

THE TERRITORIAL ORDERING IN THE METROPOLITAN AREA OF SOUTH-CENTRAL CALDAS IN THE CONTEXT OF CLIMATE CHANGE

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1. Introduction

The omnipresence of a certain point of view is not a sign of excellence or that the truth has been found but a failure of the reason to look for alternatives.

Paul Feyerabend, *Against the Method*, 1970

1.1. A territory with history. The determinants of experience in public policy oriented to land use with bases for altitudinal planning

This work is influenced by historical research on intelligence in the twentieth century done by the writer and historian Peter Watson, by reflections on the sciences of climate, land, territory and spiritual interpretation as a way out of the environmental damage. It was written by Mario Mejía Gutiérrez – a scientist of organic agriculture, a cultivator of harmonious relations with nature, a follower of the philosophy of non-consumerism to establish a dignified, productive life, without the shame of having lived it.

Engaging in territorial studies requires multiple disciplines and an effort of analysis in the history of culture, in economic evaluations, in the considerations of entrepreneurs of colonization and occupation of spaces to evolve in projects of urban and rural relations, in the international insertions, in the demand for institutional and government guidelines.

In a country so far from science and scientific knowledge, still subjected to great inequalities and hateful discrimination, getting involved in the sciences of the territory to explain the evolution of the territorial occupation is risky due to the dominance of discourses coming from an intellectual and political circles, which do deep damage to the search for pragmatic and useful solutions to the various problems of the current national situation. Academic experience obliges us to be loyal with the sincerity and frankness that the moment of

conducting the actions of the governments of the territorial entities that have been constitutionally created demands.

He says (Watson, 2014): “the engine of social evolution is science and it has two philosophical consequences in the twentieth century; the first is the technology that has given the individual greater freedom in many aspects of life, but it has also produced alienation and weariness. The second is the rapid change in concepts of science and the arts, which are cumulative areas that nest imagination, creativity, innovation, the world of the so called intuitive”.

Mario Mejia places us on the pathways of what pre-scientific is, that is, the indigenous ancestry that concerns us in the contexts of the diversity of ecosystems in the equatorial tropics, on the paths of what is scientific-experimental and on the outputs in front of the imprecision and uncertainty, in contexts of climate change, in the irreparable damage to mother earth, referring to the possibilities in the recovery of values of solidarity, spirituality, intellectuality and respect for nature by understanding this in peaceful coexistence with her, as a whole.

Earth sciences today start from the convergences of physics, biology, chemistry, architecture, mathematics, geology, archeology, paleontology, medicine and philosophical reflection on the ways of generating public policy and also pluralistic and inclusive government shaping. The earth sciences contain and derive the understanding of the knowledge applied to the explanation of the territorial ordering to allow human life in a peaceful and harmonious relationship with nature. Produce for a good lifestyle, eat healthy food to maintain a healthy and active life in all aspects and also educate yourselves to launch decent projects in housing, recreation and artistic creation. Access productivity away from consumerism that kills, poisons and enslaves us. Be competitive in civic cooperation institutionality with mutual advantages, in providing timely justice and equality plans before the norms.

Manizales and its surroundings, the municipalities that attempt a formula of regional association, are the result of an intersection of roads in the commerce of the late nineteenth century; it is the settlement that supplied colonies with coffee, in the exchanges between miners of Marmato and the food producers who, with hard effort, farmed the land where they could survive. Territories and forced sites in transit and deployment of the armies in civil wars, a Catholic population, emboldened by values of honesty, work, savings, family creation, capable of taking a place of residence away from the hillside. This is also to contemplate sunsets, to enjoy a “sunset factory”, as the poet Pablo Neruda called it when he visited it in the 1960s, at the International Theater Festival, when from the lookout of Chipre he observed the majestic paintings, in the mauve color, in the mountains of the western mountain range against the Tatamá hill. It is also a viewpoint of the snowy area of the central mountain range, the Ruiz, Santa Isabel, Paramillo de Santa Rosa. It is therefore a dimension of geography in the verticality of the territorial use that the indigenous people used for agriculture, subsistence, and the dimensions of religious beliefs.

