



SMART CITIES: PLANNING AND EXTRAFISCALITY

Cidades Inteligentes: Planejamento e Extrafiscalidade

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ABSTRACT

This article addresses smart cities, taking into account the creation and development of human rights and sustainable development as a human right. The proposed analysis concerns the existence of a relationship between the design of intelligent cities and the promotion of human rights, as well as the use of extrafiscality as an inducer for the development of intelligent cities. To this end, the research addresses the importance of implementing the use of Information and Communication Technologies (ICTs), present in the so-called "smart" cities, as a means of providing more equality to city dwellers, greater dignity and quality of life, and human rights of people living in urban centers. To achieve these objectives, the deductive method of approach was used, with the accomplishment of bibliographic and documentary research.

Keywords: Smart Cities; Sustainable Cities; Human Cities; Human rights; Extrafiscalidade.

RESUMO

O presente artigo aborda as cidades inteligentes, levando em consideração a criação e desenvolvimento dos direitos humanos e o desenvolvimento sustentável como um direito humano. A análise proposta diz respeito à existência de relação entre a concepção de cidades inteligentes e a promoção dos direitos humanos, bem como a utilização da extrafiscalidade como indutora para o desenvolvimento de cidades inteligentes. Para isso, a pesquisa aborda a importância da implementação do uso de Tecnologias da Informação e Comunicação (TIC), presente nas cidades denominadas "inteligentes", como forma de se oportunizar mais igualdade aos moradores das cidades, maior dignidade e qualidade de vida, garantindo assim uma maior efetividade aos direitos humanos das pessoas que vivem em centros urbanos. Para a consecução desses objetivos, foi utilizado o método dedutivo de abordagem, com a realização de pesquisa bibliográfica e documental.

Palavras chave: Cidades Inteligentes; Cidades Sustentáveis; Cidades Humanas; Direitos Humanos; Extrafiscalidade.

1. INTRODUCTION

This article intends to develop the theme of smart cities, considering the dynamogenesis of human and urban rights, presenting extrafiscality as a mechanism inducing the development of cities.

Smart cities represent a way of promoting a dignified life for their residents, as they acquire this name due to the compliance with protocols aimed at obtaining mobility, using technology and clean energy, carrying out actions that promote social and economic development in a fair way, also promoting urbanism, governance and all actions aimed at the well-being and development of their populations.

Brazil and the world, in general, are increasingly urbanized. Cities and urban centers are today the "choice" of most people to live in. But not all city dwellers live in a dignified way, most city dwellers live with



difficulties imposed by the way the city is ordered. Given this fact, thinking about cities and how they are (dis)organized is fundamental when thinking about people's dignity and quality of life.

The research involves the conceptual aspects of Smart Cities and seeks to answer the following question: "Can extrafiscal taxation be used as an inducer for the development of smart cities, in order to make them more humane, using technology to create a mechanism to stimulate the adoption of attitudes by individuals through the use of taxation - in the extrafiscal mode?" In this sense, the implementation of Information and Communication Technologies (ICTs) is a way to enable the reduction of social inequalities among city dwellers.

The State, through extrafiscality, should use taxes as an instrument of regulation, providing mechanisms to stimulate the adoption of development and implementation of the use of technologies in cities, with the aim of achieving certain goals that are dear to humanity, such as the possibility of having a transformation of cities into environments with quality of life and that follow the desires of modern society.

The general objective of the study is to verify the existence of a relationship between the design of smart cities and the promotion of human rights, as well as the use of extrafiscality as an inducer of the development of smart cities. The specific objectives are: a) To analyze the process of dynamogenesis of human and urban rights; b) Present the planning of cities as fundamental for the implementation of measures with the effective participation of the population; c) Describe the main characteristics of smart cities and the relationship with respect for the human rights of their residents; and d) Check whether mechanisms to encourage the adoption of postures, by individuals, through taxation – in the extrafiscal modality –, can be a factor in inducing the development of smarter and more humane cities.

To present the theme, the article is divided into three items. In the first section, we seek to present the evolution of human rights and urban law, presenting the concept of the dynamogenesis of human rights and some of the transformations that cities have undergone and that have significantly changed the social life of cities and the individuals who inhabit them. In the second section, the topic of city planning is presented, addressing the City Statute, the Master Plan and sustainability in the planning of urban centers. It also seeks to outline a profile of contemporary cities and their inhabitants. The third topic presents the theme of smart cities and extrafiscal taxation as an inducer for the development of smart cities. The article was written using the deductive method of approach, with a bibliographic and documental research.

The proposed investigation will be developed under a predominantly qualitative approach. The research will follow the characterization proposed by Vergara (1998), being the research classified as bibliographical, based on material published in books, articles published in print or electronically. Legislation on the subject of the study will also be used. The method to be used is the hypothetical-deductive method, which allows us to analyze our object to draw conclusions (MEZZARROBA, 2017).

2 THE DYNAMOGENESIS OF HUMAN RIGHTS AND URBAN LAW

Human rights can be considered, in a very generic way, those that make it possible for man to live a dignified life or, at least, they can be considered a tool capable of serving as a parameter for the search for a dignified life. For Joaquin Herrera Flores, apud Piovesan, “os direitos humanos compõem uma racionalidade de resistência, na medida em que traduzem processos que abrem e consolidam espaços de luta pela dignidade humana” (Human rights compose a rationality of resistance, insofar as they translate processes that open and consolidate spaces of struggle for human dignity. Free translation. PIOVESAN, 2007, p. 08).

