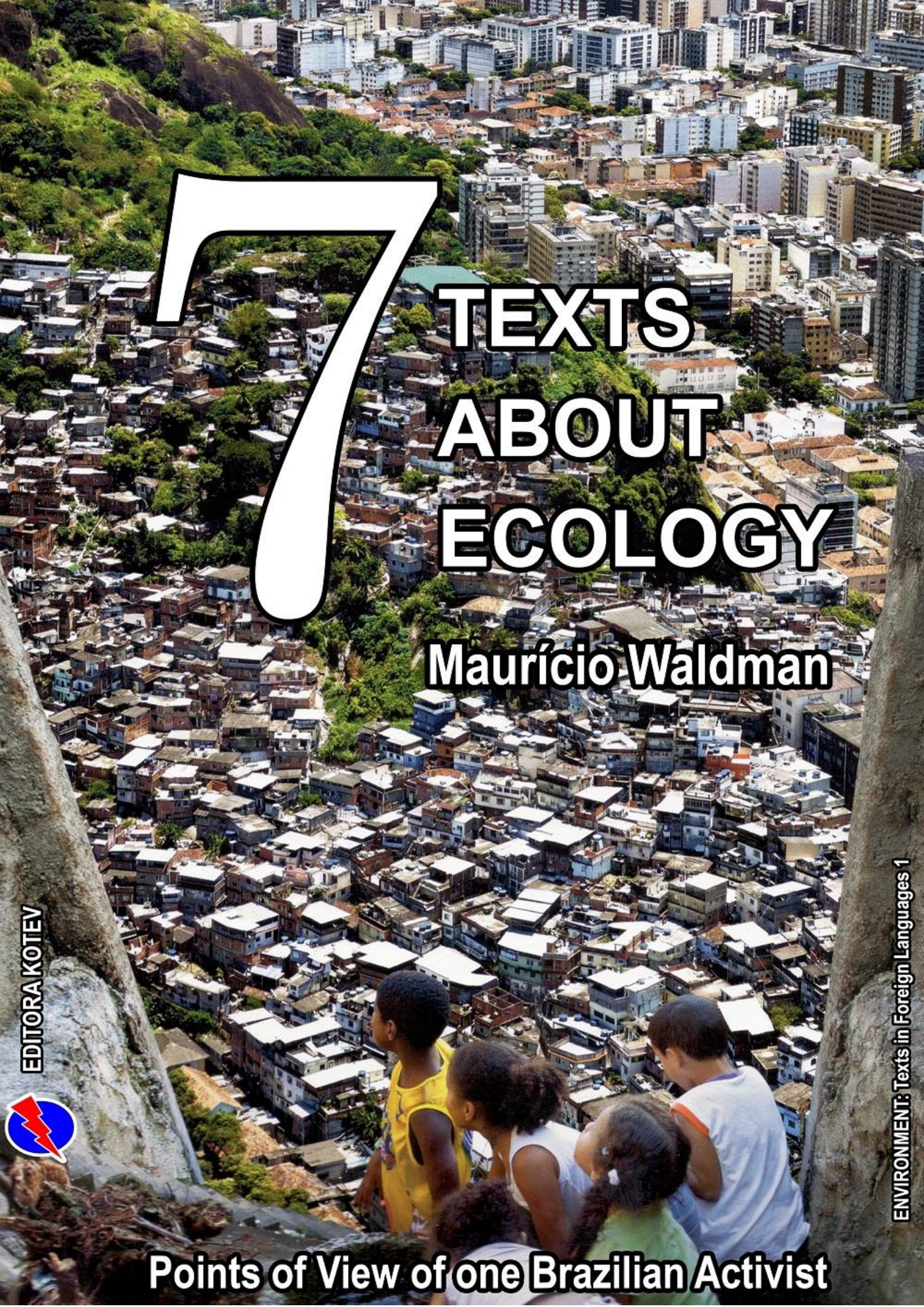




7

TEXTS ABOUT ECOLOGY

Maurício Waldman

EDITORAKOTEV



ENVIRONMENT: Texts in Foreign Languages 1

Points of View of one Brazilian Activist

SEVEN TEXTS ABOUT ECOLOGY: POINTS OF VIEW OF ONE BRAZILIAN ACTIVIST ¹

MAURÍCIO WALDMAN

A FEW WORDS ABOUT THE BOOK

Seven Texts about Ecology: Points of View of one Brazilian Activist is a compilation of texts, articles and papers elaborated by the Brazilian environmentalist Maurício Waldman during the last five years, published in newspapers, academic journals and websites.

Waldman, a historical environmentalist of the State of São Paulo, demonstrates in this collection of texts, a heterogeneous succession of issues that inspire his actions, thoughts and interests, points of view that also are representative of his life as researcher, social activist, journalist and professor.

The intellectual trajectory of Maurício Waldman - plural and independent -, has been incorporated to debates about public policies, in academic field and social mobilizations.

Since the years 1970, Waldman writes texts that are published in all kinds of publications, a strong intellectual activism that now, is accessible to English language's readers.

Editora Kotev, a digital Brazilian publishing home, contributes, in this way, to discuss the associations between environmentalist ideas that are global in its hegemonic shape, but nationals in its particular essence.

Thus, we appreciate the interest of readers, as well as comments and suggestions to this work. Editora Kotev, São Paulo, Brazil, August 31, 2016.

ABOUT THE AUTHOR

Mauricio Waldman is a journalist, editor, researcher, professor, anthropologist and veteran activist of Brazilian environmentalist movement. Waldman was born in São Paulo, Brazil, on December 2, 1955.

As social activist, he collaborated with several organizations, like Comitê de Apoio aos Povos da Floresta de São Paulo (São Paulo Forest People Committee), Centro de Estudos Africanos da Universidade de São Paulo (CEA: African Studies Centre, University of São Paulo) and Centro Ecumênico de Documentação e Informação (CEDI: Ecumenical Centre of Documentation and Information, São Paulo/Rio de Janeiro).

Maurício Waldman collaborated with Chico Mendes, participated in movements against dams, mobilizations in support to waste collectors and against water pollution in metropolitan area of São Paulo.

He was the Director of the Children Homeless School of São Paulo, Coordinator of São Paulo Recycling Service and Editor of the Associação dos Geógrafos Brasileiros (AGB: Brazilian Geographers Association).

Maurício Waldman published extensively on Ecology, Environmental education, Water Resources, Waste Management, Culture, Urbanization, Development and Black Africa: 700 texts, articles and papers, including 18 books and 22 ebooks.

Waldman has been a columnist for Brazilian media. He has published articles in Diário do Grande ABC, Cultura Verde, Brasil-Angola Magazine, Ambiente Urbano and Jornal Cultura (Luanda, Republic of Angola).

Waldman is Post Doctor in Geosciences (University of Campinas, UNICAMP, 2011), Post Doctor in International Relations (University of São Paulo, USP, 2013) and Post Doctor in Environment (Programa Nacional de Pós Doutorado, PNPD-CAPES, 2015).

Waldman translated *An Eco Modernist Manifesto* (Breakthrough Institute) from English to Portuguese and *El Ecologismo de los Pobres* (Joan Martínez Alier), from Spanish to Portuguese ².

I. WASTE DOESN'T HAVE SEX ³

It was a day of bright sunshine in the midst of one of the uncountable dumps in Oeste Paulista region, close of the dynamic city of Presidente Prudente (Figure 1).



FIGURE 1 - The Oeste Paulista region (red area), is the western part of the State of São Paulo, one of the 26 states of the Federative republic of Brazil. This Brazilian administrative unit is the richest state and the biggest industrial complex of the country, located in the southeast of Brazil (in blue). In Oeste Paulista, the city of Presidente Prudente is the geographical pivot in the region, a city that is considered the sixth best in the State of São Paulo to live in. Among 5,560 Brazilian municipalities, it occupies the 29th place for most promising cities to build a career. However, Oeste Paulista region is contradictorily one of less developed in the State of São Paulo and almost all waste landfills are deprived of any geotechnical management. A contradiction which incidentally, is extremely common in Brazilian space (WALDMAN, 2015).

I was researching a sinister landfill with my pupils, trying to identify that was possible find on the soil. Suddenly, without previous warning, I asked a student, who, like me, is in love with garbage: “Have you noticed that there is no pornographic magazine in the trash?”. “Yes, indeed” he agreed immediately. “But I had never noticed it before.”

Somehow, me neither. For me, this fact only became clear when I read the book *Trash: The Archaeology of Garbage*, a masterful work of the American anthropologist and garbologist William Bill Rathje (Figure 2), which is only accessible in language of Shakespeare. Unfortunately, a work solemnly ignored in Brazil, including by academic field.



FIGURE 2 - William Rathje, “Bill” Rathje or William Laurens Rathje (1945-2012), was an renowned American archeologist and Professor at the University of Arizona. He was the longtime director of the famous Tucson Garbage project, which studied trends and discards by field research in Tucson, Arizona, and in landfills elsewhere, pioneering the field now known as *garbology*. Despite this, he is widely unknown in Brazilian studies about garbage. In the same perspective, the word *garbology* unfortunately is not included in dictionaries of Portuguese language. In this photo, an emblematic image of the researcher in the Fresh Kills Landfill, New York City (< <https://sbs.arizona.edu/news/william-l-rathje-1945-2012> >).

Everybody must pay attention in William Rathje work, above all, because it always is revealing new perspectives about the social, psychological and cultural features of the undervalued materials that people consider “garbage” ⁴.

For instance, the Rathje analysis totally denies a false paradigm that, despite being untrue, is assiduously repeated by the media, by academics and even by specialists in waste management. It refers to the dubious axiom which expresses that the garbage is merely “a reflection of society.”

Technically, set trash as a simple reflection of society requires prudence. It should be noted that a reflection implies in a correspondence. That is: between what a surface reflects and what is put in front of it.

Thus, despite the small distortions, affinity should prevail between the physical world and the images generated on a mirrored surface.

But this isn't exactly the case of the waste. Imagine someone with dark hair, perfect teeth, well-dressed and thin. Supposing this person were the trash, the image, though recognizable, would show white strands of hair, gaps in the smile, clothes scruffy and some extra pounds.

In fact, the waste is far more mysterious than most people think. Trash is not just something we reject or discharge. In the history of societies, is the cultural codification which defines what goods and objects should be thrown away or not.

Thus, the concept that directly connects the consumer with the waste generation doesn't find a material proof in landfills or in trash cans.

The case of pornographic magazines is a good example of this observation. First, it is imperative that one should note that they possess unsuspected durability. They are secretly consulted for years and years.

Hidden in attics, many are outrageously discovered only when the owner dies. Anyway, if the widow in a rage throws the magazines in the trash can, there will always be inevitably someone to take them of anonymity.

William Rathje indicates other clues to explain the absence of the magazines in landfills. Many collectors, faced with the threat of being discovered, quickly carbonize the journals on cans, when the family is not at home.

Or then, they donate the magazines to tire repair shops, barber shops and to closer gas stations. You must be sure of this: the collection is always well received.

Another tactic is throwing them in dumpster debris far from home, an operation carried out quietly in the night. The cars stop and the incriminating cargo is quickly thrown into the container. Nobody may to know.

But again the sex goddesses can be saved by the charitable gesture whether of a homeless man, someone in love with muses, or by a teenager who will, thus, have a happy end of the day.

And hypothetically, if they survive and finally reach a landfill, who will say that, there will be no kind soul to welcome them?

As Rathje informs, such publications may demonstrate remarkable perseverance. They will only disappear when the pages, due to have been seen and visited tirelessly, stand out of the staples, worn out by a ruthless manipulation.

In other words it means: they are broken down by desires that are socially stigmatized, but that insist on acting in the soul, mainly in their underground.

Would it, then, be possible to adjust Rathje to some of Sigmund Freud's assertions. The father of psychoanalysis understood that the denial of something or someone always permits two strategies. One of them is the disqualification. The other one is the omission of its existence.

