

Inequality and climate change. Bogotá's urban development discourse and the SDG perspective

Background Paper N° 2 prepared for the workshop

"Urban productivity and resilience: a case for Global Sustainable Development Goals"

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(1) The project "Building Sustainability: Dialogue Tables": aim and scope

In late 2012, in the mark of the German-Colombian Research Cooperation initiated by both countries' responsible ministries, the Institute for Advanced Sustainability Studies in Potsdam (IASS) and the Botanical Garden of Bogotá José Celestino Mutis (BJCM) decided to cooperate in a transdisciplinary research project which, true to the spirit of transdisciplinarity, would design an intervention in the field with experts from academia and other sectors of society contributing (in't Veld 2011) thus re-validating contextualized knowledge within the scientific process (Nowotny 2000). This project, at the local and practical level, was designed as a series of public lectures and TV-streamed expert discussions aiming to (a) promote a 'critical mass' of better informed people which contribute to mobilize strategic actors; (b) to contribute to better dialogue between policy levels and between politics and society on the work for the common good and (c) to generate impact on public sustainable development policies. While [c] is an aim difficult to evaluate at least in short-term, there certainly were methodologic elements to evaluate, at least partially, the strategic goals [a] and [b], a task which is currently undertaken.

At the conceptual level, the research question was whether, within the specific local discourse at "the origin of SDGs" (see Background Paper N°1), references to the international/global level (e. g. standards, norms, goals, examples) were existent and/or considered useful.¹ In order to assess the latter (and, with regard to the practical targets, provide input and additional legitimacy), international experts from the respective thematic areas were invited to provide additional input and to discuss Bogotan development in the light of their foreign experience. Furthermore, questions regarding the global/international level were included in all interview guidelines and questionnaires.

The core of the project consisted in four dialogue events every two months (February, April, June and August 2013), each of them in a twofold format: First, a public lecture ("conferencia") with four 30 minutes long presentations, introduced by representatives of IASS, BJCM and the City of Bogotá; these took place in the Public Library Virgilio Barco in a room which allowed for 400 assistants. Here, questionnaires were distributed in order to capture demographic features of the public and to know what they considered key aspects of the conference's topic, how they found them reflected in what the speakers said, if they considered the international contributions useful and, if so, why, etc. The two last conferences also allowed for questions to be made via slips of paper which were then

¹ A second question ("Can we identify stable success factors for developing robust plausible perspectives for action?") was related to the influence of process parameters on the outcome, but was dropped during the project because of certain difficulties to let formats vary systematically.

assembled and read out to the final panel of speakers. Second, sometimes the same day, sometimes the day after, we arranged an expert talk (“conversatorio”) of three to four hours and between 10 and 15 experts from different sectors, which took place at the Botanical Garden and was moderated by that institution’s director; here, the direct public was more selected and consisted of ca. 50 participants, but the events were livestreamed via the municipal TV station Canal Capital. More refined and lengthy questionnaires were distributed to the public, and the discussions itself were increasingly enriched by ‘fish bowl’ elements. Also there existed the possibility of commentaries via the JBJCM twitter. Previous to these talks, 30 minutes ex-ante interviews with some of the experts in order to capture their views more in depth, allow for a structuring of the discussion and possibly evaluate whether these views were developed, refined or obstructed during the dialogue.

When planning the project, three priority (urban) development topics were selected which we considered to be ‘hot’ both in international and local discourse, namely Water Governance, Energy, and Soils & Nutrition. To the latter, we had planned to add the aspect of “renaturalization” but eliminated it because we felt that it could not be dealt with properly together with the others in such a short discussion. Apart from being important local topics, these three also form the so-called “nexus”, an approach to SD complexity highly relevant to the post-2015 debates (European Union 2012). – The August event dealt directly with Sustainable Development Goals; as we felt that this might not attract a broader public by itself, we named the respective lecture event (but not the expert talk) “Urban model – Development model”. Due to the success of the events, JBJCM considers to continue the series in 2014 on its own with additional topics.

This Background Paper does not present the complete evaluation and documentation of the project, which isn’t finished yet and will be published next year.² Instead, it will present some core findings and facts, as well as some speculations on what an “urban SDG”, or SDGs in general, ought to cover if they were to be useful for the city of Bogotá. In order to do so, some background information on the city’s current urban development plan and activities is needed as well.