Pérez Luño (cited by RAMOS, 2012, p. 23), argues that human rights constitute “um conjunto de faculdades e instituições que, em cada momento histórico, concretizam as exigências da dignidade, liberdade e igualdade humanas, as quais devem ser reconhecidas positivamente pelos ordenamentos jurídicos em nível nacional e internacional” (A set of faculties and institutions that, in each historical moment, materialize the demands of human dignity, freedom and equality, which must be positively recognized by national and international legal systems. Free translation)

The importance that this set of values and norms, called “human rights”, assumes in guaranteeing a life that bears the insignia of dignity for all people, without distinction, is undeniable. They constitute a category of rights inherent to human beings, regardless of race, color, sex, language, religion, opinion, social status or nationality, and are intended to protect individuals and groups against actions that interfere with fundamental freedoms and human dignity. Due to the characteristic of immanence, they are not established by legislation, but only affirmed with the primary purpose of making them formally opposable against actions that violate them.

Piovesan (2014) highlights that, in historical terms, the struggle to defend human rights is quite recent. International Human Rights Law emerged in the post-war period, in response to the perversities of Nazism. From this historical background, the search for the strengthening of these rights begins, as ethical guides of the contemporary international order.

The two great wars of the last century led to the creation of the United Nations. In fact, World War II (1939 to 1945), shamefully made humanity witness a total devaluation of the human person, which justified the urgency in creating the UN as an institution responsible for defending and strengthening human rights.

Since its establishment in 1945 – amidst the stark reminder of the barbarism of the Second World War – one of the fundamental objectives of the United Nations has been to promote and encourage respect for human rights for all, as stipulated in the Charter of the United Nations.

In addition to the Universal Declaration of Human Rights, the revolutionary ideals of the 18th century served as the basis for several other human rights documents that followed the Declaration, such as: Convention on the Prevention and Punishment of the Crime of Genocide (1948), the International Convention on the Elimination of All Forms of Racial Discrimination (1965), the Convention on the Elimination of All Forms

of Discrimination against Women (1979), the Convention on the Rights of the Child (1989) and the Convention on the Rights of Persons with Disabilities (2006), among other.

The history of Human Rights is the history of the struggles and achievements of humanity in certain historical, political and sociological contexts considered to be violators of its dignity, because of the unjust and inhumane conditions that impose them (SILVEIRA, SANCHES, 2013, p. 4).

Society undergoes constant changes. It undergoes several modifications, but mainly of what its individuals consider and have as most valuable, their political, economic, cultural values, etc. As a certain set of values gains strength, society begins to demand the protection of these values. In this sense,

[...] a pauta de direitos humanos, nunca é uma pauta acabada. Na medida em que a sociedade complexifica-se e os processos econômicos e tecnológicos vão criando novos contextos e possibilidades de situações e fatos sociais antes inimagináveis, surgem novas necessidades de proteção à dignidade humana e novos sujeitos de direitos a serem protegidos (the human rights agenda is never a finished agenda. As society becomes more complex and economic and technological processes create new contexts and possibilities for previously unimaginable situations and social facts, new needs to protect human dignity and new subjects with rights to be protected arise. Free translation. SILVEIRA, SANCHES, 2013, p. 4).

Accordingly, human rights have undergone transformations in the face of each historical period, emerging in the legal environment through a dynamogenic process:

No processo da dinamogênese, a comunidade social inicialmente reconhece como valioso o valor que fundamenta os direitos humanos (dignidade da pessoa humana). Reconhecido como valioso, este valor impulsiona o reconhecimento jurídico, conferindo orientação e conteúdos novos (liberdade, igualdade, solidariedade etc.) que expandirão o conceito de dignidade da pessoa. Essa dignidade, por sua vez, junto ao conteúdo dos direitos humanos concretos, é protegida mediante o complexo normativo e institucional representado pelo direito. (In the process of dynamogenesis, the social community initially recognizes as valuable the value that underlies human rights [the dignity of the human person]. Recognized as valuable, this value drives legal recognition, providing guidance and new content [freedom, equality, solidarity, etc.] that will expand the concept of human dignity. This dignity, in turn, together with the content of concrete human rights, is protected through the normative and institutional complex represented by the law. Free translation. SILVEIRA, ROCASOLANO, 2010, p. 199)

With cities something similar happens, because it can be seen as an anthropological construction, in which the past, the present and the future must be observed. Man has always occupied some space to inhabit, considering the supply of one's survival needs, such as access to water, hunting, arable land, etc. Likewise, other criteria were chosen for housing, such as safety (high areas), transportation (near rivers), among others.

The origin of cities and the form of occupation of man, long before the intervention of the State, establishing rules for ordering the chosen spaces, came from anthropological needs, which cannot be ignored by urban law, under penalty of creating rules without effectiveness and without efficacy, which end up generating serious urban problems of socio-environmental sustainability (RECH, 2016). The occupations sought

to meet the basic needs, coexistence and safety of man. The individual, facing his fragility, sought to protect his family from animals, bad weather, also ensuring food and welfare.

