

Improving mobility in the cities centers.



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Introduction

How to recover the centers some cities that are left and deteriorated their historical center, due to the great burden commercial activities put over this urban areas? This phenomena is increased because most of the cities have a biggest number of trips concentrated on the city center.

The problem is also due to the lack of planning, it implies that the cities do not have high densities, that in turn implies that non legal neighborhoods are generated, without services and without communication, far from the central urban areas.

1 Urban Sector Review

For the Colombian national government the development of the cities is a issue for great concern. In most of the cities transport problems are evident, but the most serious problem is that in the cities people with smaller revenues are the ones who are more affected by this situation.

1.1 Basic General Data

Antecedents

In the year 2006 the Direccion Nacional de Planeacion DNP (National Directorate of Planning) carried out a planning exercise aimed to determine the general

situation of the country for that year, the result was a projection exercises called "Document 2019"; it showed how the nation would be seen the next years. Some of the concepts exposed there allow us to determine the urban vision of Colombia for that year.

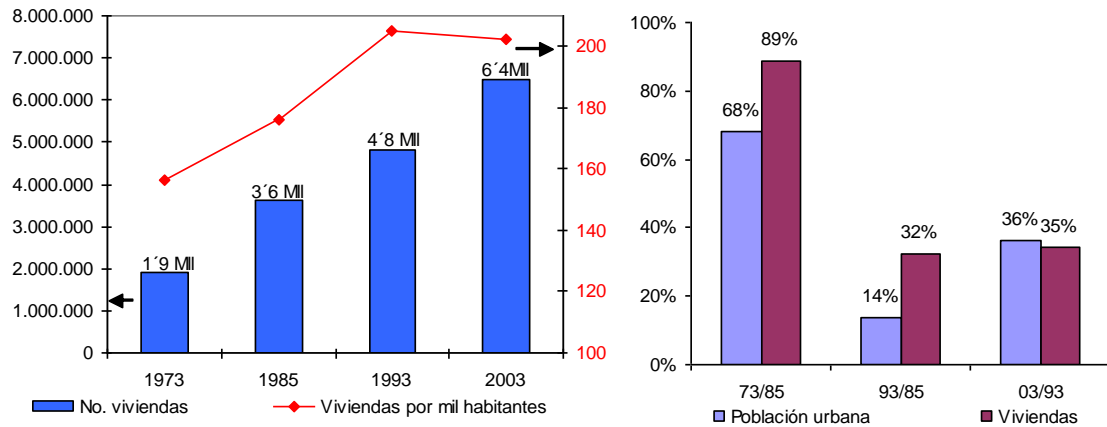
For 2019 approximately 80% the Colombian population will live in an urban area, thus important transformations will take place at economic, social and environmental level. One could say then that the future of the Colombians will depend, to a large extent on the future of its cities. The high urbanization rate of the country should be understood as a development opportunity that will demand the design of strategies centered in the cities, guarantying the improvement of the quality of its inhabitants' life and offer the best opportunities of social and economic progress.

The implementation of master's plans development has been one of the most important planning tools that have been built recently in Colombia. This plans have meant a new vision of the territory, however in the last years, there have been deficiencies in the possibility of the implementation of these plans.

In spite of having a diversified urban system composed by 38 cities of more than one hundred thousand inhabitants and different development poles, the Colombian cities share common problems related with the precarious presence of establishments, shortage of urbanizable land and public space; housing deficit and low penetration of the formal system of housing financing. In drinkable water and basic reparation dissimilar coverings are observed among regions, low level of treatment of residual waters and some institutional weaknesses in the benefit of the service. In connection with the urban transport problems of organization of the industry, oversupply and obsolescence of the self-driven park are observed.

Colombia has a over centralized urban system conformed in its highest level by Bogotá and continued by 3 cities with more than a million inhabitants (Barranquilla, Cali and Medellín); 34 intermediate cities (of more than a hundred thousand inhabitants) and the municipal heads. The diversified character of this

system makes that Colombia has an Urban Index of Primacy under among the countries of Latin America and half at international level.