The discussions into which the multifaceted criticism of the efficiency of the modern state has introduced us, have triggered in our Colombian nation constitutional modifications of a modern qualitative order such as pluralism, citizen participation, local activism to develop the regions with the popular election of leaders and the programmatic vote concretized in local and territorial development plans.

The colonizers, the founders, the occupants of the territory came from Antioquia, from the populations that embodied the spirit of rent seeking, based on productive items that combined mining, agriculture, commerce, and the exploitation of mines.

The myth of the entrepreneurial capacity of the *paisa*¹ became a paradigm in the settlement of the hillside region, from Aguadas, full of water resources and filigree hat crafts, to Manizales and the borders of Valle del Cauca. From Samaná and Pennsylvania, bordering the limits of Tolima Grande, passing through Manzanares in the landscapes of the wild mountain range, of threatening deep gorges in abysses, in the steepness of the hills that culminate at Paramo de Letras. The sense for business of the residents of Aránzazu, the Colombian Phoenicians, as the lawyer and sociologist Antonio Mejía Gutiérrez quoted them, is proverbial. The aesthetic constructive capacity of the Salamineños, is considered a Colombian architectural heritage, the embryo of the coffee cultural landscape. Salamina, the city of light, also influenced the formation of Manizales, by poetic inspiration, the quality of its jurists, the exquisiteness of its writers, the wisdom of its doctors, the deep-rooted Catholic, Apostolic and Roman belief of enterprising priests, ships in the difficult tide of occupation.

This colonization and trade enclave is understood in the cycles of territorial occupation, first by indigenous people with well-developed political, social, religious, military structures in managing connections of varied altitudinal region, in diversified agriculture, in devotion to natural features of impressive topographical vigor and beauty amalgamated in lagoons, snows, streams, waterfalls, sulfur waters, forests of arboreal diversity, in ferns, in orchids, in thickets, in *frailejones*² and the shelter of fauna of deer, agoutis, rabbits, armadillos, pigeons, birds and birds of beauty in plumage and song. The productive occupation of *mestizos* is mainly of coffee cultivation. The development of light industry is a phenomenon of notable innovative effort.

¹ Paisa is a region in the northwest of Colombia formed by the departments of Antioquia, Caldas, Risaralda and Quindío. Some regions of Valle del Cauca Department (north) and Tolima Department (west) culturally identify as paisas. The main cities of the Paisa region are Medellín, Pereira, Manizales and Armenia. A paisa or paisano is someone from this region too, especially from the part of the Andes in Colombia (editorial note).

² Frailejones – *Espeletia* sp. is a genus of perennial subshrubs. Those plants grow at high altitude in páramo ecosystem in the Andes of Colombia, Ecuador, Peru and Venezuela. They are dominant and characteristic plants in páramo, endangered due to destruction for agricultural purposes (editorial note).

In the twentieth century Cundi-Boyacense colonized the cold land, from Aguadas and Salamina in San Félix and Marulanda started breeding cattle. Thus, the cold lands that were not occupied in the *paisa* spirit offered the possibility to Cundinamarqueses and Boyacenses to resume a productive inclusion work with the planting of potatoes and the management of Norman cattle. The beautiful flat slopes at an altitude above 2,600 meters above sea level, were used more to burn the native forest and turn it into lumber and charcoal for domestic use, than to find food and a route for endeavors of great territorial value.

It is not a territory free of social conflicts, especially those related to land tenure. “Colonists in southern Antioquia had frequent clashes with the owners of concessions, and one of the owners of the Aranzazu concession, Elías González, was shot to death in the 1840s”... the expulsion of colonists who occupied titled land used to occur in the whole country from the mid-nineteenth century, sometimes with burning of crops and houses by the owners, with the help of local authorities, such as those described in the novel *Risaralda*, by Bernardo Arias Trujillo (Melo, 2018, p. 157).