The small individual colony was at the mercy of the elements, could be swept away in a storm or starved to death in a drought, without being able to seek help from its nearest neighbors a few miles away. These conditions changed when the city was able to analyze the workforce and exercise centralized control. In transferring authority to the city, the villager lost his self-government to a small degree, but he was rewarded with prosperity and security he had never enjoyed before (MUMFORD, 1998, p. 69).

The city has become the home, the place for coexistence idealized by man, possessing a deep family sense (well-being and security), where everyone seeks sustainability, a concept that seems to have been forgotten over time by urban planners. Unlike the ancient cities built on the hills, surrounded by walls that gave security to the fragile men of the countryside, today the residences have been transformed into walls for the protection of the inhabitants of the city itself, which no longer guarantees security or coexistence, isolating people more and more (RECH, 2016).

In order to reflect on the importance of the city, Arendt's (2007) contribution is valid when she points out the distinction between the public sphere, polis, and the private, resulting from family relationships. In the family sphere, men are forced to live together as a result of their necessities and needs, since for the maintenance of individual life and as a species, men have always needed the company of each other. There was no freedom in the family sphere, since the head of the family was the dominant one, in a kind of pre-political power exercised by him, according to which he ruled over the family as a whole, thus establishing the family as the center of the most severe inequality. The polis, on the other hand, was established as the sphere of freedom, since only in it was it possible to know equals. The equality of the polis meant the possibility of living among and dealing with peers. Thus, the city is the result of a natural sequence in the development of man, which begins its process of maturation within the family and fully blossoms in the polis. Living in cities necessarily implies living collectively (ROLNIK, 1995).

The choice of the city as a place for people to exercise life took place with urbanization, which effectively only happened after the industrial revolution, at the turn of the 18th century to the 19th century (CASTELLS, 1983). A new conception of the city then emerges, “que veio a expressar que ocorriam mudanças nas ideias e imagens que os indivíduos tinham do seu espaço e do mundo em geral” (which came to express that there were changes in the ideas and images that individuals had of their space and the world in general. Free translation. PESAVENTO, 1999, p. 33).

Lefebvre (2016) also indicates the industrial revolution as a starting point to reflect on modern cities, because it shapes social groups that generate the economic employment of capital and, therefore, re-updates the contours of a new society, represented by a new society. progressive bourgeoisie, “endowed with ideological instruments suitable for this rational growth, which walks in the direction of democracy and which replaces oppression with exploitation” (LEFEBVRE, 2016, p. 22).

The so-called urbanization of society was the result of the diffusion, in society, of variables and nexuses related to the modernity of the present, with reflections in the city. The urbanization of territory is the wider diffusion of modern variables and nexuses (SANTOS, 2009). Humanist urbanism, on the other hand, proposes " a suavidade, a alterabilidade e a flexibilidade de soluções que hoje tornam possíveis as técnicas de construção" (the softness, the alterability and the flexibility of solutions that today make construction techniques possible. Free translation. CHOAY, 2015, p. 40).

Com efeito, o método da intuição geddesiana é solidário com uma concepção do tempo e da história como criação permanente e continuidade. Constitui, assim, a antítese da posição dos urbanistas progressistas, para quem a modernidade coloca em jogo um processo de ruptura e de descontinuidade. (Indeed, the method of Geddesian intuition is in solidarity with a conception of time and history as permanent creation and continuity. It thus constitutes the antithesis of the position of progressive urban planners, for whom modernity brings into play a process of rupture and discontinuity. Free translation. CHOAY, 2015, p. 42)

The vision of humanistic urbanism proposed by Ghel (2015), a contemporary Danish architect and urbanist, adduces that the human dimension is a universal starting point; it is the most important thing about the city, so that diversity is structuring so that the relationships arising from this dimension are not lost.

One model of the city suggested by Ghel is the "healthy city". The healthy city of Ghel (2015) is a living city, whose spaces are denser, humanized and revitalized, that is, cities whose planning considers, above all, their human dimension and the positive consequences of an occupation designed under those bases.

A vida da cidade não acontece por si mesma ou se desenvolve de forma autônoma, simplesmente como resposta à alta densidade. Essa questão requer uma abordagem concentrada e bem mais variada. Cidades vivas requerem estrutura urbana compacta, densidade populacional razoável, distâncias aceitáveis para serem percorridas a pé ou de bicicleta e espaço urbano de boa qualidade. A densidade, que representa quantidade, deve ser combinada com a qualidade sob a forma de bons espaços urbanos. (City life does not happen by itself or develop autonomously, simply as a response to high density. This matter requires a focused and far more varied approach. Livable cities require compact urban structure, reasonable population density, acceptable walking and cycling distances, and good quality urban space. Density, which represents quantity, must be combined with quality in the form of good urban spaces. Free translation. GEHL, 2015, p. 69)

In fact, the city that prioritizes the mix of functions and that turns inward, densifying its spaces, rationalizes the demand for more urbanization activities, opening of roads and paving, sanitation, public transport and more energy consumption, variables of the adverse model, which results in a sustainable urban landscape (CRUZ and TAVARES, 2018).

On the world stage, it is clear that the regularity of a hegemonic practice of a planning urban order, illustrated, above all, in progressive ideals, was the model adopted by large cities, unlike that defended by humanist urbanism.

