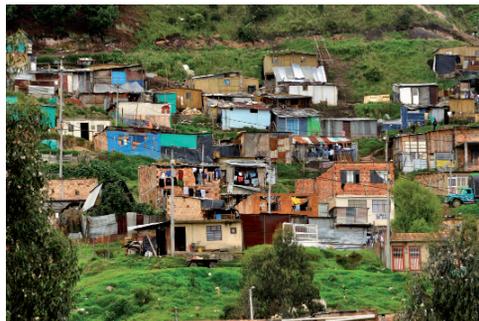
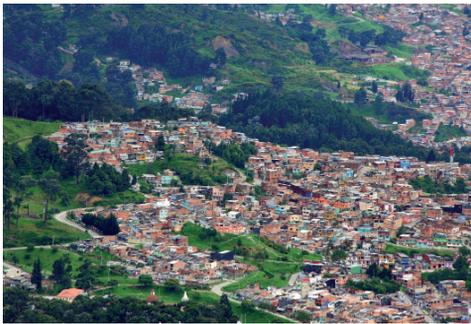
This period also gave rise to an incessant process of expanded construction of middle-class or upper-class housing in the north. Though the Cerros Orientales were recognised as a legally-protected Forest Reserve in 1976, they were nevertheless “targeted” in the late 1970s by an expansion in the construction effort where multi-family housing for some of the better-off was concerned. This reflected an increased incidence of crime and violence in the city that encouraged a move out to the slopes of the Andes. The houses built were fenced off, guarded, and considered to have been rendered rather inaccessible by a lack of city transport, which had failed to reach the new sets of apartment blocks. At the end of the 1970s, the mean size of a dwelling there was in the range 150–250 m², while just ten years later that figure would tend to be in the range 400 to even 750 m² (Mertins 1998). A single apartment (*estrato* 6) often occupies an entire floor of such a building. The expansion in question began to the north of the historic centre where the first tower blocks for wealthy inhabitants of Bogotá had been located. Chapinero district was then taken over, having previously been more of a middle-class zone. Homes from the late 19th and early 20th centuries built mainly by foreign (above all British) entrepreneurs, and becoming intimately associated with (and characteristic for) the area have disappeared almost entirely over the last 20 years, their places taken by blocks of luxury apartments on forest plots (for *estrato* 5 and 6).

Nevertheless, the key role in the expansion of the city’s built-up area was played by developers, whose actions did more to favour building on protected land than protection

itself. This has been true of investments in the construction of apartment blocks, as well as participation in social housing projects. The situation has also been favoured by the occupation of the upper parts of the Andean slopes (above 2500 m a.s.l.) by new immigrants forced out of Colombia's rural regions. In 2005, a Resolution from the Ministry of the Environment, Housing and Territorial Development (*MAVDT*) sanctioned the existence of extensive zones of built-up urban areas then extending over some 1000 ha, of which 400 was taken by the poorest districts, while 600 was occupied by the upper-middle class (*ibid.*: 59). The estates lived in by the wealthy populace are located on the slopes extending from the centre of the city northwards, while those inhabited by the poor take the opposite – southward – direction (see Figure 3). For example: Ciudad Bolívar, the south-eastern part of the Cerros Orientales region, is among the most densely-populated and most highly-urbanised districts of Bogota. It covers 13 000 ha, of which 3 300 are occupied by built-up areas of an urban character. The parcelling off of land formerly included within several of the haciendas began here in the 1940s. The first informal settlements characterised by low-quality construction came into being in the 1950s. These were located in the lower parts of the mountains, or else at the foot of their slopes. They included the Meissen, San Francisco, Buenos Aires, Lucero Bajo and La María estates, which provided homes for first inhabitants from the Departments of Tolima, Boyacá and Cundinamarca. By the 1970s, there were an estimated 50 000 people here (Lagos Parra 2012). A second stage of the urbanisation process began in the 1980s, as an expansion of the built-up area on to higher parts of slopes and even certain summits saw the construction of the Naciones Unidas, Cordillera, Alpes, Juan José Rendón, Juan Pablo II and other estates. It was within the framework of a programme to furnish some of the plots with fuller infrastructure (*lotes con servicios*) – as financed with International Development Bank money – that the Sierra Morena, Arbozadora Alta and Arbozadora Baja districts came into being, over around 20 years, creating poles for the growth of sectors that were marginal by the standards of the entire country (Lagos Parra 2012). From 1983, Act 11 of the Bogota Council set out the legal framework and administrative plan known as the *Plan Ciudad Bolívar*, a major objective of which was the planned management of Ciudad Bolívar in such a way as to leave plain areas free of construction, in order for them to serve the development of agriculture, given that the expansion of built-up areas was to take place on land of more limited value from the point of view of farming (Lagos Parra 2012). 1983 also brought the establishment of the Office of the Mayor of Ciudad Bolívar, with the limits of the district also being defined. As early as in the 1990s, this was changed into the office of a local mayor (*Alcalde Local* with a *Junta Administradora Local*).