Therefore, the wise Sigmund Freud confirms William Bill Rathje: not everything in this world is granted with the option of becoming waste. The reason is clear: because the waste, although negligible, is part of this world.

So, garbage only exists when something is understood as participant of the concrete universe in a specific community. So, waste claims a recognizing of the social world and cultural mainstream.

Without this legitimization, trash does not exist, neither have any status. The garbage begins in the people mind, not in real world.

Therefore, the imaginary is a central point in material life that hides or explicates the meaning of the waste. Such as William Rathje's thoughts teaches us.

II. CARNIVAL & ECOLOGY: SAMBA, GINGA AND SWEAT ⁵

In the last decades, a debate has gained notoriety and importance: the environment protection.

The advancement of modern society has caused all kinds of environmental impacts and degrading conditions of life. Today, the environmental crisis is dramatic, bringing direct threats to the survival of all species, including the humans.

Therefore the defense of the environment was included in the agenda of global society, basing on common procedures that intended to advance the conservation of nature.

And the creative community of the samba ⁶ is proudly present in this transition to a new consciousness!

So, the Carnival receives ecological legitimacy: “Ecofolia” ⁷ without dirt or pollution, samba with environmental themes, Eco-efficient “trio elétricos” ⁸, use of non-toxic sprays, musical instruments made of alternative materials, reuse of scrap, costumes made with natural fibers, reusable ornaments and a clean parade (Figure 3).

These are some of many examples of environmentally friendly attitudes used by Schools of Carnival and Samba ⁹ in the recent years.

Carnival is an exceptional Brazilian popular party, a celebration of the identity of a playful, sensual and dynamic culture. Therefore, the Carnival claims its participation to honor the time of the ecology in order to respect the nature.

Carnival has always been a street party in Brazilian large agglomerations. In the old “Entrudo”, as the Carnival was called in Brazil in past times, everybody went to the streets to dance, in groups that sang cheerfully without stop, a splendid event of all people.

The avenue was, and still is, the runway from the revelers, the popular euphoria, musicians, dancers and the main way of parades to please every kind of person. All of this under the sound of drums, rhythms evoking *Mother Africa*, the mother of the Humanity and an icon of Brazilian culture.



FIGURE 3 - Some Carnival clothes and goods made with recyclable materials, nowadays a relevant concept in Brazilian Carnival (< <https://br.pinterest.com/> >).

All this movement momentarily alters the habits and daily urban life, with undeniable ecological consequences. The concern increases when you realize that Brazil is the home for the largest Carnival in the world!

But there is a very important detail: the revelers are step-by-step becoming very happy ecological actors.

To consume only what is necessary, create less garbage and to reduce the wasteful consumption of food and drink are some attitudes of the new Eco friend Carnival.

The authorities, the Carnival blocks and revelers should be prepared for the event. All these actors should rethink their actions and make a happy Carnival in concerning to respect the ecology.

There are some tips for an ecological Carnival:

- Abolish cups and plastic cutlery, disposable plates, masks, props and costumes that are not made from recyclable materials;
- Place the wastes in the right place. The sea, the domain of Neptune, is not a trashcan. The street was not made to receive the bottles. The beach is not place for paper or napkins. Disposing the waste properly, the city will be cleaner and in addition, it will facilitate the work for the garbage collectors;
- Enjoy the Carnival to walk, to share a taxi or the car of your friend. Get out of the routine to have fun with the novelty;
- Practice the ecological bath. Be brief in shower. Remember, the Carnival has only three days. The loss even one second is unacceptable!
- Is needed to eat only healthy food, organic and vegetables pesticide free to get vitality to the body. when you are well fed, you can have much more energy to the Carnival;
- Give preference for fresh food without packaging or by those that have returnable package;
- Practice the conscious consumption: seriousness rhymes better with creativity, and after Carnival, let's go on with this determination!
- No drugs! No way! To love: only safe sex! And drinks, only for fun!

These and many other actions wait for conscious revelers. And most of all is because the Carnival is truly a party of the *ginga*.

Remember that in Portuguese of Brazil the word *ginga* comes from Nzinga, the name of the very beautiful and courageous Angolan Queen who fought, a long time ago, against the Portuguese colonial power moving forward and moving back ¹⁰.

This is the *ginga*: model of fight of free men and women that face intelligently the enemy, adopting rapid movements and all kind of seductions as war weapons.

Thus, perceiving the weakness of the adversary, they have the victory, wining the battle with smartness, determination and with the abilities of their bodies.

Thus, here in Brazil the brave Zumbi organized the Quilombo dos Palmares - the powerful refuge of the slaves and all wronged people -, commanding one long fight for freedom doing the same thing, with courage and... *ginga*, of course.

The ordinary man also has in this swing his life strategy and recognizes the *ginga* as the central theme of his day-by-day, detecting the needs of the moment to face them and to be happy.

Tricking the adversity, *ginga* is the movement of the soccer player; it is the rhythm of the “capoeirista” ¹¹, as well as, is the seductive undulations of the beautiful body of the woman.

So, let's dance in the Carnival, to have a good party without guilt. Let's dance listening the sound of the drummers and with the conscious of a future not only better, but different for the country and the world.

Let's go to the ecological Carnival! Now and Always! With ginga!

III. ECOLOGICAL CRISIS: DOUBTS AND UNCERTAINTIES ABOUT SUSTAINABILITY ¹²

The moment had everything to raise hope. Twenty years after the 1992 United Nations meeting focused on the environmental debate, the famous United Nations Conference on Environment and Development, the city of Rio de Janeiro hosted again a majestic and international gathering of odd importance.

Being a United Nations event focusing on sustainable development, this Earth true summit became known as Rio + 20, in a direct reference to the famous Rio-92. For two days, from 20 to 22 June 2012, the doubtless fact of bringing together leaders from around the world brought a strong light to the environmental institutional agenda.

The explicit purpose of this meeting, to encourage public policies and measures to address the environmental challenge, also planned to conduct an assessment of the Earth ecological “state of the art”. In this perspective, endorsing the perception, which essentially no one would dare to put in doubt, the meeting would be a 2.0 version of the Rio-92.

In few words, after two decades of recognition of the concept of Sustainable Development, it would be at least obvious to have on hand a reasonable collection of successful realizations and initiatives. It was inevitable, however, to admit that even after twenty years of indefatigable preaching in favor of sustainability, there was an understanding that its evolution was disappointing (Figure 4).

Besides, there were also unacceptable setbacks registered in many issues. As disclosed in the Global Environment Outlook Report, a document of the United Nations Environment Programme (UNEP), only four of the ninety most important environmental goals agreed in the last forty years had achieved significant progress. Another forty goals improved minimally. In addition, 24 of them showed almost no progress.

Certainly, these disappointing data were the trigger of all kinds of debates and controversies. In special, one of these problems, which reflects a diffusely spread nuisance in the memory of all who follow the path of sustainable development, has gained important role at this time.



FIGURE 4 - Ban Kin-Moon, Secretary-General of the United Nations, in Rio + 20. As a global event, the Rio + 20 get less representative than Eco-92. A few key global leaders, mostly G20 leaders and namely United States President Barack Obama, German Chancellor Angela Merkel and UK Prime minister David Cameron, did not attend the conference and blamed their absence on the ongoing European Sovereign, debt crisis. Their collective absence was seen as a reflection of their administrations' failure to prioritize sustainability issues (Photo: TCV News).

Being more specific about this point: the issue clarified in these data are not restricted to mere unwillingness of the authorities, to logistical errors, or then, to operational failures. A further and more detailed discussion would be needed to understand the reasons these big failures in solving imminent environmental difficulties.

It is absolutely clear that the severity of the scenario discussed in Rio + 20 Summit could not be ignored by Ms. Gro Harlem Brundtland. On the contrary, following full-time the paths assumed by the concept of sustainability, Brundtland, a Norwegian ecologist and global reference in coordinating the elaboration of the report *Our Common Future* (essential and axial document of Rio-92), exposed, in an unprecedented interview to the Brazilian press ¹³, a long list of bitterness.

The Brundtland's speech shocked the observers: she declared with rare sincerity that sustainability simply is still waiting for realization as a real practice. Demonstrating nonconformity, she also warned that the term is used abusively, without any connections with the intentions that guided Rio-92 Summit. And more directly, she sentenced: “Sustainable development has not happened yet” (Figure 5).



FIGURE 5 - The Norwegian Gro Harlem Brundtland in Rio + 20. In 1983, Brundtland was invited by United Nations Secretary-General Javier Perez de Cuéllar to establish and chair the World Commission on Environment and Development (WCED), widely referred to as the Brundtland Commission. Since then, Brundtland popularized the concept of “sustainable development”. But this notion today is deeply controversial. Specialists believe that the concept about sustainability is not enough to reorganize the production and the modern life style, either to new economy, ecological or social basis of Modernity (< <https://br.pinterest.com/>).

As one knows, as was emphasized, the interviewee was the “Mother”, of the concept of sustainability. Thus, who would challenge the Brundtland’s verdict? And, indeed, in a world where to be unsustainable became a general rule, the market offers today all kinds of “sustainable” goods ¹⁴ .

After all, like proposed by Our Common Future, the environment and the economy do not have to be at odds with one another.

But, the terminology “sustainable” is absolutely polysemic and includes notorious contradictions. A fact illustrates this point: few years ago, the US Army bought tanks

with solar panels, Eco-efficient shielding and engines with low emissions of carbon, to stop obviously the greenhouse effect.

Naturally all these military tanks are singularly “green”, because these weapons are promoting the environment protection and the Planet.

Nowadays, good environmental services are offered, for instance, by “sustainable” cemeteries. It is also possible to find incinerators supposedly “ecological” to operate, to burn and calcine all kind of trash (including materials that can be recyclable).

In addition in Western Europe even the militants of a green Nazi movement has been incorporating ecological issues in its ideology and political principles. Embarrassingly, therefore now there is a “sustainable Nazism” too.

In conclusion: a theoretical and operational inconsistency of so-called Sustainable Development is under intense fire. And not by chance, in 2015 April several eminent environmentalists intellectuals, mainly Europeans and North Americans, launched the An Eco Modernist Manifesto.

Regardless of the acceptance or rejection of their claims, the Manifesto signatories explicitly claim the need to review the existing conceptual grid, their implications and limitations.

Today, an environmental agenda includes one way to debates that go into the roots of the issue, an important step in identifying new lines of action.

Future generations will thank.

IV. THE HIGH TECH SLUM COLLAPSUS ¹⁵

In the years 2005-2010, as few times throughout its history, the euphoria seemed to have taken hold in Brazil. With the economy growing rapidly, the country was at last becoming a member of the First World.

The Poor residents of the periphery, who have always been on the fringes of the consumer society, started to visit shopping malls that shortly before, were as distant as the moon.

Even The Economist, traditional, respected and influential British magazine, felt the urge to comment positively on this new context. The November 2009 cover hailed the economic dynamism of the country as “the greatest success story in Latin America”.

The image, as we know, is worth a thousand words. This was the largest magazine asset. The cover of The Economist showed the image of Christ the Redeemer of Rio de Janeiro climbing like a rocket. In addition, the triumphant title was *Brazil takes off*.

This iconography would soon be emblazoned across the world. It reflected one wave of optimism comparable to the *motto* “Brazil Awakening Giant” (or then, “Brazil Great Power”), an imaginary construction typical of the Brazilian military government in the years of 1970, called the “The Years of the Lead”.

In these years, President Lula was blessed by widespread records of popular approval. Not even the shocking Scandal of “Mensalão” ¹⁶, involving politicians of direct circle of President Lula (Figure 6), several political parties, including the PT (Partido dos Trabalhadores, Workers Party), the party of the President Lula, and members of the public administration, had shaken the prestige guaranteed by good economic indicators.