Cities have long been unable to fulfill desired ideals, such as safety and coexistence, as a result of disorganized growth and the lack of long-term planning, due to the mismanagement of administrators. Aristotle (2002, p. 23), affirmed “que a vida nas cidades requer previamente o encaminhamento das necessidades básicas de sobrevivência, devendo evoluir para o bem-estar, mediante o desfrute do ócio e da arte” (that life in cities requires the forwarding of basic survival needs, and must evolve towards well-being, through the enjoyment of leisure and art. Free translation).

All the transformations that cities have undergone have significantly altered the social life of cities and the individuals who inhabit them. Urban law, in this scenario, also goes through a dynamic process, with new subjects and new environments, centered on large cities with their cultural and social complexities in constant transformation. An example of new transformations that cities will certainly have to look forward to are the changes arising from the implementation of new technologies for smart and humane cities.

Both human rights and cities are the result of a social evolution of human beings, that is, an evolution of the individual who goes through each of the historical periods and calls for regulation and implementation in the legal scenario of new rules, arising from the dynamogenic process, as pointed out above.

In view of this excluding and inhumane reality, it is urgent to find answers and solutions to the problems caused by the unbridled growth of cities, based on new rules of Urban Law, which establish appropriate, scientific forms of occupation seeking sustainability. A city that contemplates everyone's interests must be the main goal of municipal urban planning and in order to achieve this goal, planning is fundamental.

3 CITY PLANNING

City planning is addressed in this topic. In urban planning and management, popular action is of paramount importance, requiring effective participation to achieve social functions at all times in municipal urban policies. To approach the subject, the research seeks, first, to make a study of the City Statute (Law n. 10.257/2001), elaborated to regulate articles 182 and 183 of the Federal Constitution and, later, the analysis falls on the influence of the Master Plan in ensuring the realization of the right to the city.

The 1988 Constitution of the Federative Republic of Brazil, by providing for urban policy in its articles 182 and 183, entrusted the municipal public power with urban development policy. The objective was to organize the full development of the city's social functions and guarantee the well-being of its inhabitants. According to the provisions of the Constitution, municipalities with more than twenty thousand inhabitants must prepare master plans, which are understood to be basic instruments of urban development and expansion policy.

In addition to the constitutional provision, the urban development policy must consider the general regulations established in Law 10,257, of July 10, 2001, called the City Statute. This relevant legal diploma regulates articles 182 and 183 of the Federal Constitution, establishing norms of public order and social interest that regulate the use of urban property in favor of the collective good, safety and well-being of citizens, as well as environmental balance. (sole paragraph, article 1, of law 10,257/2001).

Fernandes (2006) states that the City Statute has four fundamental dimensions. For the author, the law consolidates a new legal-political conceptual framework for Urban Law, in addition to regulating and creating urban instruments for the construction of a new socially fair and inclusive urban order by the municipalities. The Statute also points out political-legal processes for the democratic management of cities and proposes legal instruments for the land regularization of informal settlements in municipal urban areas.

The legal diploma is based on the principles of participatory planning and the social function of property, providing legal support for the action of municipal governments in addressing serious urban socio-environmental issues in order to rebuild the urban order and achieve a sustainable city. Fernandes (2006), points out that the Statute presents instruments that can and should be used by municipalities in a combined manner, in order to promote not only the normative regulation of the processes of use, development and occupation of urban land, but especially to actively induce the directions of such processes.

The City Statute has the broader objective of establishing the main regulations about the difference between the artificial environment and the natural environment. For Fiorillo (2019), in the execution of urban policy, it is correct to say that the artificial environment starts to receive a mediate guardianship (revealed by article 225 of the Federal Constitution – FC – in which we find a general protection of the environment as a protection of life in all its forms centered on the dignity of the human person) and an immediate protection (which starts to receive in-depth legal treatment as a result of the regulation of articles 182 and 183 of the FC), directly related to the cities and, therefore, it is impossible to detach from the implementation of urban policy the concept of the right to a healthy quality of life,

In its article 2, the Statute presents the guidelines to be observed in the elaboration of the Master Plan. Item I, of art. 2, of the City Statute, provides for the “*garantia do direito a cidades sustentáveis, entendido como o direito à terra urbana, à moradia, ao saneamento ambiental, à infraestrutura urbana, ao transporte e aos serviços públicos, ao trabalho e ao lazer, para as presentes e futuras gerações*” (guarantee of the right to sustainable cities, understood as the right to urban land, housing, environmental sanitation, urban infrastructure, transport and public services, work and leisure, for present and future generations. Free translation). This guideline, while defining the path that must be followed to reach the future of the city, demanding public policies, also defines the citizen's subjective rights, by declaring the guarantee of the right to a sustainable city, including the right to urban land and housing.

The directive of the right to a sustainable city makes it clear “in order to benefit present and future generations”, which means that they cannot be policies resulting from a government plan, but from an adequate legal-urban planning, which contemplates matters of short, medium and long term, in a safe and permanent way, so that future generations will not suffer the consequences of electoral administrations, without commitment to the future and that do not think beyond the immediacy of reelection.

