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Urban Sustainability and territory: challenges faced by the metropolitan public administration in Mexico

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1. Introduction

The following main approaches converge in this essay: central aspects of sustainable development, especially sustainable urban development; governance model to achieve sustainable development and study of the main transformations of urban territories and their relationship to demographic and territorial dynamics of metropolitan cities.

Thus, the main goal is to try and establish the relationship between the complex nature of sustainable development, the contributions of the governance model and current urban processes, as well as some organizational methods from metropolitan public administration, especially in environmental an urban development areas.

The first section deals with the analysis of the main theoretical-methodological models of sustainable development. This thematic axis explores the rationalities found in said model which do not allow the achievement of sustainable development goals by acting under conflicting logics. An example of this is the rationality underlying market economy and the new rationality which contemporary environmental problems need and whose main postulate is sustainable use of environmental goods and services.

Due to the above, the main problem of sustainable development is the construction of a new rationality thanks to the integration, understanding

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and projection of the dominant logic in each of the dimensions of said paradigm.

The second analysis axis focuses on the study of the sustainability paradigm in urban development areas. From this perspective, the line of reasoning begins with

The unsustainable nature of urban centers due to their high levels of consumption of resources and environmental goods and high production of solid, liquid and gaseous residues. On the other hand, the fourth axis carries out an exploration of the main theoretical coordinates on the governance model to achieve sustainable development. This approach begin with the complex nature of sustainable development processes and picks up the main governance postulates, especially the articulation of association networks and schemes between State, market and society.

In this context, the fifth axis focuses on the analysis of new urbanization processes and their impact on urban territories' organization and functionality in order to provide some elements on the impact of metropolitan and megapolitan processes on cities' governments' and public administrations' organization, especially metropolitan and megapolitan cities. Finally, the sixth axis is dedicated to the study of environmental metropolitan public administration through demographic and territorial dynamics in the Metropolitan Area of the Valley of Mexico. The conclusions put forward some trends and perspectives on public administration for sustainable development in metropolitan cities and megalopolis.

2. Notes on the sustainable development paradigm

Theorizing on sustainable development is random and complex because of its enormous methodological and epistemological challenges. It is like sailing in troubled waters where it is difficult to set a course for the sustainability ship. This huge theoretical ocean poses the following question: how can we make it possible for this ship to arrive to safe port and sail across the troubled waters of unsustainability? According to this, it is obvious that the consolidation if said rising paradigm basically means the construction of a new rationality: a sustainability rationality. This context brings on the following question: which could be the models of this new rationality? The new rationality's central aspect will be a strictly environmental rationality developed profusely by different authors (Left, 2002). It is also important to include in this paradigm's logic economic, political and social rationality as unavoidable elements of sustainability rationality. This means the main sources of sustainability rationality are derived from this model's dimensions, application areas and principles. Thus, the following sections will analyze some of the existing literature, emphasizing those approaches which have made relevant contributions to the construction of this new rationality.

Other authors like Seghezzo think sustainable development can be theorized into five dimensions. This author states that the limitations of the traditional definition of said model can be lessened by the construction of a theoretical framework whose main coordinates are place, time and people. From this perspective, sustainable development can be seen as the triangle formed by the previous elements. "Place" means three different dimensions: physical, geographical and cultural, the latter is socially constructed place or where the main actors -people- of sustainable development processes live and interact. These "places" are a source of data, identities and behaviors whenever they incorporate cultural, lifestyle and physical and psychological notions. "Permanence" seen as a temporal dimension is the fourth element of this paradigm. On the other hand, "people" are the fifth dimension which springs for the need to correct the exclusion of people –as individual human beings and not as undifferentiated members of society- of the traditional notion of sustainable development.[1]

We agree with those writers who think that reaching a consensus on the definition of sustainable development is not only impossible, but also quite objectionable (Seghezzo, 2009). Indeed, we must add that abovementioned in not only questionable, but not functional to provide effectiveness to said development model. This is why we think that the consolidation of this paradigm lies on the study of the main dimensions and the nature of their interactions, especially from the inherent rationality of sustainable development.