Therefore, the good understanding and perception of the Brazilian people about the economy, and not only of the poor people, helped Lula's re-election in 2005. In this way was assured to the former syndicalist leader a second term that as the first, kept the siren call of consumerism.

But there are no miracles in economy. The “Lula Era” was benefited from strong global demand for commodities (mostly China). This demand had inflated the prices of huge purchases of minerals, animal protein and grains.



FIGURE 6 - José Dirceu de Oliveira e Silva (left), the strongman of President Lula (right), that was expelled from the Brazilian Congress on November 30, 2005, accused of breaking the parliamentary decorum due to his involvement with the “Mensalão” Scandal. Dirceu was judged for corruption, embezzlement, racketeering and money laundering, among other charges, by the Supreme Federal Tribunal of Brazil in 2012. Besides, on August 3, 2015, he was arrested again on corruption and money laundering as result of the Operation Lava Jato, an investigation with focus in the “Petrolão” Scandal, involving the powerful PETROBRAS, a state-owned enterprise. He found guilty and sentenced to 23 years and three months in prison (Photo: Secretaria de Comunicação Social, SECOM, 2005).

This scenario was decisive especially to the markets of raw materials, Brazil, for instance, that had solid trade ties with the People's Republic of China, since the years 1980 the new giant of the global economy.

The numbers do not lie: the Chinese economy grew up 10% annually since 1980. To satisfy the hunger to growth, China acquired 30% of the iron, 12% of the platinum, 15% of the aluminum, 15% of the copper and 20% of the soybeans produced in the whole planet.

Thus, favored by external demand and governmental income-generating programs, groups without access to consumerism began to be noticed in markets, malls and internet. 45 million poor people joined in the Brazilian web from 2006 to 2009. It was the largest migration toward a new media since the advent of television in Brazil in the 1950s.

Visibly, in the omnipresent, populous and problematic “favelas” ¹⁷ of the Brazilian national metropolis - Salvador, Recife, Rio de Janeiro, São Paulo, Manaus, Curitiba, Brasília, Porto Alegre, Fortaleza, Belo Horizonte e Belém - there were satellite dishes everywhere.

But not only: computers, tablets, answering machines, air conditioners, freezers, mobile phones, lap tops, delivery food and motorcycles now was incorporated in the daily lives of the poor neighborhoods. Apparently, a new time of abundance seemed finally to arrive to the spaces of poverty.

By the way, some data show that this affirmation would be real. The generation of Municipal Solid Waste (MSW), increased so much. The country in 2009 discharged in garbage cans 1.15 kg waste per person per day, national average comparable to the European Union, estimated at 1.2 kg per person per day in this same year (Figure 7).

Municipal Solid Waste collected per capita in urban areas, according the demographic feature of the municipalities

Demographic Feature	Number of Municipalities	Waste collected per capita (kg/ inhabitant/ day)		
		Min	Max	Average
1	753	0,10	2,96	0,81
2	187	0,15	2,08	0,77
3	82	0,41	2,36	0,81
4	53	0,49	1,19	0,97
5	20	0,73	2,43	1,19
6	2	0,89	0,99	0,95
Total	1.087	0,1	2,96	0,96
Demographics groups: (1) until 30.000 inhabitants (2) 30.001 - 100.000 inhabitants (3) 101.000 - 250.000 inhabitants (4) 250.001 - 1.000.000 inhabitants (5) 1.000.001 - 3.000.000.				

FIGURE 7 - The evolution of the Municipal Solid Waste in Brazil (data-basis: 1.087 municipalities in 2009). Clearly, the trend is an expansion of the garbage per capita index, a higher average than Europe in the same period (CAMPOS, 2012: 174).

However, not all that glitters is gold. Experts questioned the triumphalist exaltation of the country. For instance, they warned that The Economist editorial was aligned with the powerful financial capital, and then, they in fact appreciated an economic model that guaranteed profits never dreamed by the bankers.

They also warned that the economic context inspired caution. Supported by episodic global demands, the context could be misleading. It would be only a consumption bubble. No a real growth.

Quickly, in the year 2015 this situation became ruthlessly clear. In this year, marked by recession, unemployment and a real *tsunami* of corruption scandals, the harsh reality assumes the control in the Brazilian people perception, creating a sense of frustration motivated by a bubble of illusions and falsehood. After all, the motto “*The Brazil takes off*” had been solely a cruel illusion.

And who thought that the new life of high tech of the poor people improved with the new, imposing and uncontrollable mountains of garbage, was totally out of reality, in whatever perspective of the evaluation: quantitative or qualitative. Surely, statistics demonstrate this hard reality (Figure 8).

Groups by Per Capita Income	Metal	Paper	Plastics	Glass	Organic
A	6%	31%	11%	7%	28%
B	3%	14%	11%	5%	54%
C	2%	9%	12%	3%	59%
D	3%	5%	8%	3%	64%

FIGURE 8 - The latest available data on waste generation in Brazil demonstrate the perpetuation of social inequalities. The richest social groups (A), have a garbage generation profile similar to the nations of the First World, as has always had. The poor and excluded groups, are little different in this perspective of the Third World populations, with which are leveled. In this sense, the waste shows that the Era Lula did not the historical social inequalities in Brazil (WALDMAN, 2015; CEMPRE Review, 2014: 34).

One elementary fact: in the selective universalization of innovation, the poor can have access to digital pulses. But remain what they always were: marginalized who live in slums, ghettos and neighborhoods without infrastructure (Figure 9).

So all that was bought in endless installments remains a target of the first flood, of the urban violence or then, these gadgets are sold to get money. The electronics are turned off because since 2015, nobody can pay the energy bill. Especially the poor people: more than 50% of Brazilian total population.

The legacy of the polemic President Dilma Vana Rousseff that become known by her bizarre speeches in open defiance to all logic - semantic, economic, social, political or administrative - involves hard challenges.



FIGURE 9 - Two emblematic landscapes in Rio de Janeiro: the slums and the formal city. However, is a typical landscape in all Brazilian big cities, not only in Rio de Janeiro (Photo: Claudia Jaguaribe, in *Entre Morros*, Cosac Naify, 2012).

It is clear that Dilma Rousseff boasted in an apotheotic speech in 2014 that do not to put goals to achieve them, as well as even to surpass them, one of many unfortunate statements of the *Presidenta*, a corrupted form of the institutional word President in Portuguese, as the supporters of Dilma prefer call her.

So it's hard to expect a solution on the horizon. It is certain that the animator global context enjoyed by Lula, his predecessor, is gone forever. However, to the high tech slum, the digital happy times found a melancholic and depressing final point.

Needless to say, is because the high tech slum was absolutely unreal, totally fictional, something simply devoid of true.

V. ECO-MODERNISM ASKS: WHAT DOES SUSTAINABLE DEVELOPMENT MEAN? ¹⁸

A few weeks ago, more exactly in a morning of April 2015, a friend of mine sent me an e-mail.

This message was sent by a partner of the Jaguellonian University of Krakow, from Poland. He intended inform me about the An Eco Modernist Manifesto ¹⁹. Certainly, the message was very interesting, and I felt very grateful with the content.

The An Eco Modernist Manifesto, document signed by eighteen very well known environmentalists, all of them specialists and with large expertise, basically North-Americans together with specialists from Australia and India, claim the need of the discuss a strategic and seminal question: the relationship between development and environmental protection.

Needless to say, the An Eco Modernist Manifesto signatories are focusing on a sensible issue, which persists for decades without real solution.

Since the years 1960 the question about the relationships between development and environmental protection occupies the central point in the environmental of the movement mainstream, as well as for all groups of human society worried with the expansion of ecological crisis.

In this sense, nobody can deny the dangerous and catastrophic situation that we contemplate today in the whole Planet. To understand this problematic situation, would be enough read the newspapers headlines, watch the television news or look for one of scientific studies about the issue.

Day by day, we are bombed with a bitter list of bad news: water depletion, global warming, climate change, faunal mass extinction, destruction of rain forests, waste expansion, weather extremes, social instability, etc.

Worse: all these questions are associated with social, geopolitical and economic inequalities. One of these topics is about the average income of global population.

Thus, what the economic indicators reveal? A central point is that the average income of 20% richer population was 30 times than the 20% poorest global population in the sixties. However, in year 2000 this gap rose 74 times.

In this same year, the fortune of the 358 richest people in the world was greater than the income of 2,7 billion people inhabiting in the underdeveloped countries, mainly in the Third World.

About water, frequently labeled as “the Gold of 21 century”, the data signalize that an empire of the arid times is coming. In this regard, nobody doubts the existence of an astonishing spread process of the water stress with large crowds menaced by the ghost of the dry taps ²⁰.

Today 3,5 billion humans are surviving, in a greater or lesser extent, in the hands of this ghost. Besides of this population with dry taps, several studies reveal that 2,6 billion people don't have adequate sewage collection.

Another key word of this debate is the acceleration of the urban growth. This phenomenon is linked to the water crisis by the very fact of the urban setting is voracious on water demands and natural resources in general.

Moreover, the urban life style demands raw materials and supplies that need a great proportion of water to working.

A synthetic survey shows that the global urban areas, accounting for only between 2.5% and 6% of Planet land area, demands 75% of planetary resources and 70% of fresh water supplies.

Today, there are 47 mega-cities in existence. However, in the year 1800, only 3% of the world's population lived in cities, a figure that rose to 47% by the end of the twentieth century.

In 1950, there were 83 cities with populations exceeding one million; by 2007, this number had risen to 468. The United Nations forecasts that today's urban population of 3,2 billion will rise to nearly 5 billion by 2030, when three out of five people will live in cities (Figure 10).

The sheer size and complexity of mega-cities gives rise to enormous social and environmental challenges. By 2030, over 2 billion people in the world will be living in slums. Over 90% of the urban population of Ethiopia, Malawi and Uganda, three of the world's most rural countries, already live in slums.



FIGURE 10 - New York City in March 2008. Commonly, this prodigious city is an iconic representation of modern metropolis. But, the urban sprawl is a global phenomenon today. A mega-city is a very large city, typically with a total population in excess of 10 million people. In this sense, surveys and projections indicate that all urban growth over the next 25 years will be in developing countries. One billion people, almost one-seventh of the world's population, now live in shanty towns. In many poor countries overpopulated slums exhibit high rates of disease due to unsanitary conditions, malnutrition, and lack of basic health care (< <https://br.pinterest.com/> >).

Therefore, the human society needs urgent solutions. In this perspective, what is there to say about the supporters of Sustainable Development ideas?

The public opinion know that sustainability is a concept created in the eighties and consecrated at environmental conference of Rio de Janeiro, the famous planetary summit called by the institutional actors as Rio-92.

From this event on, the word sustainability has become imperative and more, was integrated in the international environmental lexical as well as in the colloquial language too.

In this same context, Ms. Gro Harlem Brundtland, main organizer of the report Our Common Future, won ostensible visibility. She became for the world eyes, the “Sustainable Development Mother”.

Nonetheless, after more than twenty years of the glorious enthronement of the terminology, nothing seems to be going very well in the field of sustainability. Remembering the British writer William Shakespeare, is possible to say: “There is something rotten in the Kingdom of Denmark”.

To justify this assertion, it’s enough to read some articles and interviews published during Rio + 20 Summit.

Again in Rio de Janeiro, the new United Nations event’s focus was the reevaluation of the terrestrial environment's state of art. Therefore, after twenty years of intense sustainable rhetoric, the concept was in the global agenda again.

In this perspective, with a paradoxical sincerity, Mrs. Brundtland talked with the journalists and her words seemed to synthesize two decades of the preaching in favor to the gospel of the sustainability. Then, Gro Bruntland said abruptly in a public interview:

- Sustainability is still awaiting realization as real practice;
- Sustainability is a terminology used in an abusive manner, without any connection with the intentions that guided the Rio-92 Conference;
- Finally she blurted: *sustainable development has not happened yet.*

Nevertheless, all people know that Mrs. Gro Brundtland is the “Mother” of the Sustainability notion. Then, who could challenge her verdict?