Caramuru (2001) states that the right to sustainable cities is a subjective public right, insofar as it is an authorization granted by the legal system to each citizen, who thus becomes the holder of the power to act in the effective pursuit of this right. In addition, the sustainable city must ensure environmental sanitation, as a

subjective right of the citizen. The occupation by man almost always generates environmental imbalance, since urbanization has, in a given space, more people and activities that are bearable by nature, when it does not occupy places that could not be occupied. This leads to traffic chaos, flooding, landslides, irregular and even dangerous housing for its residents, lack of potable water, treated sewage, etc. Furthermore, unsustainable occupations make it impossible for rainwater to flow normally. The accumulation of rainwater, most of the time, results from the non-observation of constructive indices, especially the sustainable occupancy rate (TO); it also requires planned and often unfeasible storm sewer structures, due to occupations in inappropriate locations.

Another legal command brought by item I, art. 2, of Law 10,527, concerns the duty to invest in sanitation. As it does not mean a showy work and that has no electoral return, normally the contribution of public resources for sanitation works is not a priority for managers. Generally, mayors prefer to invest in health centers, because, although the people get sick due to the lack of environmental sanitation, when they are cured at the health center, they link their cure to the work of the politician. Rech (2016) states that simply investing in storm sewer systems is not enough, as it does not solve the problem of flooding, and it is first necessary to solve the problem of inadequate occupations, which implies removing part of the population, with high costs and incalculable political burden. What is usually done are palliative works, which do not mean sustainability.

The City Statute made planning and policy development mandatory, seeking to ensure environmental sanitation, creating mechanisms and legal possibilities for citizens themselves to demand correct and permanent sanitation policies.

The second guideline appears in item II of art. 2 of the City Statute. According to the legal command, the urban policy guideline is: “gestão democrática por meio da participação da população e de associações representativas dos vários segmentos da comunidade na formulação, execução e acompanhamento de planos, programas e projetos de desenvolvimento urbano” (democratic management through the participation of the population and associations representing the various segments of the community in the formulation, execution and monitoring of urban development plans, programs and projects. Free translation). This guideline makes it mandatory that the acts of elaboration, alteration and concretization of the city project always have the support of the population. It is not simply a matter of establishing populism, in which the people perform management acts that are the responsibility of the Executive or Legislative branches. But it imposes the need for the population, at least, to be informed, by means of seminars, disclosure, debates of the administrators' proposals, when increasing actions or public policies of the city project. Therefore, it's not about the population being called to discuss technical issues they don't know, but to take on, to become aware of the city project in order to help and especially to give their opinion on how to build it.

The Statute provides for the promotion of democratic management of cities, recognizing and providing for the need to adapt municipalities to promote the integration between planning, legislation and urban

management, in order to democratize the decision-making process with the effective participation of citizens and representative associations in the process of formulating and implementing planning and public policies.

But in addition to a guideline, which implies increasing a type of public policy, the democratic management of the city project defines and institutes a principle of Urban Law: the need for effective participation in planning the city, according to the interests of its population.

Carvalho Filho (2013) argues that democratic management involves three phases of urban policy: formulation, execution and monitoring. The beginning of urban policy takes place through preliminary studies, opinions and the projection of urban actions and strategies; is the formulation phase. Then comes the execution phase, in which the actions are effectively implemented, materializing the ideas conceived in the previous phase. Finally, there is the monitoring phase, which includes the inspection to be carried out when the execution phase is underway, in order to verify the adequacy between this and the initial formulation.

Social participation in management, with the aim of effectively democratizing the city, can guarantee better access to services and improve the quality of life, valuing the very right to the city for citizens of different social levels.

The Statute provides in item III of art. 2 the guideline for “cooperação entre os governos, a iniciativa privada e os demais setores da sociedade no processo de urbanização, em atendimento ao interesse social” (cooperation between governments, the private sector and other sectors of society in the urbanization process, in service of social interest. Free translation).

The urbanization process is the responsibility of the whole society, and it is up to the Public Power to coordinate the entire process, through adopted legal procedures. Therefore, civil society is called upon to participate, with appropriate conduct, in the investments and financing necessary for the construction of the planned city project.

An example of the lack of a cooperation policy is the inexistence of popular developments a few years ago. The private initiative hardly ever invested in popular lots. First, because they were not foreseen in the city's urbanistic legislation, being the exclusive initiative of the government; second, because the private initiative has no interest in investing in housing for the poorer classes, because they think that default tends to be higher. Today, developers can be called upon to make investments in areas of social interest, under penalty of losing the right to make only safer and more profitable investments. Meeting the social interest requires that the private initiative also directs its investments with a view to a sustainable urbanization process and for all (RECH, 2016).

The fourth guideline provided for in article 2, item IV, of the City Statute provides for the need to:

[...] planejamento do desenvolvimento das cidades, da distribuição espacial da população e das atividades económicas do Município e do território sob sua área de influência, de modo a evitar e corrigir as distorções do crescimento urbano e seus efeitos negativos sobre o meio ambiente (planning the development of cities, the spatial distribution of the population and the economic activities of the Municipality and the territory under its area of influence, in order to avoid and correct the distortions of urban growth and its negative effects on the environment. Free translation)

The directive has a meaning not only of planning, since the instruments of the City Statute aim to elaborate the Master Plan, which is effectively the main instrument of city planning. For Rech (2016), the directive refers to development planning, not growth planning. Cities usually grow and develop little. The city can develop without growing, as well as the city can only develop, what cannot exist is planning for the city to only grow. The City Statute refers to the social development of cities, the meaning of which is undeniably broad, alluding also to the development of the social functions of urban property. For the author, despite its nature as a fundamental right within the constitutional order, property no longer represents an absolute and intangible right as it did in former times. The right to property is guaranteed if its social function is fulfilled.