From our point of view, the main problem is not determining the number of dimensions sustainability has. One of the key aspects has to do with the analysis of more or less number of sectors and the analysis of the underlying logic of each one of these dimensions and areas considered as relevant to build this new sustainability rationality.

For the purpose of this essay, we will identify procedural rationality which includes its main coordinates: uncertainty, dynamism, complexity and systems interaction and strategic actors in urban sustainable development processes.[2]

The discussion concerning thermodynamic limits focuses on substituting energy and other goods; a deteriorated environment is characterized by high presence of dissipated materials which are harmful for organisms and biological processes. The "strong sustainability" approach states that there might be other limits, at least on the macro scale, in the substitution of capital and resources and the ability to innovate to widen these limits. From another point of view, other authors seek to contextualize this debate

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[1] Seghezzo, L. (2009). "The five dimensions of sustainability", *Environmental Politics*, Vol. 18, issue. 4. p. 540 and 548.

[2] Camagni, R. (2005). *Economía urbana*. Barcelona: Antoni Bosh. p. 2008.

taking into account the fact that our limited knowledge and understanding of natural processes also limits our ability to carry out various restoration and re-concentration activities of disperse materials. In other words, relatively overcoming this restriction depends on knowledge on nature. The current uncertainty on natural processes, the concern for its long-term deterioration can be good reasons to prevent future deterioration, even capital investment in mitigation actions.[3]

Pezzey and Toman think knowledge on physical-biological processes are a source of uncertainty. In this context, the last possible restriction which has been seen in few occasions is the limited human capacity to process information. The amount and speed of acquisition of the necessary knowledge to be aware of materials and energy dissipation through the adoption of new technologies, surpasses what the human brain can achieve. This is an example of "limited rationality" formulated by Herbert Simon which could question the capacity of the neo-classical representation of comprehensive and complex maximization in perfectly foreseeable infinite time.[4]

From this perspective, the main problem to make this concept operative is the analysis of different dimensions of sustainable development, as well as the nature of interactions among these interactions. Different authors think there is a need for a new theoretical framework focused on said approach (Moreno, 2010; Gallopín, 2003). In this sense, there is also the need to establish some constitutive and operational principles of the sustainable development paradigm. The so-called operational principles are the ones which give effectiveness to said model in different application areas, including urban and metropolitan system.

One of the most recurrent problems when theorizing sustainable development and sustainability is the predominance of one-dimensional visions. In other words, there are approaches which emphasize ecological dimension, whereas other lines of discussion state social or economic dimension are more important. So the theoretical position of systems theory becomes fundamentally important. Sustainability seen from a socio-ecological perspective means an analytical approach focused on strong connections between society and nature. Thus, the socio-ecological system is made up by a social (subsystem) factor (or human) which interacts with an ecological (or biophysical) factor, it includes different time and space scales.[5]

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[3] Pezzey, J. & Toman, M. A. (2002). The Economics of Sustainability: A Review of Journal Articles. Washington: Resources for the future. p. 67-68.

[4] Idem.

[5] Gallopín, G. (2003). *Sostenibilidad y desarrollo Sostenible: un enfoque sistémico*. Santiago de Chile: CEPAL. p. 15.

The aforementioned author states that the following are fundamental attributes of socio-ecological systems: resource availability, adaptability and flexibility, homeostasis and responsiveness. If the latter is combined with the "ability to change strategy according to circumstances" it can be linked to adaptability and homeostasis of socio-ecological systems; two main elements stand out:

a) Self-reliance.- refers to the socio-ecological system's ability to regulate its interactions with other systems.
b) Empowering.- this characteristic refers not only to the socio-ecological system's ability to respond to change, but also innovate and induce change in other systems for its own ends and functionality. "It is important to note that this characteristic can be specifically used in the human subsystem, but not the ecological one".[6]

From this perspective, it is interesting to know that the human subsystem is made up by different systems: social, economic, cultural and political. This complexity conditions the possibilities of an effective performance in sustainability areas.