To tell the truth, the statements of Ms. Brundtland, totally confirm thoughts that were already in many participants minds in the environmental discussions and including in Rio-92: the conceptual fragility of sustainable development ²¹.

In fact, many experts warned about the potential volatility of the adjective “sustainable”. In fact, this problem is very similar to several expressions very common in the media, in the academic jargon and political discourses.

Thus, frequently people talk about *popular* education; about *public* policy; about *solidarity* economy and *clean* energy.

These adjectives have a function: to enlarge the meaning of the substantives. It is because factually education *is not popular*, policy *is not public*; the economy *do not have ties with solidarity*; and energy *is not clean*.

In this precise sense, the term sustainable development offers a property that is not compatible with development, at least as in the modern economic system historically has been revealed in a real world. In other words: the modern development *is not sustainable*.

The central question of the sustainability idea seems to be precisely this: it simply suggests qualities that the development in fact doesn't have. Like the large critic opinion argues provocatively, would be like proposing a herbivore lion or one elephant with wings.

Certainly, is obvious that in specific cases would be possible to indicate successful experiences based on sustainable notions. But this is not one true to the economic system as whole. And undoubtedly, the modern economic system follows devastating the Planet as never.

In this point of view, the An Eco Modernist Manifesto doesn't bring news. The document repeats conservative visions about the economic imaginary and objectively doesn't have preoccupations with any kind sustainability.

On the other hand, and regardless if the positions of the signatories are "politically correct" or not, the document effectively reopens the central discussion about development as well as deflates the concept structurally flimsy of the sustainability as a real operational model to achieve environmental governance.

Thus, nobody can accuse signatories of Manifesto as deceivers, that is to say, as proposers of something dissociated of the reality. In this sense, *mutatis mutandis*, the signatories of the An Eco Modernist Manifesto has understood that the conflicts between development and nature have a radical solution: both of them must be entirely dissociated, with the development in an axial position.

Besides, they also claim that the technological gains may enable new forms of relationships in the context of the Anthropocene, one of the key words of the Manifesto ²², a concept very similar to Technosphere ²³.

In concrete terms, in the Modernity, the Anthropocene assumes growingly one form of technical dynamism that creates an autonomous sphere of geospatial actions.

Therefore, the signatories argue that to obtain real and efficient environmental governance to the modern society is necessary first promoting the development, not the nature protection.

Obviously, this assumption is under discussion. But, is a discussion that gained notability because in really, the dream to infuse sustainability in the economic mechanisms that govern the real world only has been explicated until now by one totally idealized notion.

Thus, in the discussions about this environmental dilemma, the people's opinions about the An Eco Modernist Manifesto have a limited function, opinionated, because are not centered in the real focus.

What in fact interested is that the central environmental debate was reopened, by a long time obscured by the sustainability fabulations.

Especially is because this discussion is inseparable of the human destiny on Earth.

VI. MODERNITY, SOCIETY AND ECOLOGY: SEVEN CONTROVERSIAL POINTS ABOUT AN ECO MODERNIST MANIFESTO ²⁴

The An Eco Modernist Manifesto was launched in April 2015. Since then, this text caused many polemics. Some people approved their proposals. On the other hand, others did hard criticism, at least partially, - to the Manifesto's concepts and notions.

The reason of this essay is to organize the arguments that arose in several discussions. Therefore, the intention would be basically identify the more contestable points on the Manifesto, or in others words, bring more density and clarity to the debate. In respect to this proposition, seven controversial points are evident:

1. Anthropocene as a Central Conceptual Reference. More than the defense of nature in itself, the Manifesto focus is the modified space, or anthropogenic space, built by the humans through the exploitation of the natural environment ²⁵. That is: the Anthropocene (Figure 11).

This concept would be pertinent not only for modern times, but also to the Humanity history as a whole. The Manifesto works with a landscape historicized concept, regardless of the social idealizations of the nature.

Thus, the environmental challenge could find solution through of the consolidation of the one *Good Anthropocene*. This is the central notion of the Manifesto: the humans as basic actors of the space organization with suitable actions in space inhabited. And mainly in modern times, with support of advanced technology.

However, the Anthropocene is not unique. The humanized space changed several times throughout history. So, human society built several forms of anthropogenic spaces. In this sense, the modern Anthropocene is one of the historicized landscapes. Not a final result of the one only process.

2. Environmental Impacts as Facts Historically Undifferentiated. Throughout the text, the Manifesto frequently comments about environmental impacts of the human past and in the times of modern society.



FIGURE 11 - A digitalized photo of Western Europe at night, in December, 2011. The name Anthropocene is a combination of *anthropo*, from *anthropos* (Greek: ἄνθρωπος) meaning “human”, and *cene*, from *kainos* (Greek: καινός), meaning “new” or “recent”. As early as 1873, the Italian geologist Antonio Stoppani acknowledged the increasing power and effect of humanity on the Earth's systems and referred to an “Anthropozoic Era”. That is to say: The Anthropocene (< <https://br.pinterest.com/> >).

But for the Manifesto authors, the Modernity and the ancient societies would be objectively associated. Thus, these two historical moments would historically equivalents. In this way, the Manifesto doesn't distinguish the fundamental difference between traditional society's impacts with those that occurred in Modernity times.

It is an unquestionable true that humans always have impacted in the environment. For instance, as much as three quarters of all global deforestation occurred before the Industrial Revolution. It would be one among many devastating actions of traditional societies of the ancient times.

By whatever manner, the differences between modern times and the societies of the past are colossal. Before, the nature wasn't menaced by total extinction. But today, this is unfortunately a reality. So, *the environmental impacts are historically differentiated, which does not allow false and imprudent analogies.*

3. Development is a Technical System, a Hegemonic Model of Technology. In the point of view of the Manifesto's signatories, a technicized model of development is essential to dissociate the modern human society from nature.

In the perspective of Manifesto, the intensification of human activities supported by new technologies would be the key concept to staunch the environmental impacts and even encourage the resumption of biodiversity, the ecological balance as well as the environment preservation.

However, the technology has an historical induction. The new technologies only will be concrete if the economical system incorporates them as its *modus operandi*. Then, if is not this the case, nothing really happens.

In the history, has been demonstrated that many seductive technologies that remained in the books or in the human fabulations. An abstract knowledge or notion is not *a priori* condition to be a real practice ²⁶. *To be real, the technology demands social insertion, one point that the Manifesto exactly doesn't explain.*

4. Optimistic Understanding of Modernity. The Modernity is seen as a model that promotes technological improvements, social development, economic progress and gender equality.

In the perspective of Manifesto, in modern times, the ethnic conflicts were decreased while in the fields, people found the freedom, especially because the hard and grueling agricultural labor was abolished.

However, is needed to pay attention to the absence of social criticism in the discourse of the Manifesto. In the text of Manifesto, there isn't any evaluation about consumerism or about modern lifestyle, two trends viscerally attached to the Modernity environmental crisis.

In this logic, the Modernity is an emblematic fable, an imaginary society, divorced from turbulent and contradictory reality that is its mirror. Indeed, the Modernity offers a generous collection of instabilities that demands solutions too.

Problems created by the logic of modern times, and that remain empowered by contradictory and uneven dynamism of the Modernity.

5. The Comprehension that Poverty, Not the Economic System, is the Central Problem. Although the disparities of consumption and income separating social classes, groups and nations are evident, the Manifesto affirms that poverty, and not the mechanisms that generate economical differences, as the central nexus of the environmental problems.

In the text of the Manifesto, poverty seems to be a mere deviation to be corrected by programmatic actions.

In this sense, for the An Eco Modernist Manifesto, material progress itself will provide the satisfaction of human material needs, paving way for a slowdown in demographic growth and the expansion of consumerism market.

Besides, diverging of environmentalist mainstream concept, in the text of Manifesto, the progress, not the nature preservation codes, will preserve the natural environment.

However, despite of possible good intentions, *certainly is a hard task introduce in the reproduction of modern economy mechanisms social guideline principles that never were its programmatic intention.*

6. Material Growth May Be Unlimited. Implicitly, the Manifesto doesn't accept the notion of limits to growth, iconic paradigm defended, for example, in the Meadows Report ²⁷, launched by the famous Italian economist Aurelio Peccei (Figure 12).

By the signatories of the Manifesto, the Modernity, supported by new technologies, will produce more food using less soil and also will expand the power generation capacity, including a new nuclear energy matrix, based in thorium reactors, perpetuating the system for centuries.

From this material basis, would be possible to eliminate the global warming, ocean acidification, depletion of stratospheric ozone, faunal mass extinction, etc.

So, in the perspective of the Manifesto, the solution of the environmental problems calls for more, not less development. That is to say: more of the same.



FIGURE 12 - Aurelio Peccei (1908-1984), an influential Italian scholar and industrialist, is best known as the founder and the first President of the Club of Rome, an organization which raised considerable public attention in 1972 with its Limits to Growth. Aurelio Peccei was a very important businessman too. After the Second War, Peccei was engaged in the rebuilding of Fiat. In 1964, Peccei was asked to become President of Olivetti, with lucid and brilliant action (Photo: < <http://www.clubeofrome.org/about-us/history/> >).

But, all goods of the Planet have limit, as well as human beings and the wildlife. This is clear a lot, except in the hypothesis that economics and theology are oriented by same sense.

Objectively, limits are urgent, and a social policy too. This is because the history is a social process, neither limited nor streamlined by mere technological features.

7. The Cities as an Emblematic Human Omphalos ²⁸. Contesting clearly the seminal roots of the environmentalists ideas - impregnated by images of the natural environment and traditional living spaces: forests, lakes, sanctuaries of wild life, oceans, rural communities, exotic landscapes and small cities - the An Eco Modernist Manifesto adopts the modern city as its icon supreme.

Thus, the Manifesto reaffirms the bond that historically articulates Modernity with the emergence and hegemony of urban environment. The world is now an urban planet.

In fact, by 2008 over 50 percent of the global population was living in urban areas. It was 3 percent in 1800. Besides, in the modern economy, cities account for some 70% of Global Gross Domestic Product (GDP).

However, the Manifesto does not identify the large contradictions of the modern metropolis, as well as social and economic environment urban distortions. Always powerful, the metropolis contradictions are the more deep nexus of the modern city, mainly in the Third World ²⁹.

But, an urbanization of poverty has generated new Third World's mega-cities, problematic, populous and turbulent, a "Planet of Slums", such as the north-American geographer Mike Davis harshly defined.

In this context, urban growth has outpaced the ability of governments to build essential infrastructures, and one in three urban dwellers lives in slums or informal settlements, places with impressive expansion in the last decades ³⁰.

In the year 2010, United Nations document estimated 828 million people living in slum conditions, representing around one third of the world's urban population. The vast majority of slums, more than 90%, are located in cities of developing countries.

The slums are home to a wide array of infectious diseases (including tuberculosis, hepatitis, dengue fever, pneumonia, cholera and malaria), which spread easily in highly concentrated populations, bad sanitary conditions that are only one little example of the harsh reality shared by million people ³¹.

As once said the Brazilian geographer Milton Santos (Figure 13), the cities have been an emblematic representation of inequality, adorned by political and ideological mystification. After all, to the “favela people”, there is any urban network ³².

Then, the city may be the material omphalos of the modern world. Nobody doubts. But it is also the omphalos of the contradictions generated during its long history.



FIGURE 13 - Milton de Almeida Santos (1926-2001), is the most famous Brazilian geographer. Santos was laureate with Vautrin Lud Prize (1994), the highest award that can be gained in the field of geographical knowledge, a recognizing of his works, most of them, centered in the spatial analysis and Brazilian urbanization (Photo: www.onordeste.com).

It would be pertinent to argue that an urban system functionally contradictory don't is conceptually replaced by a mystified, idealized or allegorical vision of the cities.