(2) A few Bogotan and Colombian context factors

Bogotá is a city with 7,36 million inhabitants (one sixth of Colombia’s population) and a very high average population density (21.276 inh./km²), which places it among the densest capitals and big cities of the world. This density, however, is very unequally distributed, which becomes evident when looking for instance at the areas with high quality of life in the northern centre of the city, on one hand, where densities considerably below 100 inh./ha can be found, and the poor areas in the southwest, on the other, where density can go beyond 500 inh./ha (Alcaldía Mayor 2010). Parts of the traditional city centre have been drastically reduced both in residential density and in concentration of high-quality tertiary activities, which relates to the dynamics of ever accelerated spatial segregation since the 1950’s and, again, late 1970’s (Alfonso 2012). Other areas, especially in the south, can peak over 2.000 inh./ha in residential cores (for these and following data, see Instituto de Estudios Urbanos and Secretaría de Hacienda 2013). Overall growth has been fast (with annual growth rates above 5% during extended periods; Bogotá had only reached 1 million inhabitants in the 1950’s and 4 million around 1980) and only dropped down in the last 15 years, below an annual

² For those who understand Spanish, plenty of written and audiovisual information on each of the dialogue tables is available at www.jbb.gov.co/conversatorios.

rate of 2%, but still above the country's average. This growth has been related to economic opportunities but also, in terms of immigration, to the political instabilities in many regions of Colombia; it has been faster than in any other Colombian metropolis and is considerably imbalanced in terms of overall territorial sustainability (Carrizosa Umaña 2005).

Apart from overcrowding in the poor neighbourhoods, growth has taken the form of urban sprawl³, which occurs in the sensitive ecological context of a wet savannah placed in an Andean highland. This savannah is rich in fertile soils and connected with sensitive ecosystems like the *páramos*, Andean moors which are key for the hydrological balance and account for the provision of Bogotá's drinking water (although one of them, Chingaza, which accounts for 80% of this provision, belongs to another watershed and is connected to Bogotá through a 55 km long aqueduct). Their extraordinary water retaining qualities and therefore their repository function are not only endangered by climate change but also suffer the pressure of increased mining in the region and the expansion of agricultural frontiers which itself relates to the rapid urbanization and consecutive soil sealing. In addition to the repository endangerment, the clay soils which dominate the area don't allow for rapid drainage which not only hampers groundwater renewal but, along with the rapid loss of the inner-urban wetlands, makes changing rainfall distribution a sometimes disastrous problem (Ardila 2013). The election campaign which brought the current mayor, Gustavo Petro Urrego, into office, took place in 2011 after a winter of heavy floodings due to the *La Niña* phenomenon, which in a lesser degree recurred the next winter when he assumed office. The opposite, a heavy *El Niño* drought episode, had occurred in 1997, leading first to considerable efforts in water saving by the city (Carrizosa 2013), and second to a push for diversification in the national energy sector, which still is dominated by hydro energy (two thirds) but has gone, increasingly, for the use of coal. Both *El Niño* and *La Niña* are weather phenomena whose dynamics, although not easy to be modelled nor to be associated with climate change (IPCC 2012), are often perceived as a part of it.

Water, in any case, is an issue that gets public attention quite easily, and Petro's administration has used this cleverly for putting forward the second pillar of their urban development plan: "a territory which confronts climate change and is aligned around its water bodies" (Alcaldía Mayor 2012). The main points here are not only renewed efforts regarding the distribution, quality and financing of waste water treatment, but also the renaturalization of wetlands and rivers, the removal and/or protection of citizens living in risk areas, the enhancement of the connectivity of ecosystems (Andrade *et al.* 2013) and to control via social and ecological programs, economic measures the "transition spaces" on urban-rural borders. One of the problems here is the Colombian constitution which doesn't provide for strong regions, and that the only existing (environmental) policy mechanisms for urban-regional cooperation, the Autonomous Regional Corporations (CAR) are weak. The intents of the current administration to use concrete policy measures, like stopping the concessions for bulk water supply to the adjacent municipalities, have generated harsh controversies often framed as a debate between the "right to development" and environmental protection. Even fiercer is the debate about extraordinary modifications to the long-term zoning plan (Plan de Ordenamiento Territorial – POT) which include the introduction of new urban development charges.