It is also important to note that the traditional idea of sustainable development has serious limitations to give the paradigm some effectiveness. The same problem can be found in the urban sustainability area. We have stated in other studies that this is a congenital limitation, it is born from the pioneer formulation of the institutional area: the one developed by the Brundtland Commission (1987).

3. Urban sustainability

Páez García thinks the most important issue of urban unsustainability is derived from the fact that:

"A city by definition is unsustainable. Sustainability is something temporary, it depends on the energy and ability organizations have to solve their survival-related problems. The growth of urban systems has gone hand in hand with growth of quality of energy sources, reduction of said energy quality makes us think that the scale of complexity achieved by every urban settlement –from a metropolitan area of over 10 million inhabitants to a small city of less than 20,000 inhabitants- needs to be reduced. The reduction or adaptation of complexity or simplification will be expressed in settlement pattern, territorial occupation, use of resources, residue disposal and of course, energy demand".[7] Urban systems truly have a high degree of unsustainability. Nonetheless, this does not mean there cannot

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[6] Ibid, p. 20.

[7] Páez, A. (2009). *Sostenibilidad urbana y transición energética: un desafío institucional* (thesis). Mexico: Universidad Nacional Autónoma de México. p. 84.

be proposals for urban sustainability. From this perspective the author's opinion is debatable. The essence of sustainability can be found in long-term horizon that includes the inter-generational relationship between the present and future generations. Maybe it is more convenient to speak of degrees of urban sustainability as a way of planning and measuring quantitative and qualitative approximation of sustainability in urban areas.

It is well-known that cities create growing environmental tensions as a result of the pressure urban systems exercise over environmental goods and services (water, land, raw materials, food, air, energy, etc.) of urban, suburban and rural territory; pollution derived from discharging residues to the natural environment (land, water, atmosphere) or by the expansion of infrastructures and buildings which create the almost irreversible occupation of land which sometimes have great environmental value.[8]

The aformentioned leads us to Camagni's words:

> "…urban sustaintability's model should not be an earthly paradise of ecobiological balance or a city ideally designed…, but a multidimensional archetype, a simplified one, where different functions of a city can be recognized –provision of agglomeration and proximity, accessibility economies and social interaction and network integration with the outside world- and achieving maximum collective wellbeing by positive dynamic-procedural integration (co-evolution) between the natural environment, built environment and cultural heritage, economy (occupation) and society".[9]

Speaking of urban sustainability means, among other things, developing new ways of thinking of cities. In this sense, we can state that the establishment of new action guidelines is urgent to help cities maintain their natural capital on the long run; that is, make them sustainable to certain degree. In this sense, it is also important to recognize that traditional approaches are insufficient to collect and analyze the interdependence between urban society, economic development and the environment. Even though cities affect natural systems beyond their physical limits, "interdependence between urban systems and regional and global environment" is not reflected in urban policies.[10]

Thus, the construction of a new theoretical framework to study these interactions must consider three elements:

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[8] Yábar, A. (2007). "Cambio climático, ordenación del territorio y sostenibilidad urbana en España" *Observatorio Medioambiental*. vol. 10.

[9] Camagni (op. cit.) p. 205.

[10] Alberti, M. (1996). "Measuring urban sustainability". *Environmental Impact Assessment Review*. Issue 16, p. 381. New York.

a) Key variables to describe urban and environmental systems and their interrelationships;
b) Measures and criteria to evaluate model interrelationships;
c) Feedback mechanisms to evaluate systems' operation to generate solutions for urban individual and institutional communities.[11]

It is also important to give fair warning that there is no consensus on the definition of sustainability. This also happens with the concept of urban sustainability. The definition depends on the analyzed dimension. We also consider important to start from an approach which studies the interactions between urban systems, systems, environmental processes, as well as economic, social and political structure.