In accordance with the acknowledged social stratification in place officially in Bogota, 63.5% of the 5 217 quarters or *manzanas* built up in Ciudad Bolívar fall within the so-called first stratum (1); with 21.7% assigned to the second; 1.7% to the third and 13.0% to suburban areas (Lagos Parra 2012: 33). In general it is accepted, as will be noted below, that Ciudad Bolívar has a prevalence of housing estates of two types, each with its built-up areas with characteristic features. The first type comprises estates (groups of houses erected using more

or less permanent materials) that are not consolidated, classed in strata 1 or 2 and featuring major shortfalls as regards infrastructure, access, facilities and public space. The second type is seen as the consolidated estate, classified in terms of the middle strata (3 and 4), in which there are ongoing processes of land-use change and unplanned intensification of forms of built-up area (Lagos Parra 2012: 34). The whole district is dominated by construction assigned to stratum (*estrato 1*), in which people mostly go without, are poor and have limited access to all of the services essential for normal everyday life. The lack of infrastructure is particularly tangible, given that most roads and streets are lacking hard surfaces, and are very narrow, often ultimately giving way to the steps by which homes on steep slopes are accessed. Not all of the estates have electricity and running water.



Photos 1–6. Photos illustrate the process of expansion of poor neighborhoods in the south of Bogotá on the surrounding hills and on the range of Eastern Cordillera. On the upper parts of the slopes of the Andean forest disappeared. In its place emerged a poor temporary shelter of displaced people

The materials from which these makeshift shelters are constructed are not suitable *de facto* for use in what is a cold, mountainous climate (at an altitude of more than 2 600 m above sea level).

To sum up, the interviews conducted with inhabitants of the south-eastern districts make it clear that the existing belt of forest and mountain landscape (at and above 2 500 m a.s.l.) is threatened by new developments being pursued by developers for the upper classes, the encroachment of built-up areas inhabited by the poor on to more and more elevated slopes (with residents mainly coming from areas hit by the activity of paramilitary groupings), mining activity and the air pollution it generates, and great amounts of refuse piling up in valleys and gullies.

The protected area covers some 14 170 ha, of which forest now remains on 11.7% (Sanin 2007). The state is the owner of just 45% of the mountain land in the Cerros Orientales. 55% is thus in private hands, and 12% of that land remains forest. Farmers are being steadily pushed off this land, though 5 villages whose inhabitants engage in agriculture remain. 78 settlements have been legalised, and this is particularly true of (30) apartment-block complexes inhabited by members of the upper-middle class (*ibid.*).

The expansion of the built-up urban area on to areas subject to protection does not merely reduce the size of the latter, given that it also encourages many unfavourable phenomena. Problems that have already occurred thanks to this eastward expansion from the city centre (into the Cerros Orientales) then spread to south-eastern districts, in which a lack of management plans and initial absence of limits on settlement encouraged the founding of estates of makeshift houses in a protected area. In turn, enhanced exploitation of rock on many parts of the slopes (in the northern districts especially) gave rise to severe damage to the substratum and to a destabilisation of soil layers that combined with the removal of vegetation to further favour landslides and mudslides. It is in the vicinity of quarries and gravel workings that illegal settlements occupied by the poor came into existence (Sanin 2007).

