

The legal framework of air pollution control in São Paulo

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Brazil: a Federation of 3 levels

- Federal Union
- Federative States
- Municipalities

- Autonomy - not hierarchy
- Cooperation



BRASIL 1988

Constitutional system of division of powers

- All federative entities are given specific competences by the Constitution
 - Shared / exclusive competences
 - Legislative / executive competences



Environmental Protection



Federal Union

- Federal Union:
 - Powers to edit national laws
 - General rules
 - Standards
- Powers to act on environmental protection and preservation at the national level
- National Environmental Policy (1981)
- National Climate Change Policy (2009)



Federative States

- Powers to supplement national laws per their peculiar – regional interests
- Powers to act on environmental protection and preservation at the regional level



Municipalities

- Power to supplement national laws per their peculiar – local – interests
- Powers to act on environmental protection and preservation at the local level



SISNAMA – National Environmental System

- Environmental bodies at the national, state and municipal levels
- All having the same basic structure:
 1. An executive body, integrated by specialized personnel
 - Enforcement
 - Environmental Licensing
 2. A participatory environmental council
 - Members of Administration and civil society
 - Consultative and deliberatory

Ministry of the Environment

Federal level



1. Executive bodies:

- a) IBAMA – enforcement and environmental licensing in general
- b) ITCMBio – preservation units and biodiversity

2. Environmental council – CONAMA

- Sets parameters, standards, regulations through RESOLUTIONS

URBAN PLANNING

FEDERAL UNION

- Sets general guidelines through national laws
- Brazilian Statute of the City (2001):
 - Guidelines and standards to urban planning
 - Minimum requisites to local Master Plans
 - Basic framework for participatory urban planning and management
 - Fundamental urban tools and instruments



States

- Powers to create Metropolitan Regions through state (regional) laws, to coordinate the implementation of common interest public functions such as:
 - ❖ Housing
 - ❖ Transportation
 - ❖ sanitation

Municipalities

- Powers to edit the Master Plans:
 - Basic instrument of urban development in Brazil
 - Municipal Law
 - Accordingly to the standards and guidelines set by the Statute of the City
- Powers to promote adequate territorial planning and control of land use, land parcelling and occupation
- Powers to render local services, such as TRANSPORTATION

Air Pollution in the State of São Paulo

State of São Paulo

- Richest state in Brazil
- Economical and industrial pole
- 32% of the National GDP (2015)
- 44 million inhabitants
- 645 Municipalities



Environmental protection in the State of SP

- Air pollution cause by industries has been a major environmental challenge for many decades, specially in the 1970s
- Incidents due to air and water pollution at Cubatão in the 1970s gave cause to a significant civil society mobilization in the state
- Institutional and legislative improvements on the control of industrial activities in São Paulo and in the country

Structuring of the State Environmental System

- 1968 – CETESB – State Environmental Agency
- 1983 – CONSEMA
State Environmental Council
- 1986 – SEMA
State Environmental Secretariat
- 1981 – National Environmental Policy



Industrial Air Pollution Control in the State

- Significant drops on the CO₂ and SO₂ levels in the State's atmosphere were observed between the late 1980s and the early 2000s due to:
 - Improvements on environmental licensing procedures
 - Enhancing of environmental inspections
 - New environmental benchmarks set by the 1988 Constitution
- Today, VEHICULAR EMISSIONS, not industrial emissions, are the major source of air pollution in the state of São Paulo

Vehicular Air Pollution Control Framework



MMA – Federal level

- Air Quality Management Unit
- National Air Quality Plan
- CONAMA Resolution 418/2009
 - PRONAR – air quality patterns (WHO)
 - PROCONVE – vehicles
 - PROMOT – motorcycles
- Support to the States' PCPVs – Vehicular Pollution Control Plans and Vehicular Inspection Programs

State of SP – SEMA and CETESB

- PCPV 2017/2019 – actions to control and reduce vehicular emissions and fuel consumption
- State Decree 59.113/2013 (based on State Law 13.789/2009)
 - Stationary sources – industries, mills, incinerators
 - Mobile sources – vehicles and motorcycles – PCPV
 - New air quality patterns – WHO
 - Air quality management in stages – intermediate thresholds