1.2. Environmental concern, climate change. Environments in the evolved occupation. The essentials of the phenomenon, from the ancestral mode to the technological innovation in the ways of life and territorial occupation

Knowledge of the annual course of atmospheric weather, which we call climate, is susceptible to approximately three ways of explaining Nature to us. The ancestral, pre-scientific mode knew and knows that the climate is cyclical. Western linear culture has a hard time being cyclical. Thus, at the latitude and orography of Manizales, two wet trends per year usually occur, interspersed with two dry trends. It is said that it is bimodal climate. Landslides in Manizales have occurred in every rainy season.

The scientific mode explains that climate is a global atmospheric-thermodynamic expression that is the effect of the distribution of solar heat on the terrestrial globe, which consists symmetrically of two hemispheres: northern and southern. From this symmetry the cyclicity of the climate originates. In each of Hadley’s cells the climate is typically expressed with recognizable physiognomy in macro terms. The post-scientific mode, with its principle of imprecision, helps us imagine a process that occurs in gaseous space; imprecise, chaotic³, where multiple variables intervene.

1.3. The phenomenon. Territorial planning and environmental governance in the south-central area of Caldas

But, in any case, it is a physical phenomenon, predictable with a certain degree of imprecision, but also with a certain degree of confidence. The rainy trend

³ Bunyard’s data (2010).

of the first half of the year at latitudes and topographies similar to Manizales is known to come from the south, from the summer of the southern hemisphere. The rainy trend of the second half of the year comes from the north, from the summer of the northern hemisphere. “Anomalies” that occur after the middle of the year in Central America are indicative. Mountain ranges in the meridian direction, the Andes, cause equatorial, trade winds, called Colombian or Kenyan, bimodal in their annual trend. Mountain ranges in the sense of parallels, the Himalayas, cause monsoonal, monomodal⁴ climates in their annual trend. The ignorance of public administration officials disguises it as fatal, “natural” and unpredictable.

2. Methodology

The research question: How to interpret environmental governance in the inclusion of an organizational instrument that will determine the allocation of resources to deal especially with territorial change in climate change?

The action research is supported by community panels, experts and authorities on the political proposal of a metropolitan area, which involves territorial planning and organization in the face of climate change.

3. Theoretical framework

“The growth of cities and associated phenomena such as the conurbation and commutation of citizens seeking access to goods and services are constantly in tension with the aim of maintaining healthy ecosystems that are capable of maintaining the well-being of societies through the services they provide. At the local and regional scale, urbanization fragments, the habitat for species, degrades ecosystem processes, modifies the natural distribution regimes of species” (Liu and Wu, 2016), “facilitates habitats that are occupied by biological communities in which exotic species stand out” (McKinney, 2002), “degrades the quality of surface waters and exposes soils to further erosion” (Teixeira and Marques, 2014).

In the case of the Central-South region, thanks to its location on an extensive altitudinal gradient on the western slope of the central mountain range there is a great variety of ecosystems. Such ecosystems have been subject to a strong transformation regime that is evident in the large proportion that agro/ecosystems occupy in the region. Seventy percent of the Central-South

⁴ The monsoon climate is a variable of the tropical climate that presents many complications in matters of detail but has as a fundamental and constant character that of a wind of land and another of sea succeeding regularly and forming like a gigantic breeze, which is known as winter monsoon (land) and summer monsoon (sea). Electronic document, www.titulaciongeografia-sevilla.es/ (access: 2.06.2020).

region is occupied by these ecosystems, mainly in spaces where previously the tropical dry forest and the Andean forests dominated. “On a national scale, the latter have been particularly affected in the dynamics of transformation of the landscape starting at 1800 meters above sea level, with approximately eight percent and forty percent of the original coverage remaining, respectively” (Etter and Possingham, 2008; and Etter, García, Isaacs and Corzo, 2014).

Based on the dramatic reduction of forest cover at the national level, it is worth stopping to examine the dynamics of transformation of Andean and dry forests in the region, as well as the proposed strategies for their conservation. The Andean forests in the region are conserved in remnants inscribed within protected areas or in areas of difficult access, with steep slopes, where agriculture is difficult and loses profitability. In contrast to dry forests, Andean forests and mountain ecosystems such as moor or *páramo* and glaciers are highly represented in the Single Register of Protected Areas.