At the national level, the debate around new policies of territorial planning is permanent and politically very sensitive, as it touches historically ancient subjects like the unequal distribution of

³ The Capital District itself contains rural areas, but the most notable population growth is now in the surrounding communities of the region Cundinamarca, which partly explains the decrease of the growth rate within Bogotá itself.

land, the armed conflict, illicit crops, but also more recent ones like increased mining and agribusiness vs. small-scale farmers, etc. One might say that territorial planning bundles all these issues. However, it is often considered a merely “rural” issue and not linked to the dynamics of cities, which ignores that there is rather a continuum than a dichotomy between cities and countryside and that Colombia might be considerably less “urban” than conventionally expressed in the statistics which spoke of 75% of urbanization (PNUD Colombia [2011](#)). This is also reflected in the current debates on the possibility of establishing a “peasant reservation zone” (Zona de Reserva Campesina – ZRC) in the district area of Sumapaz. The ZRCs are a construct envisaged by a national law of 1994 in order to protect farmers from violence and foster their economic development with special support from the state, moving away from illicit crops and with special attention to ecological functions of geographic areas. Despite being an official development instrument, they have always been seen with mistrust as potential areas of retreat for guerrilla fighters (ILSA [2012](#)). Currently, only six of them are established; their future number is currently one of the points of negotiation between the Colombian government and the FARC in the Havana peace talks. Sumapaz has officially applied for such a status and is strongly supported by the Petro administration, a fact that is not fully welcomed by the National Government.

Bogotá is internationally known for being the first city of similar size that successfully introduced a Bus Rapid Transit (BRT) system, the so-called TransMilenio, in the year 2000 via a public-private partnership. The system, several feeder lines included, quickly enabled the daily transport of more than one million passengers and was, in terms of cost effectiveness and overall benefit, even considered as an example to follow in industrialized countries (Cain *et al.* [2006](#)). The example has often been cited as “the jewel of Bogotá”, but problems arose later with lack of reinvestment by the private owners and subsequent overcrowding, riots etc., and in general an insufficient extension into multimodality is complained of by many, also at our energy/mobility dialogue table. The increase of value of residential buildings in urban areas connected to TransMilenio by 6-17% is probably not reflected adequately in the property tax schemes (Perdomo Calvo *et al.* [2007](#)), which serves the current administration as an argument for new urban development charges and the investment into densification via social housing along the transport lines (Alcaldía Mayor [2013](#)).

(3) General findings of the events

The remarks of this chapter and the both that follow are preliminary in many ways, as not all interviews are analyzed in depth yet and especially the questionnaires from the fourth event are not yet evaluated. They well can serve as a valid orientation, though.

The conference on *Water governance* had the strongest live-assistance, long queues formed early in the morning and many people had to be sent home because there wasn’t enough room for them. The paragraphs written down on the open fields of the questionnaires were the longest and most detailed of all the events. People were mostly under 50 years old, both students and professionals, and three quarters of them had lived in Bogotá 20 years or longer. On TV, 10.970 spectators followed the streaming of the dialogue table. Twitter responses were numerous, the number of subscribers to the JBJCM newsletter increased considerably after event. Also, the attendance of both academia and the local government (three leading Secretaries) was broad and high-ranking, although national government and private sector were missing. We can clearly say that the topic got political attention

of 'the city', although with certain sectoral uniformity. (The latter might co-explain the high consensus among all discussants and the public we found; see [4].)

The conference on *Energy* (framed title-wise as "Energy security vs. Environmental Sustainability?") filled the auditory but didn't attract as many people as the water event, and those who came were younger (students); the response rate of questionnaires was the highest of the whole series which in itself can be an index for academic habitus. Only 47% of respondents had been living in Bogotá for more than 20 years. This time, experts were more diverse and included the private sector; the debate was more varied and controversial. A certain contrast to these data is the audience rate which *doubled* those of the water event (22.440 spectators), but it has to be taken into consideration that the Mayor himself assisted. Despite that audience rate, the overall impression was of somewhat lower popularity and more of a proper 'expert' debate. The Mayor and others explicitly thanked us for having created a "rare opportunity" for public debate on the energy topic, which they said wasn't usual in Colombia these days.