Today, almost all big metropolis of the world are located in poor countries, cities abolished and totally invisible in speech of the Manifesto.

The urban world only will be near to omphalos idea when occur a real discussion about of concept of metropolis, with human beings in evidence, in the center of all preoccupations.

These would be the controversies. We expect more discussions, more opinions and more concepts to enrich this debate.

VII. BRAZILIAN GARBAGE AND THE RECYCLABLE MATERIAL COLLECTORS ³³

The problems related to solid residues have been growing in contemporary society, implying the deterioration of the quality of life, particularly in large urban centers.

The urban solid residues or household residues, generated by several activities in modern society, may result in several risks to public health, an equation that presents many interfaces: social, economic, political and administrative questions.

The degradation of the environment cannot be disconnected from a context including physical health problems, psychological disorders and socio economic asymmetries.

As such, this scenario can be attributed to a set of problems whose structural causes presuppose the environmental degradation unchained by the modern goods production system, which, countersigned by the demands of a consumerist *modus vivendi*, provokes a huge pressure over the natural environment ³⁴.

Ipso facto, such model legitimates the predatory use of natural resources, the authentic *raison d'être* of the Modern Era.

In that sense, we must point to the links between this consumer society and a market dynamics strengthened by the concern with generating growing profits, stimulating an unceasing scaling of more production and more consumption.

The result observed is a maximized withdrawal of natural inputs, a process made concrete the transience with which modern society interacts with the material world, matrix aspect of the social, economic and cultural system imposed by the western world to the Humanity as whole.

Regarding public health, the Urban Solid Waste (USW), has an essential role in the epidemiological structure of communities. Indeed, we should highlight a line of transmission of diseases caused by several vectors, which find in the mountains of garbage the more appropriate conditions to proliferate ³⁵.

Pari passu, when concerning environmental problems, the waste contaminates the air, the soil and, indirectly, the superficial and ground water.

From the environmental and the public health viewpoint, the incorrect disposal of the solid residues develops direct sequels (when there is close contact between the human organism and the pathogenic agents in the waste) and indirect sequels (through the amplification of some risk factor acting without control upon the surroundings), both incorporating a set of serious sanitary problems.

It should be remembered that this scenario of harmful effects - developing a list which gets even extensive with research studies on the theme that must be developed - is generated by a mass of residues which, technically, due to its umbilical connection with a vast net of production and consumption flows, have confirmed its large heterogeneity.

Such peculiarity allows that specialized literature identify, according to the physical taxonomy of the household garbage, three great fractions, each one encompassing a complex web of implications to the waste management.

Thus, the garbage could be defined like: the organic fraction, damp or wet; the inorganic or dry fraction; and the remaining fraction, considered useless and unserviceable, called “rejeito” in Brazil.

The food garbage, damp or wet (Urban Biodegradable Waste: UBW), corresponds to the largest part of household residues and consists basically of culinary waste.

The damp fraction may be reincorporated to the energy flows and material cycles of the nature through composting, the process which transforms almost entirely the culinary waste mass into a partner of soil revitalizing, and can be used in both public and domestic gardening.

In Brazil, the organic fraction ranges, according to the source consulted, between 52 and 67% of household residues.

The inorganic or dry fraction, otherwise, presents in its composition the “classic” materials coveted by the recycling industry, hence its designation as “recyclable fraction” in many texts, despite justified conceptual objections ³⁶.

It consists of metals (steel, copper, brass, gold, silver, aluminum and others, in the form of electronic waste, metallic packaging, small metal objects, industrial pieces waste, etc); glass (jars, bottles, glass splinters, industrial fragments, etc); paper and cardboard paper (of all sorts); and plastic scrap (of all sorts).

Although the existing data about the dry fraction is controverse, specialists believe that this waste segment represent something between 20% and 30% of the total MSW in Brazil.

Finally, among the unserviceable materials we may list toilette trash, cardboard paper impregnated with oil, photos, dirty newspapers, fax paper and paper napkins, cellophane, ashes, cigarette butts, disposable diapers, pottery, mirrors, broken crystal, pesticide cans, light bulbs, fuses, debris and others. That fraction of USW would correspond to 15% of the gravimeter profile of the garbage ³⁷.

As to the deleterious effects of garbage, these could be synthesized in a group that encompassing three factors: work activities, environmental impacts and alimentary problems.

The occupation-related factor can be characterized by the contamination of collectors, who manipulate hazardous substances many times without any kind of protection. Although a problem that concerns a small part of the collector's population, the difficulties include several and very aggressive contagion forms.

Regarding the environmental factor, the problem is characterized by the dispersion through waste's contaminating agents, originating from the UBW, hospital waste and dead animals, unchaining infestations through the leachate ³⁸ in the soil surface or in water bodies, such as rivers, lakes, water of phreatic zone as well as deep aquifers.

Another problem stems from emissions of methane gas ³⁹, a kind of landfill gas and notably, a Greenhouse Effect Gas (GHG) extremely aggressive, generated by the deterioration of putrefactive garbage brought about by anaerobic bacteria.

In a short list of negative phenomena with roots in the garbage, many of which provoke an impact on the environment in a vast scale in the time and the space, is possible to mention the ones pertinent of the dry fraction of Solid Waste (SW).

The trash of modern times is characterized by its high level of harmfulness, latent danger and difficult deterioration, always provoking somehow of menace to all forms of life.

The cast of elements persisting in the environment which have garbage as a vector consists of thousands of substances, a number that becomes larger day by day. Although the effects of synthetic materials are not fully known until now, the

expansion of the research carried out in the last decades points to, for example, a wide range of side effects to people's health.

At last, the alimentary factor, characterized by the contamination of the collectors or the residents around the dumps, is other problematic issue⁴⁰. Basically, the problem occurs due to the ingestion of food leftovers by waste collectors and by the animals that live in these spaces, feeding on with residues *in natura*, frequently shared or disputed with humans.

When interacting with the food chain, those animals can transmit a series of diseases, impacting the herd and the human communities, in this case the final link in the food chain.

Therefore, the urban solid residues must be understood as a public health problem. The consequences of their inadequate management and final disposal end up by reflecting directly or indirectly on the population's health.

On the other hand, the risks related to the context and to the activity of household residues collection seem well defined in the eyes of the scientific community in general.

The intoxication ways, toxicity itself and the damage to health and the environment - through collection and through the dumping and/or final confinement spaces inherent to the logistics of management of the residues - nowadays seem to be one consolidated knowledge, based on related studies, all evincing a diversity of risks.

But, the garbage collected daily in the urban areas of the cities is transported to precarious final destination areas. Oftentimes, In Brazilian cities, the residues are still indiscriminately thrown away in the open air, in the so-called dumps, “lixões” in Portuguese⁴¹.

This inadequate final confinement of the MSW oftentimes provokes soil pollution and the contamination of the atmosphere and the freshwater, affecting millions people (Figure 14).

The endangerment of the liquid bodies happens through phenomena such as leaching. In air pollution are noted gaseous effluents and particulates thrown at the atmosphere, originating from several anthropogenic activities related with garbage.



FIGURE 14 - The deficient management of waste in Brazil is a problematic issue to the cities, including the metropolitan areas. Brasilia (photo), for instance, closed its “Lixão” only in 2018 (O Correio Braziliense, January, 2, 2018).

As a rule, such remains and effluents constitute the final result of the transformation of assorted materials and substances into useless residue, disposed of in defiance of the reuse and recycling strategies.

The adverse effects of the city's solid residues on the environment and on collective and individual health are fully known and researched by numerous authors and specialists.

They point to the deficiencies in the collection and final disposal systems, as well as to the lack of a protection policy regarding the worker's health, both factors strongly affecting the configuration of harmful and undesirable effects.

According to a research study carried out in 2012 by Institute of Applied Economic Research (Instituto de Pesquisas Econômicas Aplicadas: IPEA), 183,5 thousand tons of solid residues are currently collected per day in Brazil, a service delivered to 90% of the all households, representing 98% of urban households. But only 33% of the rural households.

Based on quantitative surveys, Brazilian organic matter would correspond to 51.4% of all garbage's day-by-day of urban centers concerning to Residential Solid Waste (RSW) collected by public services. As to the dry fraction, the total amount would reach 31.9% of the total household waste (metal, plastic, glass and cellulosic materials).

Among the 5.565 Brazilian municipalities, a group consisting of 2.535 municipalities (45.55% of the total) confirms the existence of Waste Sorting Collection (WSC) organized by municipal public programs. Therefore, at first sight, the numbers could point to some progress in WSC initiatives in Brazil.

Nevertheless, the percentages can be questioned due to the fact that oftentimes, the municipal initiatives involve the use of clientelistic practices, commonly mixed with political marketing.

Therefore, it is important to stress that some WSC activities consists only an implementation of "recycling islands", receiving a voluntary delivery of recycling materials in few and isolated recycling ecopoints plotted randomly, or simply to formalize "green agreements" with cooperatives, demonstrating in this way all good ecological intentions of the bureaucracy to the public opinion.

In what concerns the number of recyclable material collectors working in Brazil, the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística: IBGE) estimates a body composed by only 70 thousand workers ⁴², a number largely criticized by the Brazilian garbologists.

Nonetheless, The Instituto Polis, a Brazilian entity headquartered in São Paulo and The Caritas International, a Roman Catholic Church organization, has estimated for a demographic universe consisting of 500 thousand people or more.

In turn, the Recyclable Material Collectors National Movement states that 800 thousand workers are active in recyclable material collection in Brazil. The gap suggested by the IPEA's analysis, taking all those sources into account, would signal to a set of between 400 and 600 thousand collectors in Brazilian cities.

Although there are no doubts about the importance of the urban sanitation activity to the environment and to the community's health, such perception has not been translated into effective actions that might produce qualitative change to the situation of the urban solid residues management in Brazil and Latin America nations,

where it presents a wide range of deficiencies. The assertion is also valid when the focuses of the debate are the collectors.

According to information from the Recyclable Material Collectors National Movement (in Portuguese, Movimento Nacional de Coletores de Recicláveis or the acronym MNCR), the country has around 600 formal cooperatives, comprised of approximately 40 thousand collectors.

Nevertheless, only 2.5% of all municipalities keep a partnership with those organizations. Besides, is needed to say that of the existing cooperatives, comprising only 10% of all collectors, there are discrepancies in terms of logistics, equipment and level of efficiency.

Several analysis points to 60% of the cooperatives offering bad working conditions and low remuneration to all their members. The average income of this category of workers lies below the minimum wage, calculated between R\$ 420 and R\$ 520⁴³.

The workers making a living out of recyclable material collection, understood as a means of survival and obtaining income, are still seldom studied from the viewpoint of public health, despite the growing number of academic studies focused on the category.

The theme presents social relevance due to the large number of recyclable material collectors all over the country, even if we disregard the existence of a significant segment made up of the population living in dumps. Some studies brought to light that in the late 90's there were 45 thousand children and teenagers living and working in dumps.

Consequently, reality as experienced by recyclable material collectors evinces precarious working conditions due to their close contact with refuse in disposal areas, landfills, dumps and city streets.

In this order of explanation, surveys and investigations have proposed a collector's profile subdivided into three categories: street collectors, cooperative collectors and dump collectors.

Street collectors are the ones picking up residues from public places or from the waste delivered directly by the population, local stores and industrial plants. A distinctive trait of this group is that they possess their own cart or some other kind of vehicle adapted for the transportation of loads.

The cooperative collectors, also referred to as self-managed collectors, are those who deliver selective collection services with more value added, articulately and organizationally, generating work and income in a more systematized way.

Objectively, the cooperatives generally allow for the absorption fringe urban workers, alien to the formal work market, inserting them in an institutional structure which ensures them, though minimally, some rights, income and citizenship.