Source: Visión 2019 Ciudades amables, Departamento Nacional de Planeación, 2006

For 2003 DNP is was calculated that the deficit of urban housing rised to 2, 3 million units, of which 1, 5 millions corresponded to quantitative deficit. The 56% of the homes urban Colombians are housings owners, while the potential demand of social housing has been calculated in 1,2 million dwellings. In general, it is important to stand out that the Colombian families have favourable conditions accessibility to housing because the houses prices equals 3, 8 times the annual income average of the families, inferior value to the one observed in countries of Latin America and in industrialized countries.

In Colombia, the old urban sector are known as historical centers, these were developed more or less in homogeneous way since the city was created until the XVIII century, or until the begining of the XIX century. In the cases of the medium cities the historical centers coincide with the main commercial activities; in other, it is the area of the old city including inside the current city (Bogotá, Cartagena, Tunja, etc.). The old sectors are understood as an urban sectors and their corresponding space public; in some cases they were declared heritage. These sectors have been declared National Monument according to the law 397 of 1997.

Current situation of public transport -Urban transport national program

Each Colombian government develops a plan in which proposes the strategies for the following four years, which is known as development plan, inside the plan they settle down mechanisms that look for a bigger equity, one of the proposed tools is poverty reduction. The development program includes the kind cities and the development of a good system of transport is as main tool. Inside the plan a clear relationship is shown between the transport and the harmonious development of the cities.

In the Document CONPES 3167 (CONPES is a document in which the public politics is consigned), the Nation has directed its politics of transport in promoting three different outlines for handling the cities transport systems: The outline of integrated mass transit systems - SITM- for the cities with more than 600.000 people; the strategic systems of public transportation for the cities between 600.000 and 300.000 people and the emphasis in the alternative means of transport for the cities of less than 300.000 people. The middle cities, have received the name of *kind cities*.

The principle therefore of the program of *kind cities*, it is to develop the cities integrally. Based on systems like the transport, to provide basic services like water, energy, basic reparation and telephone. Achieving equal cities will allow bigger social inclusion and to achieve a more equal and fairrer society.

The strategy of improvement of transport urban looks for a competitive structure, and for and efficient and equal cities that allow the citizens to have sure opportunities of mobility, under principles of economy and they will correspond with the necessities and planning of their territory.

The urban transport is a public service under the responsibility and managed by the local level. Approximately 70% of the inhabitants of the Colombian cities are

public transportation users and, on the average, they consume 9, 8%, 8, 1% and 5, 6% of its revenues in the payment of transport as they are of stratum 1, 2 or 3 respectively¹. However, a public transportation oversupply exists in most of Colombian cities that it overcomes 40%, what has generated congestion, low displacement speeds, high injuries in crash and contamination. This means that the sector lacks an appropriate regulation and control, due to the institutional weakness of the local governments to make this function.

In general, the medium cities present big problems of traffic and transport, due to their vocation of attracting trips toward the center and of generating others in the periphery. Contrary to the big cities, the time of displacement is not a decisive factor inside the evaluation of the projects of transport for these cities, therefore they should be considered strategies that facilitate the development and assure to the transport like main axis of the cities.

Bogotá - TransMilenio

Different projects have been developed guided to reorganize the public service of transport. In Bogotá, the circulation of some vehicles has been restricted in certain fringes of time and the project of massive transport TransMilenio was implemented.

The system TransMilenio, is a system that needs infrastructure, for they are built its stations, in which people took the service, and they are located in the center of the road. The pavements are reinforced, due to the weight of the bus, and arrival places are built at the end of the corridors called "portales". Additionally pedestrian bridges are built for the access to the stations, and it is paid before taking the service by electronic card. The operators are selected by means of contractual processes that allow the exploitation of the corridors for certain periods, eliminating the "the war of the cent" in the road.

¹ The DNP, it has made diverse studies, in the DIES, to determine the necessities of mobility in the Colombian cities, some of the figures that here are presented they correspond to diverse studies made by consultant companies in Colombia.

However this type of services doesn't seem appropriate for cities with smaller populations, the time especially is not the main variable to determine the kindness of the project to prioritize the public transportation, and the above-mentioned implies a new vision of the mobility in intermediate cities.