The *Soils & Nutrition* topic had been framed with the slogan "Sowing Food Sovereignty", and the conference was attended by people of equal age distribution along the scale; in contrast to the two other events, 35% were over 50 years old and three quarters of them were long-time Bogotanos. Judging from the relatively low response rate of questionnaires and the hesitance to write longer paragraphs on the sheets or to leave personal information, together with the optical impression we got from the conference, it seems safe to say that many of attendants were small farmers which also attended the surrounding "Week of Seeds" organized by JBJCM, a series of events, expositions, markets and so on that was very well-received. TV audience rate within the city was very low (500 spectators) which is only partially explained by a simultaneous soccer event. The topic itself just presented itself as 'of rural concern' more than urban; this is also true for the expert round which was rhetorically dominated by farmers associations and the like, while for instance the representative of industrial food processors left early.

This had a sort of epilogue two months later, when many (even speakers) were hampered to assist the event on the *SDGs* by street blocks and manifestations related to the "paro agrario", a very tense time of nation-wide protests from the agricultural, transport and mining sector (mainly against free trade agreements) which, together with students solidarity activities, 'invaded' the city of Bogotá. The "food sovereignty" topic, again, showed its high political potential and 'imposed' it over the indifference of urban dwellers. Because of this, the attention to the *SDG* discussions was rather subdued (but evaluation of questionnaires is still not done). However, the absence of high level representatives of the National Government itself was notable, given that it was 'their' topic, and it was rather appropriated by academic experts. Only a desk officer from the environment ministry assisted (in contrast to soils where the agricultural ministry sent at least a head of department).

The following table, in its first row, shows high values for attendance and politization in green. The middle rows express assessments of consensus and dissensus which will be discussed in the two next chapters. The fourth row shows the tenor of questionnaire responses to the international expert inputs (e.g. on water governance experiences from different European countries, car sharing in Berlin, agriculture in Havana, international fight against soil degradation) which were mostly described as encouraging or thought provoking, and sometimes, like in the urban agriculture or car sharing topic, showed surprising convergence with participants' own views. Diversity of perspectives was often mentioned as a main asset of the dialogue format and the expression of one respondent,

that “it enables us to see Bogotá from the global”, somehow seemed paradigmatic of what many tried to express. This can be seen as an argument for the relevance for global considerations at local level. Nevertheless, an important minority (16%) of responses, especially in the water conference, expressed a wish for clearer applicability of foreign experiences to the case of Bogotá. And relevant international initiatives, like MDG7, “Sustainable Energy for All”, “Zero Net Land Degradation” and the like, were only partially considered relevant for Colombia by experts, and known only by a minority of the general public. It is however interesting that spectators of the dialogue tables (who answered more detailed questionnaires) mostly saw the topics in question as *local* and/or *international* ones, but in a lesser degree (33%) as nationally framed. This might be, in part, an effect of the dialogue format itself, but could also be seen as an argument for the “think global act local” connection. In general, it seems safe to say that SDGs, although clearly not an ‘umbrella’ for local SD discourse yet, could clearly find their place within the local discursive framework if communicated appropriately.

	Attendance and Politization	Expert consensus	Convergence experts - general public	International elements considered useful
Water Governance				
Energy				
Soils & Nutrition				
SDGs				

(4) Consensus elements at the Dialogue Tables

For water governance,

- Mayor Petro’s 2012 decision to grant each person belonging to 1st and 2nd strata (Colombian system of classification by economic status) a gratuitous “vital minimum” of drinking water (6.000l/month) was approved, also with the indication that its implications for usage efficiency had proven to be overall positive;
- the “right to water” and the central role of the public enterprise of the aqueduct in securing this right were recognized, and the notion was extended toward a broader right to/of a healthy territory;
- the intentions of providing for a more rigorous watershed focus were welcomed and the importance of the ecological main structure was emphasized; this was linked to a positive view on the inner city densification and wetland renaturalization plans of the administration. (this ecosystemic emphasis was shared explicitly by 25% of questionnaire respondents);
- the participatory and consensus-oriented elements of regional water governance arrangements in European countries were welcomed across the board and were even more explicitly echoed in the general public’s view (around 20% of responses).