Regarding this last point, it is important to highlight that protected areas, despite their establishment, may be failing in their conservation objective so that they may not be sufficiently mitigating the pressures of the adjacent areas on their core areas. Furthermore, for protected areas to achieve their conservation objectives, it is essential that they are connected to each other, allowing genetic flow between populations and contributing to the maintenance of ecological processes that operate at a higher scale of landscape.

3.1. The nerve center in territorialization

If the loss of human lives in climatic events is an indicator of something, in the Colombian case the National Planning Department recognizes that 33% (a third) of the Colombian population is at risk, as of April 2017. The point is not, then, natural fatality; it is that through the historical process of formation of Colombian society, at least a third of it has been exposed to the greatest risks; it is the result of a system of inequalities and administrative incompetence.

The way in which a city, a region, emerges is a matter of its territoriality associated with the economic, social, and cultural relations and of the adaptations of its government to the hierarchical arrangements of the political system. The word “region” comes from the ancient Indo-European meaning (*reg*) that evokes, according to Armando Martínez (2006:390), a peculiar universal action of human beings: to lead, to govern, to direct people. The public agenda today proposes the creation of the Central-South metropolitan area that would house the municipalities of Manizales, Villamaria, Palestina, Chinchiná and Neira. This is a promotional function of the state government in the search for mechanisms of environmental governance, in the development of efficient infrastructure to improve competitiveness and productivity, to connect the dimensions of urban and rural production in a fluid manner, facilitating technological connections, institutional synergies, business coordination in the spheres of action that the National Development Plan designates to the coffee axis.

This level of territorialization, that is, the incorporation of a region, or a city-territory within the framework of constitutionality and the law to provide organizational mechanisms for the exercise of metropolitan government, forces us to understand the framework and exercise of participatory democracy as an essential element in the public call for the proposed territorial organization.

3.2. The ancestral altitudinal

Ancestralities of Abya Yala⁵ constituted societies that considered themselves Nature, according to time and space. What is meant by time is experience of the ancestors, the *huacas*, who devised the ways of life that made the present, which is the horizon of the future, possible. Space is living in the territoriality that would allow them to become life. Savannahs, forests, or Andean mountain ranges were places where some cultures of Abya Yala, were moving towards horizons of reciprocity.

Cultures have been suggested for the Amazon rainforest that guided it for thousands of years towards a gigantic garden of food-bearing trees⁶, from which they were inspired to design the multi-layered fruit orchard. At the same time, they created Chagra modalities for the intensive agriculture of plants of wisdom (yagé, coca, tobacco...) and food autonomy (cassava, pineapple, chili peppers, tomato, among others).

Savannah cultures, along with their roaming gatherer and hunter spirit, devised *conuco* food systems⁷ in diverse environments: conucos of savanna, *morichal*, *mata de monte*, *vega*, *playa de río*⁸.

Mountain range cultures understood the simultaneous control of various altitude levels from sea level to rugged moors, creating agriculture of the highest food diversity that has occurred in the history of humanity: from hundreds of cereals to hundreds of root species and fruit trees.

Open space cultures lived their times; they were run over by cultures of accumulation, dispossession, closed spaces, cultures that live against time⁹. Half a millennium was enough to go from cultures of life to cultures of money.

⁵ Mature Land, Living Land or Blossoming Land, was the term used by the Kuna, native people living in Colombia and Panama, to designate the territory comprised by the American Continent.

⁶ See Charles C. Mann (2006), *1491: Una nueva historia de la Américas antes de Colón*. Editorial Santillana Ediciones.

⁷ The original farming system of *Tainos*. The natives utilized smaller plots of land that were called conucos, where they would simultaneously grow the principal staples of their daily diet, mainly root crops. Commonly used for lands of savanna which are dedicated to a single crop (editorial note).

⁸ *Morichal* is a palm tree forest characteristic of wetlands, wet savannas, and swamps of South America, dominated by moriche palm (*Mauritia flexuosa* L.); *mata del monte* and others are types of Colombian savanna's ecosystems (editorial note).

⁹ See Juan Eduardo Moncayo Santacruz (2014), *La configuración del territorio rural. The case of the Sarare region in Arauca*, Pontificia Universidad Javeriana, Bogotá, p. 157.