The set of all these elements that ultimately aim at a more organized occupation of habitable spaces is what constitutes urban policy. For Carvalho Filho (2013, p. 17), the concept of urban policy is, “[...] o conjunto de estratégias e ações do Poder Público, isoladamente ou em cooperação com o setor privado, necessárias à constituição, preservação, melhoria e restauração da ordem urbanística em prol do bem-estar das comunidades” (the set of strategies and actions of the Public Power, alone or in cooperation with the private sector, necessary for the constitution, preservation, improvement and restoration of urban order for the well-being of communities. Free translation).

Item V, art. 2, of the City Statute, thus imposes the “oferta de equipamentos urbanos e comunitários, transporte e serviços públicos adequados aos interesses e necessidades da população e às características locais” (offer of urban and community facilities, transport and public services suited to the interests and needs of the population and local characteristics. Free translation). The guideline does not refer only to public works, but to urban equipment and infrastructure suited to the interests and local needs of the population. A day care center, a pharmacy, a bank, a school, a square are urban facilities, but not necessarily built and maintained by the Government. It is up to the Public Power, in the planning of the city, to create conditions for these facilities to take place.

As part of the planning of cities, the elaboration of the Master Plan stands out as fundamental, as it presents the objectives to be pursued by the municipalities in the search for sustainable development. Meirelles (1996, p.42) conceptualizes the master plan as the “[...]o complexo de normas legais e diretrizes técnicas para o desenvolvimento global, constante do Município, sob os aspectos físico, social, econômico e administrativo, desejado pela comunidade local” (the complex of legal norms and technical guidelines for the global, constant development of the municipality, under the physical, social, economic and administrative aspects, desired by the local community. Free translation). The author goes on to say that it is the legal technical instrument that defines the objectives of each municipality and, therefore, enjoys supremacy over other municipal laws, to guide all the activity of the Administration and those administered in the public and private realization that interest or affect the collectivity. Moreover, in setting the objectives and guiding the municipality's development, it is the supreme and general law that establishes priorities in local government actions, conducts and orders the city's growth, and disciplines and controls urban activities for the benefit of social welfare (MEIRELLES, 1996).

The master plan, instituted by municipal law, is the main instrument of local urban policy. This status is conferred by article 40 of the City Statute, which states that the master plan is the basic instrument of urban development and expansion policy. By constitutional definition, the provisions contained in the master plan will delimit the content of the social function of urban property. In summary, the municipality has in the master plan the instrument for reinterpreting the real city, capable of defining strategies for immediate intervention, establishing in an objective way, the possibility of changing reality.

Planning is fundamental to achieving the goals of making a city that understands the interests of citizens. As pointed out by Silva (2008), planning, in general, is a technical process designed to transform the existing reality in the sense of previously established objectives. In the teachings of Ferrari (1991, p. 33), about planning,

[...] em um sentido amplo, planejamento é um método de aplicação, contínuo e permanente, destinado a resolver, racionalmente, os problemas que afetam uma sociedade situada em determinado espaço, em determinada época, através de uma previsão ordenada capaz de antecipar suas ulteriores consequências. (in a broad sense, planning is a method of application, continuous and permanent, destined to rationally solve the problems that affect a society located in a certain space, at a certain time, through an ordered forecast capable of anticipating its further consequences. Free translation)

Thinking about planning, Fiorillo (2019) highlights that for cities with more than 20,000 inhabitants the Master Plan is mandatory and must be approved by the City Council, observing the delimitation of urban areas where the parceling, building or use of urban soil may be applied; the contents pertaining to the right of pre-emption, onerous grant to the right to build, change of land use; as well as a monitoring and control system. The document should harmonize the different legal rules of cultural environment, artificial environment, work environment and natural environment, concretely adapted to the reality of each Municipality, assuring to the citizens the trinomial life-work-consumption. The author also points out that the Master Plan is responsible for an integrated approach to risk management, assuming actions in the field of the formation of risk areas, the reduction of risk levels in urban occupations already installed and the implementation of contingency plans aimed at protecting the population in the event of extreme rainfall events.

The 1988 Federal Constitution also made it possible for people to participate in collective decisions, while the City Statute regulated the possibilities of participation through the Master Plan, leaving citizens to seek knowledge of the projects that are about to take place in their city. The participation of the population is of paramount importance in this process, since putting into practice the constitutional norms that concern the fundamental rights of the citizen is synonymous with transforming the city into a favorable place for human rights to leave theory and become effective. Unfortunately, however, a large part of the population has not yet understood the importance of popular participation.

The instruments of the City Statute and the Master Plan, and especially when it is produced through participatory democracy, need to be used as a way of realizing and guaranteeing the right to sustainable cities. Participatory democracy is essential for the emancipation of citizens and the realization of the right to the city.