Regarding *energy*,

- mobility was the central topic both for experts and the general public, and there was a consensus on the need for increase further the share of public transport in the modal split and counter the ongoing trend towards more private vehicles (with car sharing as an additional interesting 'cultural' option Colombia should possibly consider); electrification of public transport (metro plan) was emphasized by the government and more or less passively approved by other discussants; and
- urban biowaste was considered to have a high energy potential worth exploring more thoroughly, also along with cogeneration models.

All other energy issues energy were controversial or obscure (see [5]).

The *soils and nutrition* discussion agreed

- on the desirability of strengthening regional (traditional) food production and regional food commerce; Bogotan government initiatives for fostering local farmer markets and educational initiatives for informing consumers on traditional food were welcomed;
- that urban agriculture could to some degree contribute to food security;
- on the necessity of improving national data transparency on soil quality and productive potential and on property rights regimes (cadastral information);
- that there is an urban-rural continuum that was not sufficiently recognized which includes the need to assess urban sprawl as a major socio-ecological problem;
- there is a need for institutional reforms for governing the rural areas of the country.

Beyond that, the controversy was remarkably strong and, in addition, much 'louder' than at the energy dialogue table.

The SDG discussion's evaluation is not available yet (for some general remarks, see above chapter [3]).

(5) Dissent elements and omissions at the Dialogue Tables

While there was across-the-board unanimity regarding the *water governance* topic, it was however noticeable that

- the general public made a more explicit emphasis on the issue of better financing and technical improvement of river purification and wastewater treatment, an aspect that, although discussed by many experts during the ex-ante interviews, got somehow 'lost' during the TV debate.
- there was only rhetorical, but no concrete political allusion to regional integration, and scarcely any discussion of the controversial issue of bulk water supply to adjacent communities (see above chapter [2]).

In matters of *energy*, dissent emerged

- when discussing renewables: solar potential in Colombia and Bogotá was estimated differently; economic benefits of employing (imported) renewable energy technologies were assessed controversially, and in general the experts were a little less emphatic about renewables (other than hydro) than the general public, where 21% considered them a “priority”;
- regarding the institutional responsibilities and criteria in territorial planning (e.g. hydropower plants vs. small-scale farming and natural protection, cost-benefit-assessment of transmission lines and participation of affected municipalities...); in general, the question whether and to which degree other territories should ‘pay’ for the energy security of the metropolis, remained unanswered (and partly avoided);
- the importance of energy efficiency, which was emphasized very much by the general public (24%) and international experts, but downplayed by the private sector and not concretely underpinned with policy proposals by most academic experts;
- around the question whether shifting away from cars was predominantly a question of offering better public transport infrastructure or a deeper cultural matter and
- whether densification of the inner city would really lead to more transport and energy efficiency.

The *soils and nutrition* debate

- did not agree on *how* an institutional reform for better soil management and territorial planning should actually look like⁴;
- did not address the role and positions of food processors properly;
- did not consider the political role and organization of consumers in depth (but was producer-driven instead);
- tended by majority to condemn national free trade agreements and the legal discrimination of local seeds, but was not unanimous on that and could esp. not agree on whether “food security” could actually be reached with a “food sovereignty” approach for Bogotá and its region, and what exactly could be, in quantitative terms, the contribution of urban farming.

(6) Some observations regarding Bogota and the (urban) SDG debate

Quality of life. – In general, some of the indicators that are currently pondered in the urban SDG discussions, like green areas per capita or public space, would support the endeavors and visions we encountered to be predominant in our discourse (with certain specification; see below point “inequality”). General “access to sanitation” indicators would probably not serve the city’s needs, as *quality* of waste water treatment is the more pressing problem. Air quality didn’t surface in the

⁴ There were, however, three experts present that had been very recently invited to join an interministerial working group on the matter.

dialogue and figures in the current urban development plan with one singular indicator (particulate matter); addressing this dimension through an SDG would probably support the electrification-of-transport debate but not necessarily meet the heart of policy makers' and citizens' concerns. Outcome-oriented health indicators like child mortality and malnutrition are numerous in the urban development plan, and health was a cross-cutting concern expressed by many questionnaire respondents in almost all events of these series. Health elements from an SDG framework, be it at the level of an urban goal or other thematic goals, would therefore probably be 'absorbed' by local discourse rather quickly. – Food security and quality are raising concerns in Bogotá and show many political linkages, but are not underpinned by indicators yet; an SDG could nudge certain actors towards more decisive actions in this area.