Developers seeking to meet the needs of the rich sought free plots to build on, and the slopes of the Andes emerged as a very suitable location for this. While the capital city as a whole is of quite diversified structure where housing possibilities are concerned, the slopes of the Cordillera are of uniform structure from 7th Street (Carrera) upwards, inasmuch as that housing for the upper classes and higher echelons in society is almost entirely dominant.

Data obtained by the *Encuesta de Calidad de Vida* (ECV) project in 2003 found that almost 50% of all dwellings in Chapinero were in private ownership and had already been paid for, while a further 12% were in the course of being paid for. This is to say that around 62% of dwellings already belonged to their occupiers. Furthermore, the mean value of the dwellings in question – 10 years ago – was around \$60 000 (*Encuesta...* 2003). In the case of Los Rosales district in particular, the process of exclusion gained the active support of developers confining their activity to the construction of homes for the rich (Arriagada and Rodríguez 2003).

CONCLUSIONS – REGULATIONS CONCERNING THE OCCUPATION OF PLOTS OF LAND IN THE CERROS ORIENTALES

From the point of view of this article, a key issue is to determine and describe the conditioning underpinning the strategies and policies the city administration has adopted in respect of the Cerros Orientales. However, a true debate over the need to regulate the occupation of the slopes of the Cordillera by different forms of construction only really began at the beginning of the 21st century (Carrizosa 2003). The onset of the new century brought the enactment of a document entitled *Código Nacional de Recursos Naturales Renovables* (*ibid.*), which set out principles for the management of these areas. The emphasis was placed on the protection of forest complexes and swamps in the Bogota area.

In the case of Bogota, there is thus a perceived need to bring order to (and control over) the process by which the capital city expands, with this being linked more fully than hitherto with processes ongoing in the wider urban region. An instrument to be employed in this regard is urban planning, whose basic assumptions are that a cohesive approach that encourages sustainable development will be pursued (Brand and Prada 2003). The emphasis on sustainability also makes clear the need for nature conservation measures that will protect ecosystems still present in Bogota and the wider *Sabana de Bogotá*, with appropriate forms of management of the environment engaged in (*ibidem*). Issues of nature conservation within the city also link up with the land-ownership structure; hence the change of strategy from environmental management to spatial management – often only on public land.

As early as in 2002, Maldonado noted the huge problem associated with spatial management in the Cerros Orientales, arising out of the fact that more than 60% of the land making it up is in private hands (Maldonado 2002: 13). A public restriction policy not permitting forms of land-use other than protection reinforces speculative activity in relation to land, as well as different forms of illegal and non-formal occupation (*estrato 1*).

Between 2002 and 2004 there emerged a strategy for the management of Bogota's mountain areas (the *Plan de Ordenamiento y Manejo de los Cerros Orientales*, abbreviated to *POMCO*). In accordance with this, several zones with different features and methods of management were identified and designated as subject to protection:

1. On 63% of the area encompassed by the Strategy, a protected area (*Zona de conservación*) was to extend protection to local flora, even where this had been subject to earlier modification;
2. On 34% of the area encompassed by the Strategy (within the *Zona de rehabilitación ecológica*), there was to be a designation dictating redevelopment of the plant cover through restoration of native vegetation, and attendant improvements in both soil quality and water relations;
3. On 0.76% of the area encompassed by the Strategy (within the *Zona de Recuperación paisajística*), the main task was to achieve an improvement in soil quality on

land devastated by mining activity, settlement and the fragmentation of existing ecosystems;

4. On 1.7% of the area encompassed by the Strategy, an area designated for the renewal of existing natural environmental conditions (*Zona de Recuperación Ambiental*), in which the aim is to maintain to the greatest possible extent the existing features of the environment in areas already encroached upon by settlement (albeit initially sparse and scattered), or else by the makeshift homes of refugees (Sanin 2007: 8).