In the related with the transport the following characteristics can be enumerated for this type of cities: A growth of informal services, especially in some of them it is critical the proliferation of the service of the mototaxismo, high average of age of the public transportation vehicles and the absence of orderly systems of transport urban chord with the characteristics of the cities, the control lack and regulation of the traffic and the nonexistence of tools that assure a true planning of the public transportation.

The mobility in these cities has the great difficulty of the urban and rural character of the same ones and its centers are urban centers of services.

Santa Marta's city, as example of these cities, has the biggest historical center in this group of middle cities, what implies that its mobility is strongly affected by the cargo vehicles and for a great quantity of vehicles in the tourist time.



Figure 1: Public transport routes Santa Marta: 27

The previous figure shows the result of an inventory of routes, using the transcad software, it is clear that all the routes at the moment go to the downtown.

The same as in the other cities trip matrix was made, based on surveys of homes, in total they were carried out 10.600 surveys to people. Of the total of trips, the

biggest proportion is distributed in 40% in public transportation, and near 16% pedestrian trip, calls the attention especially the one near 10% of trips in motorcycle taxi. Of the total of trips that they are carried out in the city 24, 62% they are carried out for not motorized means.

The hours pick coincides with the hours pick of the other cities from 6 to 7 a.m., of 12 at 1 p.m. and of 5:45 p.m. at 6:45 p.m. and the biggest purposes of trip are the study, the home and the work, although the proportion varies along the day, the predominant way of trips is pedestrian mode, which maintains its preponderance along the day.

At the present time the public transportation service is lent by four companies, which have near 900 vehicles distributed in 57 routes around the city, of which go by downtown near 90%. The teams in general are small and their capacity is between 19 and 45 passengers.

The previous situation (common to all the intermediate cities), imposes a great land necessity to urbanize, however the center of the city have suffered big deteriorations. The uses are characterized to be commercial uses and also to have housings of low cost. However the same trade implies that during the day most of trips are carried out toward the center.

1.2 Actors and their Roles

In general, Colombia has generated a politics of decentralization. The above-mentioned implies that in general the mayors of the city are those that direct the destination of the cities. However in most of cities the resources that generate the cities are not enough to solve the problems, the above-mentioned has meant the creation of national programs of services helped from the central government.

2 Organisation

The DNP was founded in 1958; works under the Presidency of the Republic and it is at the same category with a ministry. It is a technical body that is in charge of directing, coordinating, planning service and granting the central government with all the relevant information for decisions taking. The DNP is an eminently technical entity that impels the installation of a strategic vision and the management and assignment of public investment. The DNP is divided into specialized sub bureaus that coordinate different topics; one of them is infrastructure which coordinates the assigned budget.

As part of the sector policies for transport technologies development the private sector participation has been promoted, as well as for the development of urban policies and for the establishment of systems that allow a better use of the municipalities' resources. All these projects have been financed by multilateral banks.

In the topic of urban transport the participation of the Nation is coordinated in different projects like it is that of kind cities.

3 Urban Problem

Given the difficulty of mobility in the center of the intermediate cities, becomes necessary to develop measures that allow to diminish the pressure toward downtown and to renovate it to achieve a better quality of life.

The cities should revitalize the center of their cities taking care of their historical patrimony but allowing the commercial dynamics of the cities.

You therefore should reach a strategy that allows the mobility in the centers but that equally it facilitates a classification of the city recognizing the historical patrimony that the centers represent.

4 Proposal for Change and Improvement

As general objective, to develop a strategy that allows to improve the mobility in the centers of the cities.

4.1 Performance in Centers

It is based essentially on the concept of the Center like great generator of trips, for it, the physical exchanges will concentrate on this place with stations that they integrate the pedestrian's accessibility with the means of public transportation.

In essence it is to improve the infrastructure so that the center can assist the services of trips, and it can harbor the exchanges among the different sectors of the city, the center will harbor all the modal exchanges and will become the epicenter of the services of the society.