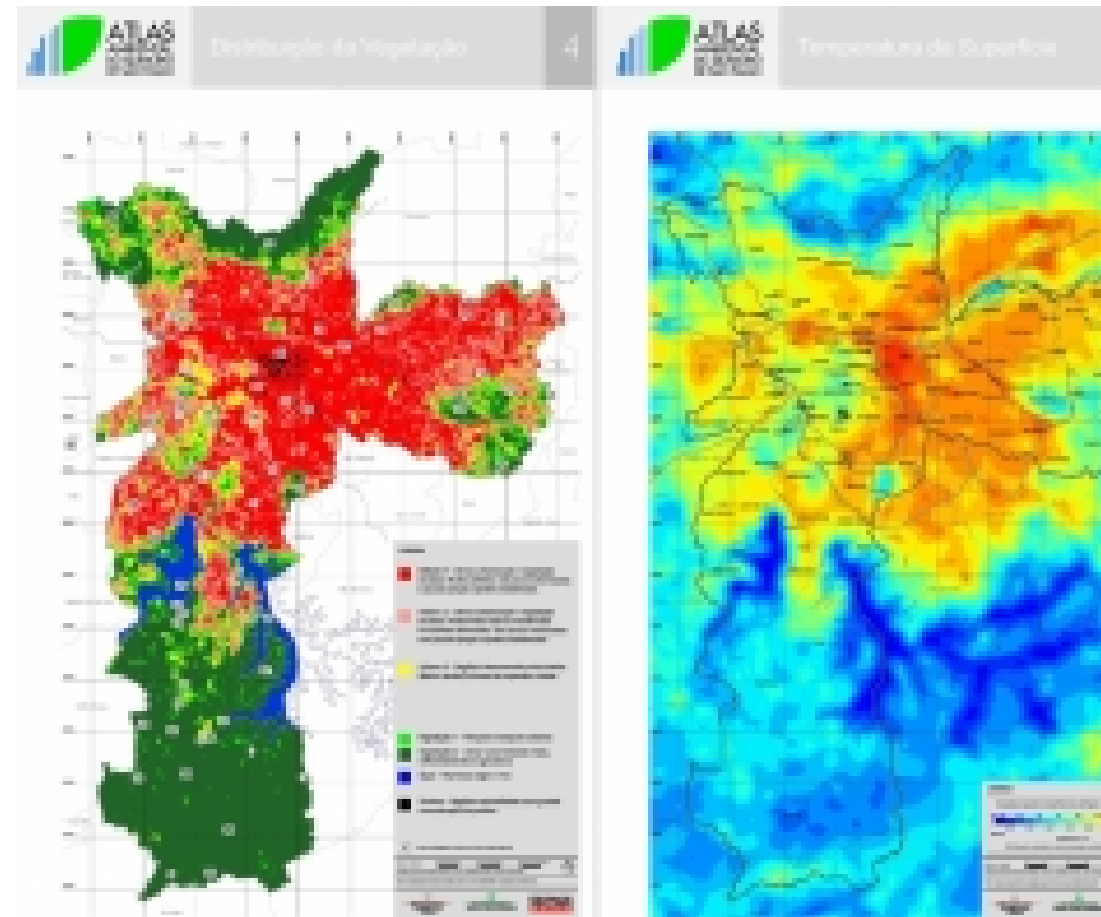
City of São Paulo

- State Capital
- 12 million inhabitants
- Richest city in the country
- Mobility system (based on vehicles and buses) strongly dependent on fossil fuels
- Vehicles – 8.694.466 vehicles
 - 1.174.392 motorcycles
 - 6.111.071 vehicles
 - 47.588 buses
 - 169.004 trucks



Temperature rises

- Temperature differences of up to 10 degrees Celsius between the city centre – more densely urbanized – and the peripheral areas
- Formation of Urban Heat Islands in the city (as a combination of soil impermeabilization, dense occupation and air pollution)
- Overall increase in the city's temperature of 1.5 degrees Celsius since the 1950s