The socio-spatial segregation characteristic for large Colombian cities (and most especially Bogota) assumes extreme forms in the Cerros Orientales area. The standards underpinning the spatial division of Bogota that were referred to above give rise to huge differences in both the quality and density of infrastructure and municipal services, with these in turn exerting an influence on land prices (Parias 2001). The spatial structure based on segregation criteria is variable, and this also has a further impact on the market for land (see Figure 3).

Earlier works (Czerny 2012, 2014, 2015) have made it clear how a social segregation that is institutionalised takes shape, in line with what Jaramillo called *rentas de monopolio de segregación* (Jaramillo 1994). In this case it is assumed that certain urban areas are perceived to different degrees as very attractive and privileged from the point of view of residential features. Customers on higher incomes are ready to pay more for such locations, and for the services that public and private suppliers render in them. The effect is a raising of the income obtainable from the land in question that is disproportionate where the overall space within the city is concerned, and has the knock-on effect of raising the prices of dwellings in line with the foreseen benefits of residing in such a place.

The ever-greater pressure on green space, especially on the slopes of the Andes, ensures that no heed is paid to provisions concerning the protection of these areas, and this is especially so with developments serving the wealthy inhabitants of the Colombian capital. In districts occupied by the “lower orders” at altitudes around 2 600 m a.s.l. it is nothing unusual to see both City Guards and the military deployed to “discourage” potential new inhabitants from engaging in unregulated colonisation of the slopes. However, this activity does not always achieve the results anticipated for it.

ACKNOWLEDGEMENTS

This article is founded upon work carried out within the project entitled: “Old and new in the urban space in Latin America – the actors and arguers of changes” MNiSW0407/B/P01/2011.

REFERENCES

- Alba R.D., Logan J.R., 1991, *Variations on two themes: racial and ethnic patterns in the attainment of suburban residence*, *Demography*, 28, 431–453.
- Alba R.D., Logan J.R., 1993, *Minority proximity to whites in suburbs: an individual level analysis of segregation*, *American Journal of Sociology*, 98, 1388–1427.
- Allen A., 2003, *Environmental Planning and Management of the Peri-urban Interface: Perspectives on an Emerging Field*, *Environment and Urbanization*, 15, 1, 135–47.
- Arriagada C., Rodríguez J., 2003, *Segregación residencial en áreas metropolitanas de América Latina: magnitud, características, evolución, e implicaciones de política*, [Versión Electrónica], Serie Población y Desarrollo, nro. 47, Santiago de Chile: Centro Latinoamericano y Caribeño de Demografía (CELADE)-División de Población, Proyecto Regional de Población CELADE/Fondo de Población de las Naciones Unidas (UNFPA), CEPAL.
- Bohórquez-Alfonso I.A., 2008, *De arriba para abajo: la discusión de los cerros orientales de Bogotá*, *Cuadernos de Vivienda y urbanismo*, 1, 1, 124–145.
- Brand P., Prada F., 2003, *La invención de futuros urbanos. Estrategias de competitividad económica y sostenibilidad ambiental en las cuatro principales de Colombia*, Medellín: Colciencias, Universidad Nacional de Colombia sede Medellín.
- Carrizosa J., 2003, *Colombia: de lo imaginario a lo complejo. Reflexiones y notas acerca de ambiente, desarrollo y paz*, Bogotá: IDEA-Universidad Nacional de Colombia.
- CIFA, CIE, 1999, *Los Cerros: Paisaje e identidad cultural. Identificación y valoración del patrimonio ambiental y cultural de los Cerros Orientales de Bogotá*, Informe final de consultoría, Bogotá: IDCT, Universidad de los Andes.
- Czerny M., 2011, *Bogota's social-spatial structure and its permanence in the city's spatial planning landscape*, [in:] Czerny M., Tapia Quevedo J. (eds), *Metropolitan areas in transition*, WUW, Warszawa, 87–104.
- Czerny M., 2011a, *The permanence of socio-economically marginal structures within urban space: The example of Bogotá*, *Quaestiones Geographicae*, 30, 4, 47–54.
- Czerny M., 2012, *Bogota – fragmented or structured city?* [in:] M. Czerny, G. Hoyos Castillo (eds), *Big Cities in Transition. City of North and South*, LAMBERT Academic Publishing, Saarbrücken, 196–231.
- Czerny M., 2014, *Stare i nowe w przestrzeni miasta Ameryki Łacińskiej, (Past and present in the city's spatial planning landscape of Latin America)*, WUW, Warszawa, pp. 169.
- Czerny M., 2015, *Capítulo 12 Bogotá – ¿la ciudad fragmentada u ordenada? Apuntes sobre la segregación urbana*, [in:] Torres Lima P., Cedeño Valdiviezo A. (eds), *Ecourbanismo y habitabilidad regional, Contribuciones de América Latina*, UAM Unidad Xochimilco, Mexico, 205–217.
- Czerny A., Czerny M., 2014, *Suburbanization or Chaotic Encroachment upon Agricultural Land within Poland's Small and Medium-sized Towns, as Exemplified by Puławy*, [in:] M. Czerny, G. Hoyos Castillo (eds), *Suburbanization versus Peripheral Sustainability of Rural-Urban Areas Fringes*, NOVA, New York, 161–191.
- Duncan O.D., Duncan B., 1955, *A methodological analysis of segregation indices*, *American Sociological Review*, 20, 210–217.