4.2 Improvement of the signaling

One of the big challenges in the processes of mobility is to optimize the current resources with the minimum investments. In the centers, is especially critical the possibility to obtain more space for more roads, for what is necessary to make microtraffic analysis that allows the possibility to create even routes, to increase the capacity vial with the same space in some cases. It is equally necessary that the possibility exists of generating dynamic information to the users of transport or traffic, the users will be able to use the roads of smaller congestion, in alternating routes, if they are informed on time on the congestion of its route. The necessity of a dynamic signaling was already mentioned that responds before the demands of mobility. However it becomes necessary that given the scarce resource vial that exists, routes are generated controlled by traffic lights, generating “corridors” that allow to synchronize the different movements on the mesh vial.

The concept of intelligent Traffic light, responds to the variability of the daily traffic, and to the control impossibility in the road. The electronics than allows to

generate controls that give you order to the traffic lights in such a way that the system of collective transport is prioritized.

4.3 Restructuring of service of transport public

The system of current exploitation of the services of transport in Colombia, is based on unitary operations and in discreet routes that don't show planning and they suffer of oversupply. Generating processes of collect electronic it implies that unitary handlings of teams cannot be presented. In essence it consists on the handling of the whole fleet in a combined and integral way.

In essence the money won't be able to be managed individually by the driver or the proprietor of the bus, but rather he will obtain its payment of the company that gathers the money in the system.

4.4 Measures of traffic administration

In Colombia the motorization rates have increased between the 20 and 30%, in most of cities restrictions have been imposed that obey to the great quantity of particular vehicles in the road.

In Colombia it has also been notorious the increase of motorcycles like solution to the problem of transport. The low prices and the congestions have stimulated the purchase of these vehicles that they are subsidized also, what generates a great crash accident and the appearance of services pirates.

Therefore should accompany the program, of restrictive measures that it impels the user to take the public transportation. The entrance prohibition to the center, the parking restriction in the road, the possibility to use the parking ticket to take the bus, bigger tax rate to particular vehicles is some of the measures of which should accompany the assembly of these systems.

4.5 Encourage to the use of the public transportation and not motorized

Inside the studies shows that exists a great number on foot of displacements, even in some cities the number of displacements in bicycle it is something important. However in the centers of the cities the platforms are narrow and the facilities for the bicycles are scarce.

Increasing the not motorized trips means to reduce the traffic load on the mesh vial, the short trips will be able to be carried out on foot with comfort, and the bicycles will have parking facilities and storage.

4.6 Transfer terminals and creation of urban landmarks

They should settle down inside the process of organization new centers of services that concentrate the public transportation operation, but that in turn they allow developing new centralities and facilitating the processes of elimination of non necessary trips.

Essentially this strategy looks for to develop new center of service through its mobility, new services, new comforts will be achieved with the concentration of services around the point's traffic attractors.

5 Personal Action Plan

The National Program of Urban Transport, defined the possibility to finance the projects in the different cities by means of the use of the law 310 of 1996 that one has known as the law of MTR (massive transport rapid).

In this law thinks about the possibility that the Nation pays until in 70% the value of the investments in infrastructure of these projects. 30 remaining% will be able to be assumed by the local entity in this case the city or even the state or the department.

The execution of small investments with which high impacts will be obtained in the society. In particular emphasis has been made in the promotion of the use of the public transportation above the particular transport. In this sense it is looked for to generate STRATEGIC SYSTEMS OF TRANSPORTS that they assist the necessities of the population's mobilization with approaches of efficiency, quality and security, but at the same time structural changes are generated in the companies that develop the business.

For the above-mentioned it becomes necessary to help the local governments, to develop strategies that allow to consent to the resources of the Nation, for this it owes himself:

To hire the studies to develop the systems in the middle cities; 2009 December

To determine the financing sources; 2009 - June

To present policy document to the council of Ministers; 2009 - September

To begin definitive designs; September 2009 – February 2010

To coordinate with the Ministry of Transport their execution; June 2009

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Special Characters

DNP: Departamento Nacional de Planeación, National Department of Planning.
Dirección de Infraestructura y Energía Sostenible DNP (Directorate of infrastructure and sustainable energy)