The socio-ecosystem. – Bogotá has started to use a "water vulnerability index" which takes into account actual and projected usage and availability (IDEAM 2010). Such type of indicator forces the city administration to think long-term and to think beyond city borders. These and other possible measurements like an Urban Biodiversity Index (Revi and Rosenzweig 2013), which take partial equilibriums of the socio-ecosystem into account, would encourage the rather innovative thinking that has begun to develop in Bogotá and that goes beyond the generality of "risk prevention plans". Other, more exemplary indicators, like reforestation of the headwater areas, have been proposed at the fourth dialogue table. Although certain specificities (like the existence of inner-urban wetlands) might not be appropriate candidates for a global goal, Bogotá would definitely benefit from ecosystem structure and service oriented elements of an urban SDG, and many actors in the city would probably align themselves with this kind of target setting. This would also address aspects of climate change resilience; and climate change, as said before, is not only one "pillar" of the urban development, but is mentioned by Mayor Gustavo Petro in almost all the interventions he makes, along with inequality. A general "low carbon" target, however, would not fall on fertile grounds in Bogotá nor in Colombia, a city and a country so rich in hydropower, but would have to address more sectoral elements like mobility or biomass. From the "Sustainable Energy for All" dimensions, only efficiency would possibly address a real deficit, but with low political chances of being taken seriously.

Inequality. – The High-Level Panel's call for disaggregating all development data by gender, income group and "location" (United Nations 2013) obviously means, by the latter, urban vs. rural, which administratively would consider Bogotá "urban" and not disaggregate further. While the inclusivity dimension is not the special focus of this workshop, it seems however worth emphasizing that an integration of the ecological and social concerns with regard to urban structure (as reflected by the "urban sprawl", "public space" or "green area" target proposals) would strongly benefit from further inner-urban differentiation of the respective indicators, as average values do not represent the city's reality. This general remark with general relevance to the urban dimension of the post-2015 agenda (Bartlett *et al.* 2013) is especially true, for Bogotá, with regard to the overall measurement of density, which would better be reflected through a Gini coefficient of residential densities, or a gradient of "perceived density" (Eidlin 2010). While this would be rather easily done but maybe not directly conducive for policy making (as social information like the number of households would need to be added in order to know whether a densification is socially 'benign'), it is extremely relevant for indicators like green areas and public space, which might not reflect the dimension of *access* to these areas. In the Bogotan dialogue on the SDGs in August, this concern was explicitly raised, and it emerges almost automatically when looking at the city panorama.

Productivity. – Only occasional references to productivity were made during our dialogue events which had a rather socio-ecological focus. These references were linked to the profitability of certain services such as solid waste management or electricity provision, to the potential of local-regional food production, and to the losses the economy could face because of traffic jams and other infrastructure failures. When looking at the aforementioned urban development plan, a similar negligence can be detected; indicator-based references can be found almost exclusively to two areas: (a) fostering tourism and (b) support to the “popular economy” which is mainly a synonym to the informal sector. There are offering of logistics, training, special support for women, etc. (Alcaldía Mayor **2012**) – Although considering the informal sector is a crucial challenge for an urban SDG (see Background Paper N°1), it is clear, for the Bogotan case, that this does not touch bigger parts of the productive core, e. g. in offshore services, construction industry, real estate, pharmaceuticals, value added manufacturing like plastics and publishing, and so on (CCB **2008**). A GDP of 70,3 billion US-Dollar and 24 billion foreign direct investment in the past ten years (19% and 79% of the country’s total respectively when not counting FDI in oil) (CCB and Alcaldía Mayor **2012**) is of course related to activities that were either not discussed (e. g. offshore services) or criticized (e. g. building sector) during the first three dialogue tables. During the fourth, on SDGs, Central Bank co-director Carlos Gustavo Cano emphatically advocated a carbon tax which would boost reforestation and “green” industries. These industries, only casually mentioned during at the energy dialogue table, might have to be taken into consideration much more systematically.