Concerning dump collectors, the segment is defined by a context of clear social exclusion ⁴⁴. Disconnected from any kind of assistance by the government, and working directly in the municipal final disposal spaces, the dump's collectors make up the segment most weakened in the population of Brazilian collectors.

In view of the high unemployment rate, the survival strategy found by this excluded population is to “collect garbage” as a means to obtain income to make a living.

When collecting and sorting out recyclable materials, in dumps, walking around the streets or obtained from waste generating centers all over the country, the waste collectors materializes an important link in the waste management system and in the recycling activity circuits.

Despite their importance to the environmental balance, garbage collectors work without a contract and deprived of any social security benefits. Thus, they reveal traits similar to those of other groups excluded by Brazilian society, exposing themselves to risks and loads responsible for damage to their health.

It should be remembered that to the situation described as well as the low income brought by that kind of work is also commonly associated to a scenario made up of diseases that aggravate the collectors' population working conditions and their surviving.

Undoubtedly the collectors constitute a risk community, not only in terms of their own physical integrity and health, but also due to the consequences of a condition of social, cultural and economic marginality (Figure 15).

Shaped in a context of evident socioeconomic asymmetry, the inequalities have constantly made collectors be seen through a universe of negative meanings inherent to the hegemonic perception of garbage.



FIGURE 15 - Estamira Gomes da Silva (Estamira), was a woman who worked with the collection of garbage in the landfill Jardim Gramacho, currently closed, that received the waste generated by the city of Rio de Janeiro. She became famous for his philosophical discourse, a mixture of extreme lucidity and madness, with subjects like God, life, work, and existential reflections on modern society. For her, said Marcos Prado, director of the documentary “Estamira” (2005), “true trash were bankrupt values of society”. The documentary Estamira had international repercussion, with many awards and recognition international (Photo: Marcos Prado, Documentary Estamira, 2005).

It should be pointed out that there are few studies related to the health hazards inherent to the collection activity. Concomitantly, it is known that accidents such as cuts, perforations, burns and dermatitis happens frequently, as a direct consequence

of the life in the dumps, threats and physical violence, food poisoning and diseases provoked by parasites.

Several work accidents are frequently caused by lack of adequate working condition: collectors hit by waste trucks, cuts and injuries and also infestations by dogs, rats and poisonous insect bites. The esthetic issue, not always remembered, is also important because the permanent exposure to the garbage incites a lot of psychological discomfort.

Another block of potential possibilities of risk to these collectors' health and quality of life concerns the psycho-social problems. Must be Acknowledged, the life of collectors of recyclable materials is marked by violence, by humiliation and social exclusion. Moreover, their activities are frequently disqualified and unrecognized by society (affluent or not).

The same happens with the municipal administrations. The bureaucracy continuously persecutes the collectors' population, understood as problem to the urban traffic, and besides, they are considered dirty, dangerous and not racially white, a serious problem in Brazilian institutional society, impregnated by racist paradigms, with a long history of racial oppression and black slavery.

In social and economic plan, the collectors' activity routine is permeated by privations as well as invariably marked by hard working conditions, demanding a lot of physical efforts.

The habitual daily working hours can last for over twelve hours uninterruptedly. Unequivocally, collection is a strenuous activity, mainly if we consider the conditions to which workers are submitted.

A good example of such conditions are the carts pulled manually through the streets, transporting in average more than 200 kg of refuse, regularly facing heavy traffic and the hostility of drivers. Collectors transport the equivalent to 4,000 kg monthly.

It is known that collectors cover more than twenty km per day, an effort that often receives in turn the exploitation of warehouse owners dealing recovered materials (scrapped material dealers), who pay them very low values or take advantage of those collectors' social fragility.

The precariousness of work contributes to the prevalence of this scenario: this informal occupation makes collectors vulnerable once they are not entitled to labor and/or welfare rights.

An apparently contradictory situation, informality induces the collectors to move in a work parallel market, governed by presuppositions which, paradoxically, associate their work with highly capitalized economy circuits.

This contradictory nexus is maintained by the absence of recognition for their work by a large share of the public opinion and also by the governmental actors.

Meanwhile, as a form of reaction to unemployment and to the situation of exclusion, a tendency to getting organized in waste recycling cooperatives, inspired and supported by the principles of solidarity economy, has materialized in the last years.

The lack of opportunity in the labor market has induced a significant contingent of unemployed workers to join to the waste sorting work as a means to guarantee their survival.

In Brazil, traditionally the *modus operandi* of material recovery is ensured by the informal collection of materials found in the streets and dumps. It is possible to note that despite being discriminated and disregarded by the fragile links maintained with the *status quo*, the waste collection configures an activity which concretely prevents the abduction of these unemployed workers by even more somber forms of social exclusion.

In this line of argumentation, the activity becomes a kind of last link connecting collectors to the social system which excludes and rejects them.

Another relevant view is that the working conditions, though extremely unhealthy, allows an abstract “freedom” concerning to working hours and behavior codes which doesn’t exist in permanent activities situations; and that is the reason why not few collectors refuse job opportunities in the formal work market, preferring the activities related to recyclable material sorting.

Garbage collectors are responsible for practically all material recycled by the Brazilian national industry ⁴⁵, placing Brazil as one of the top countries in the ranking of recycling of materials such as aluminum, plastic, paper and cardboard paper.

In this pathway, despite all difficulties related to work, made more serious by the lack of government support and by several kinds of social prejudice, these informal collectors manage to survive and at the same time take care of the environment, that is, the space common to most Brazilians: the urban space.

Therefore, we can consider garbage collectors as environmental and economic agents. Even better, as *de facto*, though not *de jure* workers.

That having been said, the current analysis aims to analyze the profile of collectors and their perception of their situation as individuals and citizens, as well as the problems involving garbage, particularly the recyclable materials.

BIBLIOGRAPHY

- ABRELPE. *Panorama dos Resíduos Sólidos no Brasil* 2014. Associação Brasileira de Empresas de Limpeza Pública e Resíduos Especiais. 2015;
- AGOSTINI, Renata et MEYER, Carolina. *Class C Hits the Web*. In Exame - Special English edition, nº. 2, December 12, 2010, pp. 10-21 São Paulo (SP): Editora Abril. 2010;
- ALIER, Joan Martínez. *El Ecologismo de Los Pobres - Conflictos Ambientales y Lenguajes de Valoración*. Barcelona (Espanha): Icaria-Antrazyt-Flacso. 2005;
- ÂNGELO, Cláudio. *Há abuso no uso de 'sustentabilidade', diz criadora do termo*. Interview with Gro Harlem Brundtland published by Folha.com., March 3, 2012. Access on line: < <http://www1.folha.uol.com.br/ambiente/1065497-ha-abuso-no-uso-de-sustentabilidade-diz-criadora-do-termo.shtml> >. 2012;
- BOYDEN, Stephen et CELECIA, John. *Ecologia das Megalópoles*. In: revista O Correio da UNESCO, junho de 1981. Rio de Janeiro (RJ): UNESCO. 1981;
- CALDERONI, Shabetai. *Os Bilhões Perdidos no Lixo*. 3ª edition. São Paulo (SP): Humanitas Livraria/FFLCH/USP; 1999;
- CÂMARA CASCUDO, Luís da. *Made in Africa*. 3ª edition. São Paulo (SP): Editora Global. 2001;
- CAMPOS, Heliana Kátia Tavares. *Renda e evolução da geração per capita de resíduos sólidos no Brasil* (Evolution of income and per capita generation of solid wastes in Brazil). In Engenharia Sanitária e Ambiental, vol. 17, nº. 2. Rio de Janeiro (RJ): Apri/June 2012;
- CEMPRE. *CEMPRE Review 2013*. Publicação elaborada com base em dados gerais consolidados até 2012. Compromisso Empresarial para Reciclagem (CEMPRE). 2014;
- CHELLENBERGER, Michel et alli. *An Eco Modernist Manifesto*. Oakland: Breakthrough Institute, EUA, 2015. Translation from English to Portuguese by Maurício Waldman and Tadeu Alcides Marques. Published by Editora Kotev. 2015;

CMMAD, *Nosso Futuro Comum*. (Our Common Future, Relatório da Comissão Mundial sobre Meio Ambiente e Desenvolvimento da ONU) Rio de Janeiro (RJ): Fundação Getúlio Vargas, 1988;

DAVIS, Mike. *Planet of Slums*. London & New York: Verso Editorial. 2006;

DURAN, Marina. *O Medo e os Vínculos Sociais no Brasil*. Tese (Doutorado em Ciências Sociais). São Paulo (SP): Pontifícia Universidade Católica de São Paulo (PUC-SP). 2005;

ELLIOTT, Lorraine. *The Global Politics of the Environment*. London (United Kingdom): Macmillan. 1998;

EMMOTT, Stephen. *10 Bilhões*. Rio de Janeiro (RJ): Editora Intrínseca. 2013;

GARCIA-PEREZ, Javier, FERNÁNDEZ-NAVARRO, Pablo, CASTELLÓ, Adela, LÓPES-CIMA, Maria Felicitas, RAMIS, Rebeca, BOLDO, Elena et LÓPES-ABENTE, Gonzalo. *Cancer Mortality in towns in the vicinity of incinerators and installations for the recovery or disposal of hazardous waste*. In *Environmental Health*, pp. 31-44, October 2012. 2012;

HILLE, John. *The Concept of Environmental Space - Implications for Policies, Environmental Reporting and Assessments*. Expert's Corner 1997/2. Vaduz (Luxemburg): European Environment Agency. 1999;

HOEKSTRA, Arjen Y.; CHAPAGAIN, Ashok K.; ALDAYA, Maite M et MEKONNEN, Mesfin M. *Manual de Avaliação da Pegada Hídrica: Estabelecendo o Padrão Global*. Edição em língua portuguesa. Coedição Nature Conservancy, World Wide Fund for Nature Foundation, Water Footprint Network e Escola de Engenharia de São Carlos da Universidade de São Paulo (EESC-USP). 2012.

JAGUARIBE, Cláudia. *Entre Muros*. São Paulo (SP): Editora Cosac Naify. 2012;

LIDDELL, Henry George et SCOTT, Robert. *A Greek-English Lexicon*. Oxford (United Kingdom): Perseus Digital Library. 1940;

LOBINA, Emanuele. *Problems with Private Water Concessions: A Review of Experiences and Analysis of Dynamics*. In: *International Journal of Water Resources Development*, volume 21, pp. 55-87. Oxfordshire (Reino Unido): Taylor & Francis Group. 2005;

LUNDGREEN, Karin. *The Global Impact of E-Waste: Addressing the Challenge*. Genebra (Switzerland): SafeWork and Sector - International Labour Organization International Labour Organization (ILO). 2012;

MEADOWS, Dennis L. *et alli* (Orgs.). *Limites do Crescimento: um relatório para o projeto do Clube de Roma sobre o Dilema da Humanidade*. (Coleção Debates, nº. 90). São Paulo (SP): Editora Perspectiva, 1973;

MEKONNEN, Mesfin M. *et* HOEKSTRA, Arjen Y. *National Water Footprints Accounts*, Volume 1, Value of Water Research Report Series nº. 50. Delft (Netherlands): UNESCO and IHE Institute for Water Education. 2011;

NETO, João Tinoco Pereira. *Gerenciamento do Lixo Urbano - Aspectos Técnicos e Operacionais*. Viçosa: Editora UFV (MG), 2007;

PORTA, Daniela, MILANI, Simona, LAZZARINO, Antonio, PERUCCI, Carlo *et* FORASTIERE, Francesco. *Systematic review of epidemiological studies on health effects associated with management of solid waste*. In Environmental Health, pp. 1-14, December 2009. 2009;

RATHJE, William *et* MURPHY, Cullen. *Rubbish! The Archaeology of garbage*. Tucson (Arizona, EUA): The University of Arizona Press. 2001;