- Ratcliffe P., 2002, *Theorising ethnic and “racial” exclusion in housing*, [in:] P. Somerville, A. Steele (eds), *Race’, Housing and Social Exclusion*, London, Jessica Kingsley, 22–39.
- Robinson D., 2002, *Missing the target? Discrimination and exclusion in the allocation of social housing*, [in:] P. Somerville, A. Steele (eds), *Race’, Housing and Social Exclusion*, London, Jessica Kingsley, 94–113.
- Sanin E.J.F., 2007, *Por una Bogota con cerros: noviembre 2007*, http://porunabogotaconcerros2007.blogspot.com/2007_11_
- SMA, 2014, <http://ambientebogota.gov.co/cerros-orientales>
- Smets P., Salman T., 2008, *Countering Urban Segregation: Theoretical and Policy Innovations from around the Globe*, *Urban Studies*, 45, 7, 1307–1332.
- Tacoli C., 2003, *The Links between Urban and Rural Development*, *Environment and Urbanization*, 15, 3, 3–12.
- Taeuber K.E., Taeuber A.F., 1965, *Negroes in Cities: Residential Segregation and Neighborhood Change*, Chicago, Aldine.
- Torres Carrillo A., 1999, *El Barrio: Barrios populares e identidades colectivas*, [in:] H. Carvajalino Bedoya (ed.), *El barrio: fragmento de ciudad II* /director, Santa Fe de Bogotá. Barrio Taller. *UN-HABITAT: products and services*, United Nations Human Settlements Programme, 2004, 2, Nairobi.
- Uribe Mallarino C., Vásquez Cardozo S., Pardo Pérez C., 2006, *Subsidiar y segregar: la política de estratificación y sus efectos sobre la movilidad social en Bogotá*, *Papel Político*, 11, 1, 69–94.
- Valenzuela J., Vernez G., 1974, *Construcción popular y estructura del mercado de vivienda: el caso de Bogotá*, *Revista Interamericana de Planificación*, 31, 89–140.
- Vernez G., 1974, *A housing services policy for low-income urban families in underdeveloped countries*, New York City – Rand Institute, New York.
- Wilhelmy H., Borsdorf A., 1984 and 1985, *Die Städte Südamerikas*, Bd. 1: Wesen und Wandel, Bd. 2: Die urbanen Zentren und ihre Regionen, [in:] *Urbanisierung der Erde*, Bände 3/1 und 3/2, Stuttgart, Berlin.
- Zoua M. Vang, 2010, *Housing Supply and Residential Segregation in Ireland*, *Urban Studies*, 47, 14, 2983–3012.
- Zambrano F., Castelblanco C., Sánchez L., Hoyos J., Benninghoff F., Ruíz M., 2000, *Comunidades y territorios. Reconstrucción histórica de Usaqué*, Bogotá: IDCT, Alcaldía Local Usaquén, JAL-Usaquén, Horizontes.