Thus, our first idea is that a city is intrinsically unsustainable. In other words, the sustainability of urban systems becomes impossible without a sustainable demand for environmental goods and services in global and regional areas: "Interdependence between cities and global environment means that if cities achieve local sustainability, this will not mean they will be globally [and regionally] sustainable. In fact, cities can achieve a nice environmental condition in the short term but make an unsustainable demand of natural resources someplace and export residues to other regions".[12] From this perspective, three conditions are needed to take a city into sustainability: Firstly, the adoption of the best available technology to minimize environmental impact on urban systems; secondly, assume this city has exceeded its territory's maximum carrying capacity and it imports carrying capacity from other regions and bases its ecological support on these regions; thirdly, this city needs to compensate the import of environmental goods and services through the subtraction of capacity and ecological production of other regions and the exportation of waste to these territories.[13]

This assertion takes us to the following reflection: in the last couple of days there has been a growing interest in regions as places of action for sustainable development. This regional approach includes regional strategies of management and conservation of natural resources, acknowledging the need to study species, habitats and interrelationships between different types of habitat, flows of natural, social and economic processes through jurisdictional borders. These social and ecological interdependences bring about the need to have regional analysis frameworks for sustainable development, including the identification on a regional scale of jurisdictions which reflects the community of interests and interactions and management of consequences. Thus, the latter also means systematic identification of the most important regions for

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[11] Ibid, p. 382.
[12] Ibid, p. 383.
[13] Ibid, p. 384.

environmental governance and effective and efficient management of the environment for sustainability.[14]

From this perspective, territory is seen as space where social, economic and environmental management relationships take place with the national and international institutional framework. The following question ensues: is it necessary to rethink the territory-environment relationship? Or better yet, is it necessary to rethink the territory-sustainable development relationship? The answer seems to be positive; the 21st Agenda (1992) put forward the need to have local sustainable development.[15]

4. Governance to achieve sustainable development

It is important to note the diversity of governance approaches. Due to the nature of this essay we will only mention some of the most common and important elements of said approach:

"The adoption of the concept of governance as an instrument to collectively define goals has different implications on the role played by [public] administration. In descriptive terms, turning to governance means the government is no longer part of a hierarchical and organizing State which rules based on its own authority and becomes part of a facilitator State".[16]

The main contribution of the governance model is the ability to articulate civil society networks and market to increase the ability to solve public problems in areas or zones where said institutions interact. This model includes the implementation of creative forms of institutional design through the participation of non-government actors, but acknowledging the central role the government has in policies process.[17]

The substance of the governance model has an evaluative dimension (teleological) and a factual one (causal technical). On the one hand it is the process to define the desired social future: social agenda (social goals). On the other hand, it is the process to define how work will be divided, how authority will be distributed among state, social and economic agents (formulation of laws, public policies, budget, etc.). From this perspective,

[14] Stratford, E., Davidson, J., Lockwood, M., Griffith, R. & Curtis, A. (2007). "Sustainable development and good governance: the 'big ideas' influencing Australian NRM", Report No. 3 of the project pathways to good practice in regional NRM governance. University of Tasmania. p. 14 y 15.

[15] Roble, M. (2011). "La necesidad de repensar la relación territorio y ambiente. Una introducción a la aproximación metodológica". Territorio y ambiente: aproximaciones metodológicas. Mexico: siglo veintiuno editores. p. 7 y 11.

[16] Peters, B. G. (2004). "Cambios en la naturaleza de la administración pública: de las preguntas sencillas a las respuestas difíciles" in Pardo, M. C. (Comp.) *De la administración pública a la gobernanza*. Mexico: El Colegio de México. p. 85.