ROYTE, Elizabeth. *Garbage Land: On the Secret Trail of Trash*. Nova York (EUA): Back Bay Books. 2005;

SANTOS, Milton. *Metamorfoses do Espaço Habitado*. São Paulo (SP): Editora de Humanismo, Ciência e Tecnologia (HUCITEC). 1988;

_____. *Manual de Geografia Urbana*. (Coleção Geografia: Teoria e Realidade). São Paulo (SP): Editora de Humanismo, Ciência e Tecnologia (HUCITEC). 1981;

_____. *Por uma Geografia Nova*. São Paulo (SP): coedição Editora da Universidade de São Paulo (EDUSP) e Editora de Humanismo, Ciência e Tecnologia (HUCITEC). 1978;

SETAC. *Guidelines for Life-Cycle Assessment: A 'Code of Practice'*. Bruxelas (Bélgica): Society of Environmental Toxicology and Chemistry (SETAC). 1993;

SINGER, Paul Israel. *Economia Política da Urbanização*. 2ª edition. São Paulo: Editora Contexto. 2002;

THIEL, Hjalmar. *Anthropogenic Impacts on the Deep Sea*. In: *Ecosystems of the World: The Deep Sea*. Amsterdam (Netherlands): Elsevier. 2003;

TUAN, Yi Fu. *Topofilia - Um Estudo da Percepção, Atitudes e Valores do Meio Ambiente*. São Paulo (SP): Difusão Européia do Livro (DIFEL). 1980;

UNDESA: *World Population Prospects: The 2015 Revision*. United Nations Department of Economic and Social Affairs - Population Division. United Nations (New York). 2015;

UNMÜSSIG, Barbara, SACHS Wolfgang *et* FATHEUER, Thomas. *Crítica a la Economía Verde - Impulsos para un futuro social e ecológicamente justo*. Textos sobre Ecología. Fundación Heinrich Böll. México (DF): México. 2012;

VERNADSKI, Wladimir. *The Biosphere and the Noosphere*. USA: Executive Intelligence Review. 2005;

WALDMAN, Maurício. *Eco-Logia: Tudo o que não te ensinaram em Sala de Aula*. E-text published by Editora Kotev and posted by Kobo-Rakuten. Access and information: <https://store.kobobooks.com/pt-br/ebook/eco-logia-tudo-o-que-nao-te-ensinaram-em-sala-de-aula> and <http://kotev.com.br/?product=eco-logia-tudo-o-que-nao-te-ensinaram-em-sala-de-aula>. São Paulo (SP): Editora Kotev. 2016;

_____. *A Eco-92 e a Necessidade de um Novo Projeto*. E-book published by Editora Kotev and posted by Kobo-Rakuten. Access and information: <https://store.kobobooks.com/pt-br/ebook/a-eco-92-e-a-necessidade-de-um-novo-projeto> and <http://kotev.com.br/?product=a-eco-92-e-a-necessidade-de-um-novo-projeto>. São Paulo (SP): Editora Kotev. 2016;

_____. *Falando sobre Lixo*. E-book published by Editora Kotev and posted by Kobo-Rakuten. Access and information: <https://store.kobobooks.com/pt-br/ebook/falando-sobre-lixo> and <http://kotev.com.br/?product=falando-sobre-lixo>. São Paulo (SP): Editora Kotev. 2016;

_____. *Planeta Lixo: A Radiografia dos Resíduos Globais*. E-book published by Editora Kotev and posted by Kobo-Rakuten. Access and information: <https://store.kobobooks.com/pt-br/ebook/planeta-lixo> and <http://kotev.com.br/?product=planeta-lixo-a-cartografia-dos-residuos-globais>. São Paulo (SP): Editora Kotev. 2016;

_____. *Reciclagem, Preservação Ambiental e o Papel dos Catadores no Brasil*. E-book published by Editora Kotev and posted by Kobo-Rakuten. Access and information: <https://store.kobobooks.com/pt-br/ebook/reciclagem-preservacao-ambiental-e-o-papel-dos-catadores-no-brasil> and <http://kotev.com.br/?product=reciclagem-preservacao-ambiental-e-o-papel-dos-catadores-no-brasil> . São Paulo (SP): Editora Kotev. 2016;

_____. *A Memória Viva da Rainha Nzinga: Identidade, Imaginário e Resistência*. E-book published by Editora Kotev and posted by Kobo-Rakuten. Access and Information: <https://store.kobobooks.com/pt-br/ebook/a-memoria-viva-da-rainha-nzinga> and <http://kotev.com.br/?product=a-memoria-viva-da-rainha-nzinga-identidade-imaginario-e-resistencia>. São Paulo (SP): Editora Kotev. 2016;

_____. *Hegemonia Ocidental: Processo Histórico e Social*. E-book published by Editora Kotev and posted by Kobo-Rakuten. Access and Information: <https://store.kobobooks.com/pt-br/ebook/hegemonia-ocidental> and <http://kotev.com.br/?product=hegemonia-ocidental-processo-historico-e-social> . São Paulo (SP): Editora Kotev. 2016;

_____. *Dilemas da Gestão do Lixo: Catadores, Incineração e Reciclagem*. Postdoctoral Technical Report. Programa Nacional de Pós Doutorado da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (PNPD-CAPES). 2015;

_____. *Waters of Metropolitan Area of São Paulo: Technical, Conceptual and Environmental Aspects*. Chapter 53, pp. 1.282-1315. In *Sustainable Water Management in the Tropics and Subtropics - Case Studies in Brazil*. Brazil-Germany: Fundação da Universidade Federal do Pampa (Brazil) and Kassel Universität (Germany), 2012;

_____. *Lixo Domiciliar no Brasil: Dinâmicas Sócio-Espaciais, Gestão de Resíduos e Ambiente Urbano*. Postdoctoral Research Report to Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq: National Council for Scientific and Technological Development) and Geography Department of Geosciences Institute - UNICAMP (State University of Campinas). January 1, 2010 - February 22, 2011;

_____. *Lixo: Cenários e Desafios: Abordagens Básicas para Entender os Resíduos Sólidos* (Waste: Scenarios and Challenges - Fundamental Approaches to Solid Waste Knowledge). São Paulo (SP): Cortez Editora, 2010;

_____. *Reciclagem, Preservação Ambiental e o Papel dos Catadores no Brasil*. In: *Anais do VI Simpósio Internacional de Qualidade Ambiental - Na Busca da*

Sustentabilidade, vol. 1. pp. 1-16. Porto Alegre: ABES, Associação Brasileira de Engenharia Sanitária e Ambiental - Seção Rio Grande do Sul, 2008;

_____. *Sacolas Plásticas e de Papel: Aspectos Técnicos, Ambientais e Mercadológicos* (Plastic bags and Paper bags: Technical Aspects, Environmental and Merchandise). Technical Report - Mercadology. São Paulo (SP): Nobelpack. 2007;

_____. *Meio Ambiente & Antropologia* (Environment & Anthropology). Coleção Meio Ambiente, nº. 6. São Paulo (SP): Editora SENAC. 2006;

_____. *Ecologia e Lutas Sociais no Brasil*. Coleção Caminhos da Geografia, 8ª edition. São Paulo (SP): Editora Contexto. 1992;

_____. *Divisão Internacional dos Riscos Técnicos e Ambientais*. In revista Tempo e Presença, nº. 261, edição especial de Meio Ambiente, Janeiro-Fevereiro de 1992. São Paulo e Rio de Janeiro (SP-RJ): Centro Ecumênico de Documentação e Informação (CEDI). 1992;

_____. *Okologie oder Ocollorgie? Lutzemberger: Umweltpolitik auf neoliberal - eine polemik*. In: Lateinamerika Nachrichten, nº. 205-20, pp. 10-14. Berlin (República Federal da Alemanha): Forschungs und Dokumentationszentrum Chile-Lateinamerika. 1991;

_____. *Oito Críticas Ecológicas à Conversão da Dívida*. In: Conversão da Dívida e Meio Ambiente, Paulo Schilling (Org.). São Paulo e Rio de Janeiro (SP-RJ): Centro Ecumênico de Documentação e Informação (CEDI) e Editora Global. 1991;

_____. *Ecologia e Movimentos Sociais: Breve Fundamentação*. In: Hidrelétricas, Ecologia e Progresso. São Paulo e Rio de Janeiro (SP-RJ): Centro Ecumênico de Documentação e Informação (CEDI). 1990;

_____. *Ecologia na Perspectiva dos Trabalhadores*. In: revista Tempo e Presença, nº. 230, pp. 4-5. São Paulo e Rio de Janeiro (SP-RJ): Centro Ecumênico de Documentação e Informação (CEDI). 1988;

WALDMAN, Maurício et FATHEUER, Thomas. *Zum Beispiel Sao Bernardo*. Depoimento prestado ao jornalista Thomas Fatheuer sobre conflitos socioambientais relacionados à Represa Billings. In Latein Amerika Nachrichten, edition nº. 221, pp. 18-24, 01-11-1992. Berlin (República Federal da Alemanha): Forschungs - und Dokumentationszentrum Chile-Lateinamerika. 1992;

_____. et FATHEUER, Thomas. *Ecologia: Um Novo e Antigo Projeto Global*. Artigo publicado na seção Painei, Caderno ABCD do Jornal Folha de São Paulo, December 12, 1991 edition. São Paulo (SP). 1991;

WALDMAN, Maurício et MEROLA, Yula de Lima. *Work and Health: A Study on Recyclable Material Collectors in Poços de Caldas, MG*. Paper published by Revista do Instituto de Pesquisas Hospitalares (IPH). Vol. 1, pp. 111-130, 2014. Access: < http://www.mw.pro.br/mw/PaperMWYM_Pocos_Collectors2015.pdf >.

HOME-PAGES

IBGE: Instituto Brasileiro de Geografia e Estatística

< <http://www.ibge.gov.br/> > Last access: October 22, 2015

IBGE-PNAD: Pesquisa Nacional por Amostra de Domicílios

< <http://www.ibge.gov.br/> > Last access: October 10, 2015

IPCC - Intergovernmental Panel on Climate Change

< <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html> >. Last access: October, 29, 2015

PNUMA - Programa das Nações Unidas para o Meio Ambiente:

< www.pnuma.org.br/ >. Last access: March 22, 2014

The Economist

< <http://www.economist.com/> >. Last access: September 23, 2015

UNEP - United Nations Environment Programme

< <http://www.unep.org/> >. Last access: September 10, 2015

UN-Habitat - United Nations Human Settlements Programme

< <http://unhabitat.org/> >. Last access: August 29, 2016

¹ **SEVEN TEXTS ABOUT ECOLOGY: POINTS OF VIEW OF ONE BRAZILIAN ACTIVIST**, ISBN: 1230001328479, is an e-book posted by **Editora Kotev (Kotev ©)**, in Kobo Platform, August 30, 2016. In May 2018, this book was posted in Internet (PDF Format, Free Access). Cover: Photography of Cláudia Jaguaribe, published in Entre Muros (Cosac Naify. 2012).

² **More information and External links:**

Wikipedia (English Edition): http://en.wikipedia.org/wiki/Mauricio_Waldman

Official Academic Curriculum at Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq): <http://lattes.cnpq.br/3749636915642474>

Maurício Waldman - Textos Masterizados: <http://mwtextos.com.br/>

Waldman Official Academic Web Portal (Portuguese): www.mw.pro.br

Academia.edu: <https://usp-br.academia.edu/Maur%C3%ADcioWaldman>

Professional Curriculum (one page): http://mw.pro.br/mw/mw_cv_1_pg.pdf

E-mail: mw@mw.pro.br

³ Article published by Brazilian press in 2015 and posted in several home-pages in the same year. This edition was enlarged with notes, figures and more information.