In the beginning, in the ancestral, original, it was *the itinerant experience along various altitude levels*. *Quimbayas*¹⁰ ranged from the Cauca River to the top of the Central Mountain Range. The *Pijaos*¹¹, from the Magdalena river to the top of the Central Mountain Range. The *Yotocos*, *Calis*, *Jamundies*, *Guacaries*, *Bugas*, from the Cauca River to the tops of the Central and Western Mountain Ranges. The *Emberas* from the Pacific Ocean to the top of the Western Mountain Range. The *Saliva* from the foothills of the Cocuy to the foothills of the plains. The *Panches* from the Magdalena river to the Cundiboyacense plateau. At Sierra Nevada, de Santa Marta three *Chagras* communities were roamed: one of hot land, another of medium climate, and the third one of cold climate ... But the Spanish invasion implanted the idea of horizontality: extensive estates. The Jesuits made this idea possible by creating herds in the Eastern Plains and farms in other localities¹², with permanent residence. Instead of scattered provisional huts, villages. And, instead of a thousand languages, a common language.¹³

3.3. Colonization and heritage

In his book *The Return of Icarus* (2002), Augusto Ángel Maya, a real Caldense, concerned with the environment, insists that environmental thought must not only be based on the historical elements of philosophy, but it must also be built from the advancement of the sciences. Thermodynamics, quantum physics, biology, chemistry, climatic sciences, paleontology, geology that energize the new sciences of territorial study are therefore part of this conception that we share as something valid, to understand how to construct or form an environmental public policy that is consistent with the sustainability of the use of land and environmental resources in comprehensive rural development. Mario Mejia Gutiérrez (2017) says: “he embraces the cultural stereotype¹⁴ for

¹⁰ Quimbaya – Pre-Columbian culture of Colombia in the valley of the Cauca River and present living indigenous people of Colombia (editorial note).

¹¹ Pijaos, Yotocos and other names of Colombian indigenous people (editorial note).

¹² See John Murra (1958, p. 71), *Formaciones económicas y políticas del mundo Andino*, Institute of Peruvian Studies, Lima, p. 339; Hermes Tovar (1980), *Grandes empresas agrícolas y ganaderas. su desarrollo en el siglo dieciocho*, Cooperativa de profesores de la Universidad Nacional de Colombia, Bogotá, p. 210.

¹³ See: Juan Eduardo Moncayo Santacruz (2014), *La configuración del territorio rural. The case of the Sarare region in Arauca*, Pontificia Universidad Javeriana, Bogotá, p. 157; John Murra (1958, p. 71), *Formaciones económicas y políticas del mundo Andino*, Institute of Peruvian Studies, Lima, p. 339; Hermes Tovar (1980), *Grandes empresas agrícolas y ganaderas. Su desarrollo en el siglo dieciocho*, Cooperativa de profesores de la Universidad Nacional de Colombia, Bogotá, p. 210.

¹⁴ Enrique Dussel (1998), [in] *ética de liberación*, departs from the conventional stereotype, posing Greek philosophy as inspired by Egyptian theologies, and insinuating the origin of philosophy in the Arab genius that rescues the rights of reason versus faith; 9th and 10th centuries.

which the world is, because there were once philosophers in ancient Greece”. Despite differences, we prefer to agree with Ángel Maya in his reasoning towards reunion with the Mother: Society and ecosystem are two different ways of being Nature (Ángel, 2002, p. 243).

Caldas in its municipalities of the mountain ecosystem, of the Andean mountain production mode, is traditionally a coffee state (department), imbued with the culture of an Antioquian colonization, which leaves an indelible mark of expression culturally molded in its rural and also popular urban landscape of towns, almost all of them linked to exporting grain as raw material for the coffee roasting industry. Manizales, Neira, Chinchiná, Palestine, Villamaría exist thanks to coffee planting and its commercialization. The parts of the mid-altitude hillside allowed for the adaptation of Arabian coffees in the region to boost the economy and make Colombia an international insert exporting raw material after the tobacco market crisis in the nineteenth century. Aguadas, Riosucio, Salamina, Samaná are municipal territorial entities of this type.