[17] Ibid, p. 95.

governance is a process to direct society and is based on principles, rules, procedures and practices to collectively decide common goals.[18]

Consequently, "governance is an institutional technical structured process" in the definition and conduction of society. Thus, "governance is a great process which encompasses government action and limits (organizes, structures) governmental exercise: its roles, powers, instruments and scope, the way it manages itself and others".[19]

To transition unto sustainable development we have the following theoretical bases and basic principles:

- Consider simultaneously different fields (multi-field), different scale levels (multilevel) and different system states (multiphase).
- Adopt a long-term perspective (25 years or more) as framework to short-term actions.
- Have an approach focused on the intervention of dozens of actors.
- Use retrospective analysis to reconcile uncertainty and plan the unexpected
- Focus on social learning through the learning-by-doing and doing-by-learning.[20]

From the governance perspective, current disagreements are an essential part of sustainable development; however, they complicate and limit said model's effectiveness: there are different sustainable development ideas for different actors and sectors (energy, transportation, agriculture, food systems, and residues). Sustainable development requires technology, institutions and lines of thought. Sustainable development needs greater capacity for reflection and an adaptation framework to formulate instrumentation options. To avoid regrettable and disappointing results, development policies must have a natural evaluation and adaptation capacity based on reflexive direction and government systems focused on continuous learning for policy processes instead of being focused on control to achieve and maximize some results.[21]

Sustainable development requires reflexiveness. The approach which favors reflexive governance is transition management which has the following elements:

[18] Aguilar, L. F. (2009). *Gobernanza y gestión pública*. Mexico: Fondo de Cultura Económica. p. 90 and 91.

[19] Ibid, p. 93.

[20] Loorbach, A. (n/d). "Governance for sustainability". *Sustainability: Science, Practice, & Policy*, volume 3, Issue 2, p. 2.

[21] Kemp, R. & Martens, P. (n/d). "Sustainable development: how to manage something that is subjective and never can be achieved?". *Sustainability: Science, Practice, & Policy*, volume 3, Issue 2, p. 10.

- Development of sustainability visions and establishment of goals to achieve sustainable societies.
- Design of transition agendas towards sustainability.
- Creation, organization and development of transition areas (for innovative actors) and normal politics areas.
- The use of transition experiments and programs for an innovative system.
- Monitoring and evaluation of transition process.
- Creation and maintenance of public support.
- Use of learning goals and trust in learning and adaptation circles.[22]

It is true that the transition management concept is a governance approach based on different lines of thought regarding governance and political studies; however, its comprehensive character, its explicit connection to systems theories and complexity and its explicit use of sustainable development as its main guide make it a new governance approach. The basic philosophy underlying transition management is that anticipation and adaptation used as essential elements of sustainable development come from a macro-vision of sustainability, taking advantage of micro-level initiatives which affect the meso-regime. Thus, the rationality which supports this approach is fundamentally different from approaches based solely on government or market action. Therefore, transition management can be seen as a new community governance proposal or an area between government and market which opens the door to long-term reflection, innovation, social learning and the strategic formulation of collective sustainability goals. From this perspective, transition management is a new governance concept which combines the strengths of top-down and bottom-up approaches without become hierarchical and strict or too free-floating. [23]

In this context it is important to repeat that transition management is based on the preexisting elements of existing theories:

a) Formulation of policies for different actors.
b) Long-term policies, collective goals, adjustment and anticipation.
c) Construction of agendas.
d) Experimentation and innovation.
e) Evaluation, adaptation and reflexiveness.
f) Divulgation of knowledge and learning.

From this perspective, the conceptual framework of transition management distinguishes different types of activities related to the abstraction of the problem, timeline and the system's appropriate level. Therefore, specific

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[22] Ibíd, p. 10 y 11.

[23] Loorbach, A. (2007). *Transition Management. New mode of governance for sustainable development*. Utrecht: International books. p. 79, 82 and 84.

contributions of transition management are strategy, tactic and operation of governance activities.[24]

5. New urbanization processes: transmutation and new features of territory and space

The first decade of the 21st century has been witness of dramatic social, economic, technological and political change. It is true that these changes had their origin in the last decades of the 20th century; the changes have been accelerated in the last couple of years and are based on economic globalization and scientific and technological revolution, making the emergence of Information and Communications Technologies (ICT).