References

- Alcaldía Mayor de Bogotá, **2010**. Densidades urbanas: El caso de Bogotá. Boletín N° 22 *Bogotá una ciudad de estadísticas*, ed. Secretaría de Planeación. Bogotá
- Alcaldía Mayor de Bogotá, **2012**. Bogotá humana. Plan de desarrollo 2012-2016. Bogotá.
- Alcaldía Mayor de Bogotá, **2013**. Bogotá se concentra. ABC de la propuesta de modificación excepcional del POT, ed. Secretaría de Planeación. Bogotá.
- Alfonso R., O. A. (ed.), **2012**. El centro tradicional de Bogotá. Valor de uso popular y patrimonio aruitectónico de la ciudad. Bogotá: Universidad Externado de Colombia.
- Andrade, G., Remolina, F. & Wiesner, D., **2013**. Assembling the pieces: A framework for the integration of multi-functional ecological main structure in the emerging urban region of Bogotá, Colombia. *Urban Ecosystems*, 1-17 Available from: <http://dx.doi.org/10.1007/s11252-013-0292-5>.
- Ardila, G., Personal interview. Bogotá, 20 February **2013**.
- Bartlett, S., Mitlin, D. & Satterthwaite, D., **2013**, *Urban Inequalities*, Response the Global Thematic Consultation on the Post-2015 Development Agenda
- Cain, A., Darido, G., Baltes, M.R., Rodríguez, P. & Barrios, J.C., **2006**. *Applicability of Bogotá’s Transmilenio BRT system to the United States*. Springfield, Virginia.
- Cámara de Comercio de Bogotá (CCB), **2008**. Análisis del comportamiento de la economía bogotana 2007. *Observatorio económico N° 28*. Bogotá
- Cámara de Comercio de Bogotá (CCB) & Alcaldía Mayor, **2012**. *Invest in Bogotá!*
- Carrizosa, J., Personal interview. Bogotá, 18 February **2013**
- Carrizosa Umaña, J., **2005**. *Desequilibrios territoriales y sostenibilidad local. Conceptos, metodologías y realidades* Bogotá: Universidad Nacional de Colombia.
- Eidlin, E., **2010**. What density doesn’t tell us about sprawl. *Access*, 37, Fall 2010, 2-9
- European Union, **2012**. *Confronting Scarcity: Managing Water, Energy and Land for Inclusive and Sustainable Growth*. Brussels
- IDEAM, **2010**. *Estudio Nacional del Agua*
- In’t Veld, R.J., **2011**. *Transgovernance. The quest for governance of sustainable development* Potsdam: IASS.

- Instituto de Estudios Urbanos & Secretaría de Hacienda, **2013**. [online].
<http://institutodeestudiosurbanos.info/endatos> [Accessed 10 October 2013].
- Instituto Latinoamericano para una sociedad y un derecho alternativos (ILSA), **2012**. *Zonas de reserva campesina. Elementos introductorios y de debate*. Bogotá.
- IPCC, **2012**. Summary for policymakers. In Field, C.B., Barros, V., Stocker, T.F., Qin, D., Dokken, D.J., Ebi, K.L., Mastrandrea, M.D., Mach, K.J., Plattner, G.-K., Allen, S.K., Tignor, M. & Midgley, P.M. eds. *Special report of working groups I and II of the Intergovernmental Panel on Climate Change*. Cambridge and New York: Cambridge University Press, 1-19.
- Nowotny, H., **2000**. Re-thinking science: From reliable to socially robust knowledge. In Nowotny, H. & Weiss, M. eds. *Jahrbuch 2000 des Collegium Helveticum*. Zürich: VDF, 221-244.
- Perdomo Calvo, J.A., Mendoza, C.A., Baquero-Ruiz, A.F. & Mendieta-Lopez, J.C., **2007**. *Study of the effect of the Transmilenio mass transit project on the value of properties in Bogotá, Colombia*.
- PNUD Colombia, **2011**. *Informe nacional de desarrollo humano 2011: Colombia rural. Razones para la esperanza*. Bogotá.
- Revi, A. & Rosenzweig, C., **2013**. *The urban opportunity: Enabling transformative and sustainable development. Background research paper submitted to the High-level Panel on the Post-2015 Agenda*.
- United Nations, **2013c**. *A new global partnership: Eradicate poverty and transform economies through sustainable development. The report of the High-level Panel of Eminent Persons on the Post-2015 Development Agenda*.