⁴ Etymologically, William Rathje comments the terminology associated to “waste” as follows: “Several words for the things we throw away - “garbage”, “trash”, “refuse”, “rubbish”, are used synonymously in casual speech but in fact have different meanings. Trash refers specifically to discards that are at least theoretically “dry”: newspapers, boxes, cans, and so on. Garbage refers technically to “wet” discards: food remains, yard waste, and offal. Refuse is an inclusive term for both the wet discards and the dry. Rubbish is even more inclusive: It refers to all refuse plus construction and demolition debris. The distinction between wet and dry garbage was important in the days when cities slopped garbage to pigs, and needed to have the wet material separated from the dry; it eventually became irrelevant, but may see a revival if the idea of composting food and yard waste catches on” (RATHJE et MURPHY, 2001: 9).

⁵ Article published by Revista Sampa - Carnaval e Turismo, Editora Ébano, São Paulo (SP), nº. 11, February 2012, Special Edition - São Paulo Carnival, 2012. This edition was enlarged with notes and more information.

⁶ Samba is typical style musical and dance of Brazilian culture, with its roots in Africa, particularly in Angola and Congo. It is the most popular rhythm of Brazil.

⁷ “Eco revelry” in English.

⁸ *Trio Elétrico* is the name by which in Brazil is called the truck fitted with sound equipment for the presentation of live music through speakers.

⁹ In this case, the term “school” means group, club or league.

¹⁰ About the life and the fights of Nzinga: *A Memória Viva da Rainha Nzinga: Identidade, Imaginário e Resistência* (only in Portuguese), e-book of the same author. See more information in Bibliography.

¹¹ In Brazil, *capoeirista* is the practitioner of capoeira, a Brazilian martial art with its roots originating in Angola and Congo. The capoeira combines elements of dance,

acrobatics, traditional religion and music. Besides, capoeira is referred too as a game. It was very significant war tactic in Brazilian black rebellions in colonial period (1500-1822).

¹² Article published by Brazilian press in 2015 and posted in several home-pages in the same year. This edition was enlarged with notes, figures and more information.

¹³ See the interview published in Brazilian media, digital newspaper Folha.com., March 2012: *Há abuso no uso de 'sustentabilidade', diz criadora do termo*. Access on line, link: < <http://www1.folha.uol.com.br/ambiente/1065497-ha-abuso-no-uso-de-sustentabilidade-diz-criadora-do-termo.shtml> >.

¹⁴ During the Rio-92, several groups and entities criticized Gro Brundtland's positions, anticipating her speech of 2012. About this, see *A Eco-92 e a Necessidade de um Novo Projeto*, e-book of the same author. See more information in Bibliography.

¹⁵ Article published by Brazilian press in 2015 and posted in several home-pages in the same year. This edition was enlarged with notes, figures and more information.

¹⁶ The Mensalão Scandal was a vote-buying case of corruption that threatened to bring down the government of Luiz Inácio Lula da Silva in 2005. Mensalão is a Portuguese neologism and variant of the expression for “big monthly payment”. In this year José Dirceu de Oliveira e Silva, a leftist Brazilian politician was the Chief of Staff of Brazil. He was dropped after Roberto Jefferson, a Brazilian Congressional Deputy, denounced him “as the ringleader of a plot to hand out illegal monthly payments to congressmen” (Newspaper Folha de São Paulo, June 6, 2005). The Mensalão Scandal was the worse case of corruption in the all Brazilian history.

¹⁷ Slum in Brazilian Portuguese.

¹⁸ Article published by Brazilian press in 2015 and posted in several home-pages in the same year. This edition was enlarged with notes, figures and more information.

¹⁹ Access to original document in English: <http://www.ecomodernism.org/>. In 2015, the Eco Modernist Manifesto was translated from English to Portuguese. It was the first translation of the Manifesto from English language. More information: <http://kotev.com.br/?product=manifesto-eco-modernista> .

²⁰ It is very important to observe that the water crisis is extremely recent in human history, something that can be noted, for instance, in *The Limits to Growth*, famous report of Club of Rome. Although it had been written five decades ago, namely, a time that could be historically perceived as “yesterday”, this text, as well many others elaborated at the same period, doesn't mention any precise analysis concerning the exhaustion of fresh water, a central subject today.

²¹ About this subject, see *A Eco-92 e a Necessidade de um Novo Projeto*, e-book of the same author. See more information in Bibliography.

²² Frequently, this conceptualization is mentioned in the works of soviet geochemist Wladimir Vernadski (1863-1945), defining the space created during the Age of Humans. The Anthropocene is a proposed epoch that begins when human activities started to have a significant impact on Planet, to wild life and ecosystems. Although this concept is today widely accepted by an influent group of specialists, several

scientific entities disapprove the term as a recognized subdivision of the geological time.

²³ Recalling a speculation central of the thoughts of Brazilian geographer Milton Santos, technosphere defines a technical-scientific-informational space. In a few words we can define that it is the spatiality of modernity. This artificial landscape articulates the cities, large technical portions of countryside, as well as its technical, structural and systemic predicates. Its dynamics catalyzes increasing demands on the energy matrix and water resources, both of them needed to ensure the fluxes and the connections of the whole system. The time acceleration, typical of the urban lifestyle of modernity, is the most striking and inescapable essence of contemporary city.

²⁴ Article published by Brazilian press in 2015 and posted in several home-pages in the same year. This edition was enlarged with notes, figures and more information.

²⁵ In several traditional cultures, the anthropologists have perceived that the term environment is meaningless because there is no separation between people and what they view as the natural world, or their surroundings.

²⁶ For instance, in Hellenistic times Heron of Alexandria described the construction of the *aeolipile* or the Heron's engine, the first-recorded steam engine, created almost two millennia before the Industrial Revolution. On the other hand, this notion never was applied in old societies. Scientifically, the Heron's conception was absolutely correct. But the ancient slavery economy was based on use-values, not on exchange-value. Thus, it was very difficult the Heron's engine adoption. Only during the XVIII Century in Europe, appears a historical condition to promote the "rediscovery" and the use of steam machine.

²⁷ The Meadows Report is other name of the document The Limits to Growth. Dennis Meadows is the most known coauthor of the report, book that generated hard debates and has been the subject of several subsequent publications.

²⁸ The omphalos is a symbolic point of the geographical space. In Greek, the word omphalos means "navel". In Greek lore, Zeus sent two eagles across the world to reveal the center or the "navel of the world". The most famous omphalos was located in Delphi, Greece, protected by oracles and priests. The belief about the omphalos refers to a powerful place, that the civilizations consider as the most important place in the world, with important magic power, associated to gods and divinities. Mircea Eliade (1907-1986), a prominent Romanian philosopher, studied this cultural representation in a seminal work: The Myth of the Eternal Return.

²⁹ Geographically, when the new millennia began, of the 21 largest cities of the world, thirteen were Asian (including Tokyo, Osaka and Seoul), four of them, located in Latin America (México City, São Paulo, Rio de Janeiro and Buenos Aires), two, in African lands (Lagos and Cairo) and two, in North-America (Nova York and Los Angeles). It is interesting to note that Europe, precisely the birthplace of the modern metropolis, does not incorporated any of the 21 largest cities in the world in 2000.

³⁰ According to UN-Habitat, around 33% of the urban population in the developing world in 2012, or about 863 million people, lived in slums. The proportion of urban population living in slums was highest in Sub-Saharan Africa (61.7%), followed by South Asia (35%), Southeast Asia (31%), East Asia (28.2%), West Asia (24.6%), Oceania (24.1%), Latin America and the Caribbean (23.5%), and North Africa (13.3%).

³¹ Some data about the urbanization of the poverty in Third World: Around one-third of the urban population in developing countries - nearly one billion people - lives in slums; specialists estimates the world's slum population will be 889 million by 2010; Between 2000 and 2010, the number of slum dwellers increased by six million every year; The majority of slum dwellers in African cities are between the ages of 15 and 24 (UN-HABITAT State of the World's Cities Report 2010-2011)

³² Despite this, the slum world is a central point in global economy. Always disqualified in affluent speech, the slums are often economically vibrant. Researches point out that today, about 85 per cent of all new employment opportunities around the world occur in the informal economy.

³³ This chapter is based on academic text wrote with the biologist Yula de Lima Merola and published in 2014 by Revista do Instituto de Pesquisas Hospitalares (IPH): *Work and Health: A Study on Recyclable Material Collectors in Poços de Caldas, MG*. (Full version access: See Bibliography). This edition was enlarged with notes, figures and more information.

³⁴ In fact, consumerism is dictated by the needs of an economy based on mass production, a paradigm created by the Industrial Revolution, and particularly endorsed by the Fordist ethics and by the parameters of modern economy. In this point of view, the consumer is, therefore, is induced to exacerbated consumption through advertising and marketing strategies, both of them understood as instruments to keep a permanent fever in all productive chain.

³⁵ Dumps, particularly, are of great focus to pathogenic agents. Flies, bugs, cockroaches, rats and vultures are some of the life forms which, side by side with others less often mentioned, frequently are penetrating into the urban scenario, predisposing sanitary risks and spreading dangerous microorganisms. Among the diseases transmitted through the association of such vectors with refuse there is a long list: toxoplasmosis, trichinosis, taeniasis, hantavirus, leptospirosis, bubonic plague, breakbone fever, malaria and yellow fever (NETO, 2007: 24-41).

³⁶ A fact which deserves attention is that the organic fraction, exactly due to its taxonomic profile, returns much more quickly to the cycles of nature, thus being recyclable. In that sense, identifying only the dry fraction as recyclable incurs conceptual and operational incorrectness.

³⁷ It is important to stress that the definition "unserviceable" inserts historical character, making categorical, generic and random conceptualizations totally unfeasible. That having been said, contradicting the myth of the "total use of waste", unserviceable refuse exists and will continue to exist.

³⁸ Besides leachate, the liquid generated by putrefaction of the organic waste receives other designations: percolate, leach, black liquor and “chumeiro” in Brazil. We should heed to the virulence of this liquid effluent: the leachate can provoke 200 times more impact than sewage in what concerns the Oxygen Biochemical Demand (OBD). That is, its presence in the environment is characterized by its powerful capacity for destruction when in contact with freshwater, a fact that concretely articulates the issue of solid residues with that of the water resources.

³⁹ Although methane emissions are inferior to carbon dioxide emissions (considered the flagship among Greenhouse Effect Gas), is believed that in Brazil, due to their high level of organic matter, the MSW correspond to 12% of gas emissions, and the final waste disposal correspond to 84% of this amount (WALDMAN, 2010: 109).

⁴⁰ In a summarized definition, dumps are residue deposits without any previous treatment, originating from several sources (civil construction sites, hospitals, industrial plants and the like) and whose disposal is done regardless of any geotechnical studies, allowing effluents such as leachate and methane to flow freely, affecting the environment and people around.

⁴¹ Avoiding misunderstandings, it is necessary to focus on gravimetric data and on the destination of Urban Solid Residues in Brazil. It is a fact that, from the total mass of collected refuse, 56.8% goes to sanitary landfills, 23.9%, to other landfills known as “controlled landfills” and 19.3% goes to dumps. However, even though dumps receive a smaller share of the total amount of garbage, they correspond to 50.8% of the garbage final destination municipal equipment. That is, they exist in larger number and in poorer cities, in general involving contexts where nature is still preserved, and have provoked tremendous impact. There are problems with inactive dumps too, whose number would be around 15,000 sites spread around the country (WALDMAN, 2011: 73-74).

⁴² The recyclable material collectors, designation formally attributed to the profession in 2001 by the Brazilian Code of Occupations, “are people who live and work, individually and collectively, in the activity of collection, sorting and commercializing recyclable materials”.

⁴³ Values of the Year 2012 Data Basis. In same year, the minimum wage in Brazil was R\$ 622.

⁴⁴ The specificity of this last category explains that a large number of analysis show preference to the terminology “dump population”.

⁴⁵ Statistics vary enormously, but no sources points to less than 95% participation of informal recycling collection in the reuse of materials by Brazilian factories.

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