In this context, the emergence of the postindustrial society has promoted new worldwide urbanization processes in highly industrialized countries and emerging nations. The result is a postmodern, post-fordiand and post-keynesian metropolis; these post-metropolitan transition has moved forward with different rhythms and depths in the planet's diverse regions. Nonetheless, everyone agrees that current urban transformation has been the most dramatic in the world's urbanization history; it is also possible to pinpoint the existence of a transition between the modern metropolis and the postmodern metropolis which could lead us to a new urban revolution.[25]

The new era of information has created the so-called hyperreality. Persuasive networks of virtual reality, artificial intelligence, netscapes, cyber-space communications and digital communities seem to evaporate the solid materialities of urban space. This brings on two phenomena known as deterritorialization and reterritorialization. The first one refers to the growing weakness of ties to places; that is, communities and cultures which have been territorially defined and include homes, neighborhoods and towns or cities, metropolis, region and Nation State. However, reterritorialization has created new ways and combinations of territorial identity and social space. Thus, postmetropolitan transition can also be described as an implosion and explosion of the forms of contemporary cities.[26]

This change in classification forms of urban centers has had different ones: conurbation, metropolitan area, metropolitan region, megacity and megalopolis. In sum, modern transformations of metropolis can be understood as a construction process of space forms thanks to successive leaps in organization:

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[24] Ibíd, 88 and 103.

[25] Soja, E. (2008). *Postmetrópolis: Estudios críticos sobre las ciudades y las regiones*. Madrid: Traficantes de Sueños. p. 220.

[26] Ibíd, p. 223 and 224.

- The creation of metropolitan areas which meant pushing the limits of the continuous and compact traditional city.
- Polinuclear city-region which refers to the widening of interaction forms and overcoming the simple dependence relationship of metropolitan nucleuses.
- Post-metropolitan territory which begins the fractal organization of territory made up of great supra-regional development axes.[27]

In this context, mega-city is territorial demonstration of great concentration of population in urban areas. Different quantitative and qualitative definitions of mega-cities have been put forward. The United Nations defines mega-cities as urban centers with more than 8 million inhabitants and an additional criteria of spatial concentration: demographic density of 2000 inhabitants per square kilometer.[28]

Another concept used to refer to great spaces which result from adding great cities to the Megalopolis which means combination of metropolitan areas, its expansion leads to the integration of other metropolitan regions.[29] These changes in social, economic and technological structure make it necessary to re-conceptualize new urbanization processes.

According to Ascher (2007), the third urban revolution is characterized by 5 important changes: metapolizaton, transformation of urban mobility systems, creation of individual space-times, redefinition of the relationships between individual, collective and general interests and new risk relationships. This essay will focus on the first element. Metapolization has a double metropolization and deformation process of new types of urban territories: the so-called "metapolis". From this perspective, metropolization is an attempt to concentrate human and material riches within the most important agglomerations; it relies more and more on the development of means of transportation and storage of goods, information and people and ICTs. This process gives birth to the metapolis; that is, huge, extensive and discontinuous, heterogeneous and multipolarized conurbations. This process's consequence is that limits and physical and social differences between the country and the city are more and more imprecise; a "dilation" of urban territories into rural ones happens. This poses very important questions: what should we do with the notion of limits? How should we conceive space when differences between urban and rural become diffused?[30]

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[27] Ezquiaga, J.M. (n/d). "La condición contemporánea del espacio urbano", Temas para el debate, No. 185, p. 191.

[28] Olcina, J. (n/d). "Megaciudades: espacios de relación, contradicción, conflicto y riesgo". Investigaciones geográficas, No. 54, p. 177.

[29] Ibid, p. 178.