Despite all this, each one of them has differentiated characterizations due to the presence of indigenous people as in the case of Riosucio, with combinations of varied altitudinal floors in production, and climates such as Salamina and Aguadas with their cold zones of Cundinamarca-Boyaca colonization, producers of potatoes and Norman cattle, of sheep, horses and mules. **After the Antioquia epic of the colonization of western Colombia, they became essentially coffee growers.** Neira, Manizales, and Villamaría are in cold zones and moorlands, like the National Park of los Nevados, moorland patrimony, environmental essence of fundamental ecosystem in the territorial life and of connection with the mother earth or pacha mama. Samaná is a rich area of biodiversity, with beautiful rivers, splendid lagoons, and Andean forests, but also planted with coffee, inhabited by descendants of *Paisas*.

3.3.1. Environmental history and cultural heritage

This economic, environmental, social, territoriality history formed a society of small Catholic farmers, tireless workers, bearers of a culture of values of honesty, keeping the word in business. In the recent events of territorial positioning in contexts of globalization, UNESCO granted a certificate of Coffee Cultural Landscape to this form of productive expression established in municipalities with this characteristic. Coffee production is associated with other agricultural goods such as sugarcane, banana, some fruit trees such as orange, tangerine, lulo, passion fruit, papaya, tomato, granadillas; tubers like cassava; horticulture like the tomato, the ahuyamas. There are also agro-industrial enclaves such as sugar cane in the Risaralda river valley. This landscape is also associated with medium-sized and some extensive pasture-covered properties for livestock, of double use in the production of meat and dairy products. “It is clear that Society is culture and ecosystem is Nature. Culture is the capacity to transform Nature, and, at the same time, the result of that intervention.

The human species evolves, rides, even biologically, along with culture, intellectual and spiritual growth. Technological instrumentation, specific technique corresponds to each cultural stage” (Mejía, 2017).

The contexts of climate change, the vulnerability of the territorial space and the environmental goods that are necessary for integrated rural development, the provision of public services and productive resources, especially water, **in the face of recurring weather phenomena such as *El Niño*** (an annual weak warm ocean current that runs southwards along the coast of Peru and Ecuador at about Christmas time) and *La Niña* (a complex weather pattern that occurs every few years, as a result of variations in ocean temperatures in the equatorial band of the Pacific Ocean), require a cultural civilization that promotes the learning of quantum physics, biology, and chemistry as a triad of knowledge that is essential to the understanding of organic agriculture in harmony with nature, non-violent peace agriculture, and the creation of conditions for food security and sovereignty in territories that understand the present ecosystems.

Community organization, ties of solidarity and cooperation paired with social fabric that values work, good social behavior, legality, citizen oversight of development plans with a territorial approach, are essential conditions to face the challenge of making the city rural and urbanizing the countryside. Facing organized crime, illegal armed agents, extortion, the limitation of freedoms and rights is a function of the state in its real presence through the exercise of public administration as a whole. This sphere of action requires ideas, knowledge, and values from a perspective of public ethics that break down patronage, corruption and hateful exclusion categories before the priority of human rights, especially those of children.

The issues associated with public administration require these conditions for the elaboration and precision of public policy with a territorial approach to development and sustainability. Local development in the constitutional triad of competition, complementarity and subsidiarity prevails in the legality of territorial autonomy, with the necessary institutional coordination and levels of efficiency, efficacy and effectiveness in the field of public management. “In five hundred years it became a land of spoils, cannon fodder for crime, a space conducive to waste and corruption. The false ideas of western progress have us on the verge of extinction, on the precipice that anything goes for accumulation and abuse” (Mejía, 2016).

3.3.2. Resources, climate, and authentic competitiveness

The first essential element is the land, with its soil, use and tenure. Two main landscapes are recognized on the mountain slopes. The one with a dry tendency of the piedmont, normally up to 1,500 meters of altitude; the most humid tendency towards the upper zone of the central and western mountain ranges. In the case of Salamina and its township of San Félix at altitudes of