The full enjoyment of the fundamental right to a sustainable city necessarily involves compliance with the duty to defend this space, a duty of the entire community. Accordingly, Del'Olmo (2009) believes in citizen participation through the exercise of citizenship and the broad individual and collective awareness of the permanent need for continuous and systematic protection of nature as a condition for quality of life and human survival itself. The realization of the right to a healthy and inclusive urban environment will only be achieved when the legal-citizen obligation to collaborate for its preservation materializes. Douzinas (2009) complements this statement when he teaches that the mutual recognition of citizens as self-determining agents derives from their free participation in the democratic decision-making process and its extension from politics to other areas of social life.

Rolnik (1995) states that the new way of planning must incorporate the basic principles that guide urban policy, which are located in three fields: new instruments of an urbanistic nature, aimed at inducing the forms of use and occupation of the land; new management strategy, which incorporates the idea of direct citizen participation in decision-making processes about the city's destiny; and the expansion of the possibilities of regularization of urban areas, until today located in the ambiguous border between legal and illegal.

Dallari and Ferraz (2003) extend this discussion by stating that the realization of the democratic process in the management of cities is the reason for the very existence of the City Statute, which itself results from a long history of participation, which began in the 1980s. Today it can be assured that the participation of citizens in environmental and urban management programs is essential for their success, being a condition for the construction of a vision of the city as an urban-social-environmental system.

Strategies aimed at the urban order must be directed towards certain ends, ends that mirror legal-social phenomena: these are the objectives of the urban policy (CARVALHO FILHO, 2013). Thus, the objectives of urban policy are the mediate and immediate ends to which the component actions of urban policy are intended.

It is very important that the population participate in the process of improving urban spaces, putting into practice the constitutional norms that concern the fundamental rights of the citizen, enabling the transformation of the city into an adequate place for the realization of human rights. Unfortunately, a large part of the population still does not understand the importance of popular participation.

When emphasizing the democratic management of the city, Saúle Júnior (2007) considers that it is recognized as a guideline for their sustainable development, based on the constitutional precepts of participatory democracy, sovereignty and popular participation. Besides these attributes intrinsic to the urban space, conditions also need to be created for the city to be fair and equitable enabling public security to be effective, as well as the peaceful coexistence of people, collective development, and the practice of solidarity, always respecting the multicultural nature of identities and the memory of all citizens, without distinction of any kind.

Thus, thinking about city planning is thinking about the implementation of practices that effectively include the effective participation of the population in decision-making, it is thinking about the possibility of

changes that can improve the quality of life of those who live in cities, making cities a place of realization of human rights.

The planning of cities with the participation of the population will enable an improvement in the quality of life, putting into practice the constitutional norms that concern the fundamental rights of the citizen, synonymous with transforming the city into a place where human rights leave the theory and become effective. Along with planning, the creation of smart cities is promising in this context because, parallel to the challenges mentioned, there is also an unprecedented advance of Information Technology and its use in common activities. The use of technology is salutary, but not only technology is important, but also, and mainly, that people besides being consumers are also developers of these new technologies and the services derived from them. The theme of smart cities will be the subject of the next section.

4 SMART CITIES: EXTRAFISCALITY AS A DEVELOPMENT INDUCER

The protection of the right to the city in the current scenario of urban society in Brazil represents the realization of the right to dignity of social subjects, linked to other rights such as the right to housing, education, leisure, work, transport, health, to a balanced environment, among others. In Brazil, the right to the city came to occupy a prominent place in the legal scenario from the 1988 Federal Constitution, being regulated by Law n. 10,257/2001, which established the City Statute. The City Statute established new guidelines for Brazilian urban policy, pointing out limits to the exercise of property rights, seeking the equitable use of cities within the principles of sustainability and social justice.

The exercise of rights takes place in urban and rural spaces that make up the territories of cities. The right to the city includes, among other, the right to development, to a healthy environment, to participation in urban planning and management. The city is a culturally rich and diverse collective space that belongs to all its inhabitants, that is, all the people who inhabit it temporarily or permanently. In addition, it must be the space for the realization of fundamental rights and freedoms and, to all this, we can call Smart Cities.

Guimarães (2018), indicates that the term Smart City was originally coined in the work “The Technopolis Phenomenon: Smart Cities, Fast Systems. Global Networks” (GIBSON; KOZMETSKY and SMILOR, 1992), a set of articles originally presented at a conference held in San Francisco, California. According to the author, the objective was to focus on the development of an innovative and effective infrastructure to foster economic growth due to the enormous competitiveness existing in the world in the 1990s, in the search for a sustainable economy that would allow the creation of smart cities. The smart city was also seen by the authors of the time from the point of view of the risk of placing only the technological factor as a condition for the definition of a city's intelligence.

Jung (1998, cited by Guimarães, 2018), states that for the existence of smart cities there must be a well-educated population, capable of developing, trading and providing new products and services demanded both by other knowledge-based economies and by the development of markets that move in this direction.

Technologies are important; however, it is important to emphasize that people, in addition to being consumers, can also be developers of these new technologies and the services arising from them (GUIMARÃES, 2018). In general terms, the concept of smart and sustainable cities refers to the extensive use of new technologies, Information and Communication Technologies (ICTs), aimed at improving the population's quality of life, which would necessarily involve greater conservation and care with the environment and the reduction of social inequality.