[30] Ascher, F. (2007). *Los nuevos principios del urbanismo*. Madrid: Alianza Editorial, second edition. p. 56 and 57.

From this perspective it would also be interesting to ask ourselves this: what is the impact of metapolization on government organization and operation and public administration of the territorial matrix?

6. Demographic dynamics and public administration challenges for sustainable urban development in Mexico

Mexico is a predominantly urban and metropolitan country. The results of the 2010 Population and Housing Census, CONAPO (Spanish: National Population Council) established the existence of 59 metropolitan areas where 63.8 million people live; that is, 56.8% of the national population lives in 367 metropolitan municipalities and delegations of the Federal District.[31]

On the other hand, the dynamics of Mexican cities can be associated to five strategic urban sustainable development vectors: population, employment, water, traditional basic services (electricity, drinking water and sewage) and basic modern services (computers, Internet and cellphones).[32]

The environmental sustainability agenda for the Metropolitan Area of the Valley of Mexico adopted as transversal axis Climatic Change, directly linking it to urgent environmental issues (solid, water, air residues and land use). This thematic framework foresees the integration of mitigation and adaptation actions to climatic change in air quality management, urban solid residues management, supply and sustainable management of urban use water and regulation of land use.[33]

The metropolitan approach allows us to influence the definition of environmental policies with broader territorial character: regional. Under this line of thinking, the Agenda affects the regional development (Federal District, State of Mexico and Hidalgo) and implementation of the Special Climate Change Program (PECC; Spanish: Programa Especial de Cambio Climático) of the Federal Government.[34]

Two mechanisms are established to develop institutional capacities for the integration and implementation of the Environmental Agenda:

[31] National Population Council. (n/d) *Delimitación de las zonas metropolitanas de México 2010*. Mexico: CONAPO, INEGI, p. 14.

[32] Garrocho, C. (2013). *Dinámica de las ciudades de México en el siglo XXI. Cinco vectores clave para el desarrollo sostenible*. Mexico: El Colegio Mexiquense, CONAPO. p. 23.

[33] Metropolitan Environmental Commission. (2010). *Agenda de Sustentabilidad Ambiental para la Zona Metropolitana del Valle de México*. Mexico. p. 8.

[34] Idem.

For the Metropolitan Area of the Valley of Mexico and the participation of the State of Mexico, Hidalgo, the Federal District and the federal government, the following coordination agencies have been constituted:

- Metropolitan Area Water and Sewerage Commission (CADAM; Spanish: Comisión de Agua y Drenaje del Área Metropolitana), 1994;
- Commission for Transport and Highway Administration (COMETRAVI; Spanish: Comisión Metropolitana de Transporte y Vialidad), 1994;
- Metropolitan Public Safety Commission and Law Enforcement (Spanish: Comisión Metropolitana de Seguridad Pública y Procuración de Justicia), 1994;
- Metropolitan Commission for Human Settlements (COMETAH; Spanish: Comisión Metropolitana de Asentamientos Humanos), 1995;
- Metropolitan Environmental Commission (CAM; Spanish: Comisión Ambiental Metropolitana), 1996;
- Metropolitan Commission for Civil Protection (Spanish: Comisión Metropolitana de Protección Civil) 2000, and
- Metropolitan Coordination Executive Committee (Spanish: Comisión Ejecutiva de Coordinación Metropolitana), 2000.

a) Metropolitan Environmental Commission

On January 8th 1992, the Official Journal of the Federation published the Presidential Decree which authorized the creation of the Commission for the Prevention and Control of Air Pollution in the Metropolitan Area of the Valley of Mexico (Spanish: Comisión para la Prevención y Control de la Contaminación Ambiental en la Zona Metropolitana del Valle de México). This Commission was in charge of defining and coordinating policies, programs and actions against environmental pollution in agencies and bodies of the federal public administration of the Metropolitan Area of the Valley of Mexico.