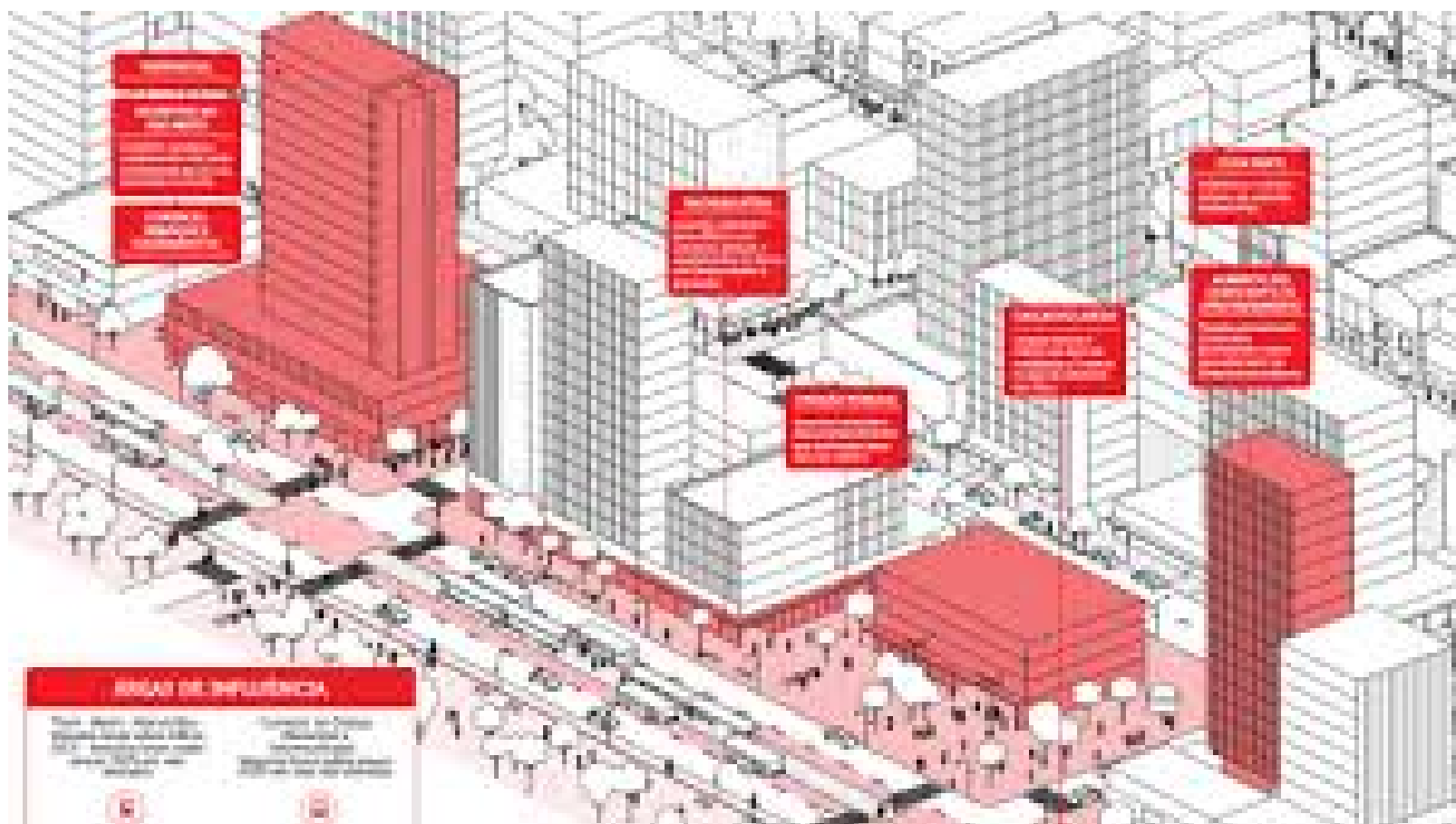
Urban planning provisions
related to vehicular air
pollution control
in the city of São Paulo

2014 Master Plan

1. Expressly acknowledges the need
 - To protect the city's natural resources
 - To adopt mitigation and adaptation strategies to tackle climate change, accordingly to the City's 2009 Climate Policy
2. Considers air pollutant emissions as criteria to (a) classify uses and activities accordingly to their impact (b) be taken into account by the neighborhood impact studies – EIVI/RIVI
3. Air pollution reduction as a Mobility Goal
 - Adaptation and renewal of the bus fleet
 - Incentives to substitute vehicular energy matrix with sustainable sources of energy

2016 Zoning Law

- Guideline: to adapt land use to non-motorized means of transportation, specially bicycles
- Axes of urban transformation: areas to be densified in order to adequate land use to the offer of public transportation
 - Limited Parking spaces
 - "Fachada ativa" – stores and services at the street level, to foster mixed uses and street walking
 - Mandatory widening of sidewalks