On September 13th 1996 an agreement was signed by the federal government –the Federal District Department (DDF; Spanish: Departamento del Distrito Federal)- and the government of the State of Mexico and on September 17th 1996, the Official Journal of the Federation published the agreement to create the Metropolitan Environmental Commission (CAM). Thus, CAM is a coordination agency to plan and execute environmental protection, preservation and restoration of ecological balance actions in the conurbated area bordering the Federal District Several days ago, the President, governors of six states, the Head of Government of the Federal District announced the creation of the Environmental Commission for the Megalopolis (CAME; Spanish: Comisión Ambiental de la Megalópolis) to

substitute the Metropolitan Environmental Commission. CAME will be in charge of the central region made up of 16 delegations of the Federal District and 224 municipalities:

- 16 political delegations of the Federal District.
- 80 municipalities of the State of Mexico.
- 29 municipalities of Hidalgo.
- 33 municipalities of Morelos.
- 22 municipalities of Puebla.
- 60 municipalities of Tlaxcala.

This Commission intends to improve articulation of environmental policies in regional urban areas, including policies to standardize vehicular verification systems, equipment and levels to enact environmental contingencies in the Megalopolis.[35]

b) Expansion of the metropolitan area in the Valley of Mexico.

The City of Mexico and its metropolitan area are characterized by a demographic dynamic and transformations in territorial expansion from the city to the periphery. Recent history uses Metropolitan Area of Mexico City, Metropolitan Area of the Valley of Mexico concepts and most recently Megalopolis of the central region made up of metropolitan areas of Pachuca, Toluca, Cuernavaca, Puebla and Tlaxcala; all of which are associated to the expansion process of the central City.[36]

Acoording to the agreement to constitute the Metropolitan Environmental Commission, Mexico City's conurbated area is made up by 16 delegations of the Federal District and 18 municipalities of the State of Mexico.

Om January 23rd 2006 a Declaration was published in the Journal of the Government of the State of Mexico stating that the State of Mexico's and the Federal District's governments decided that the Metropolitan Area of the Valley of Mexico would be formed by 16 delegations of the Federal District and 59 municipalities of the State of Mexico. From this perspective, this declaration states that the Metropolitan Area of the Valley of Mexico is an instrument to unify, conceptualize and integrate common metropolitan plans, programs and actions in a harmonious and coordinated manner. On June 17th 2008, the State of Mexico, the Federal District and the State of Hidalgo signed the first declaration to widen territorial planning and

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[35] Presidency of the Republic. Retrieved on August 25th 2013 from http://www. presidencia.gob.mx.

[36] Esquivel, M. T., Flores, R. & Ponce, G. (2006). "Dinámica demográfica y espacial de la Zona Metropolitana del Valle de México" Espacios Metropolitanos 2. Población, planeación y políticas de gobierno. Mexico: Red Nacional de Investigación Urbana. p. 17.

study of the Metropolitan Area of the Valley of Mexico (ZMVM) and 29 municipalities of the State of Hidalgo were added to it.

7. Conclusions

The sustainable development paradigm has serious limitations in its implementation in several areas, including cities. A strategy used is an approached based on interactions between urban systems and those located beyond urban territory. This means the opportunities to achieve sustainable urban development depend on regional, national and global relationships established with socioeconomic and natural systems.

Nonetheless, achieving urban development requires new institutional framework, including government and public administration; especially those of metropolitan cities and megapolitan cities. The emergence of new public administration approaches makes the governance model have some essential elements to promote the emergence of new organizational and operational forms to achieve sustainable societies.

In this context, the first goal is to achieve sustainable development in all areas, including urban development. This also requires taking into account cities' transformations, especially in megalopolis, because of the impact of ICTs.

The administration of Mexican metropolitan areas is basically based on mechanisms associated to intergovernmental coordination, especially in urban planning areas which is not enough to achieve goals related to sustainable development. The Metropolitan Area of the Valley of Mexico shows some of the limitations and malfunctions of institutions in charge of coordinating demands elated to sustainable development.

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