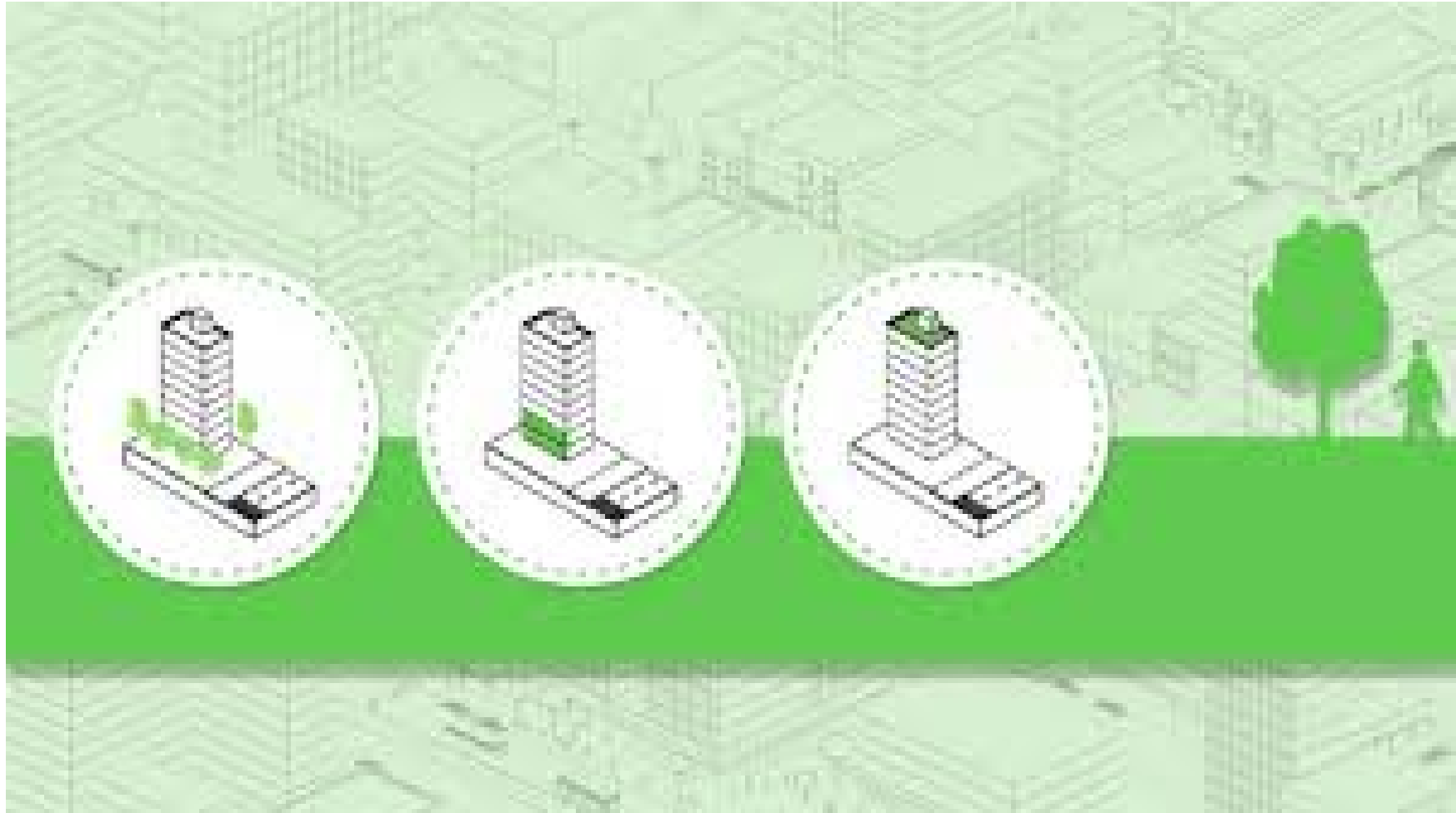


Environmental quota

- Objectives:
 - Increase water retention and infiltration per lot
 - Increase vegetation (which contributes to the control of air pollution)
 - Protect microclimate
- Works both as a building restriction and an incentive
- Applicable only to lots superior to 500m² and to new constructions and renovations outside the city centre
- The quota is calculated by a mathematical formula that articulates vegetation covers and drainage, with weighting factors that vary with the lots location

Environmental quota

- The construction or renovation project must obtain a minimum score on this formula,
 - manoeuvring preset construction and landscape solutions to achieve a certain number of points on vegetation and drainage indicators
 - Complying with the soil permeability rate
- If the minimum score is achieved, the developer can apply for a discount on the payments due for the purchase of development rights



Urban Mobility Plan (2015)

1. Integrated Public Transportation System

- Modal integration - including bicycles
- Adoption of new technological alternatives
- Network structured
- Corridors and exclusive bus lanes

2. Active Mobility

- Bicycle system – exclusive lanes for bikes
- Walking
- Contribution to air pollution reduction



Urban Mobility Plan (2015)

3. Environmental Management:

- Mitigation of atmospheric emissions through the change of individual to collective transportation
- Reduction of the diesel consumption per bus, through the increase in the average operating speed at the corridors and exclusive lanes
- Use of clean energy and technologies by the bus fleet, according to the 2009 Municipal Climate Policy guidelines
- Substitution of fossil fuels is falling short due mostly to high operating costs – impacts on tariffs

Other Actions

1. Traffic restrictions to 20% of the fleet per week day

- Municipal Law 12.490/1997
- High levels of obedience (90% in the morning and 84% in the afternoon)
- Introduced not due to environmental reasons, but to reduce traffic jams in the expanded city centre

2. Municipal vehicular inspection

- From 2008 to 2014
- Only vehicles registered in the city of São Paulo
- Technical and emissions inspection
- Suspended due to irregularities in the concession



New Contracting of Bus Lines Concessions

- Introduction of environmental requirements, in compliance to the Municipal Climate Policy:
 - Annual emission reduction targets
 - Deadline for zero emissions (Municipal Law 16.802/2018)
- **SUSPENDED BY THE FISCAL COURT – irregularities in the bidding notice**



Thank you!

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