There are many concepts of Smart Cities, there is no consensus on them, and they vary a lot in a spectrum that goes from an eminently technological concept to a more human concept. However, in the face of this conceptual variability what should be highlighted about Smart Cities is that it presents as a main characteristic the human matter.

The human being must be the protagonist in the concept and in the actions that seek to transform a city into an intelligent one, there being no reason to think of an intelligence component for a city other than the one that can transform for the better the life and experience of its inhabitants. The purpose, for Guimarães (2018), should always be the citizen and the improvement of one's quality of life in a broad sense. The author goes on to state that

[...] uma cidade inteligente dever ser construída de maneira participativa e liderada pelos cidadãos, que devem ser protagonistas neste processo, por meio de colaboração entre todos os *stakeholders* da cidade: cidadãos, governo municipal, organizações não governamentais, empresas, e todos os outros níveis de governo (estadual e federal) (a smart city must be built in a participatory way and led by citizens, who must be protagonists in this process, through collaboration between all the city's stakeholders: citizens, municipal government, non-governmental organizations, companies, and all the other levels of government [state and federal]. Free translation. GUIMARÃES, 2018, p. 119).

Technology must be the means to improve the quality of life of citizens, the aforementioned author also highlights that technology must be present and used as a tool to transform cities into better, more adequate and sustainable places to live, in order to seek the common good of the people. For the author, the implementation of technology has the role of main supporting actor, since the existence of technology alone is not enough, it must be accessible, understandable and usable by any citizen, regardless of their social strata.

Guimarães (2018, p. 121), formulates a concept of smart city that adapts very well to the issues raised herein. For him, Smart City is

[...] uma cidade que tem o cidadão empoderado como protagonista e beneficiário de suas ações e as tecnologias de informação e comunicação como coadjuvantes principais e meios habilitadores para uma gestão pública transparente, participativa, responsiva e efetiva. É uma cidade que se renova e inova de maneira integrada, sistêmica e sistemática, na busca do bem comum da sociedade e de suas futuras gerações (a city that has the empowered citizen as the protagonist and beneficiary of its actions and the information and communication technologies as the main supporting actors and enabling means for a transparent, participative, responsive and effective public management. It is a city that renews itself and innovates in an integrated, systemic and systematic way, in search of the common good of society and of its future generations. Free translation)

The implementation of the Smart and Human City concept does not always require sophisticated and complex infrastructure, and it can be done through the use of simple technology, taking advantage of the suggestions of the local population, as long as they have the opportunity to participate in the design and management of these technologies (COSTA; OLIVEIRA, 2016; DE FILLIPI, 2015; OLIVEIRA; CAMPOLARGO, 2015). Solutions can arise from local communities socially integrated into innovation ecosystems (OLIVEIRA; CAMPOLARGO, 2015) or from creative and collaborative environments (CONCILIO; DESERTI; RIZZO, 2014), which provide empowerment with knowledge and digital tools, effectively participating in the process of construction of their cities (REDE BRASILEIRA DE CIDADES INTELIGENTES E HUMANAS, 2015). This is an important advantage for the municipal administration, which enables the creation of smart human services without having to make significant investments (COSTA; OLIVEIRA, 2016).

Gehl (2015) argues that the cost of working on a human scale in urban design is modest compared to the costs of infrastructure investments, such as roads, therefore, it can be applied in any city in the world, regardless of their economic development.

In addition to management, the participation of the people of the city is fundamental in the process of changing cities. According to Rogers (2008, p. 63): “[...] uma participação genuína é a chave para produção de soluções urbanas que transformem a vida dos cidadãos” (genuine participation is the key to producing urban solutions that transform citizens' lives. Free translation). In this way, popular participation in urban planning is important, as it aims to make it cohesive with the different expectations and desires of the parts that make up the community. The creation of an identity for the community encourages greater civic participation, by contributing to a sense of belonging to the urban environment, which enables each citizen to actively occupy the urban space, appropriating it, transforming it and maintaining it. Thus, urban projects depend on the participation of many actors that will support them: the real estate developer, local authorities, private companies, civil associations, residents, among others. Most of the time, the resident is the one who best knows the place where an urban project is being developed, as the one who really knows what the problems are and what the priorities are, so the resident's participation is fundamental.

It is up to public managers to devise strategies to boost social participation, essential for urban planning and sustainability; it is the duty of public managers to ensure that participation occurs, otherwise the planning will not achieve its objectives. Fernandes (2013) points out that the poor participation, or the lack of interest of the population, can be due to several reasons, such as the population's lack of knowledge of its power to transform cities, as well as its disbelief in the actions of political agents and their results. It may also happen that the language used when exposing the subject is not compatible with the level of knowledge and sociocultural values. It is recurrent in Brazil that people say that decisions must be made by their political representatives, by those who have been chosen to occupy the Executive and Legislative branches.

The construction of cities with elements of the smart city concept is underway in Brazil and worldwide, with the theme as the focus of academic discussions and also among public managers. A good example of a

Brazilian initiative towards intelligent and human cities is the role being developed by the Brazilian Network of Intelligent and Human Cities (Rede Brasileira de Cidades Inteligentes e Humanas – RBCIH). The Network (RBCIH) was created in 2013, within the National Front of Mayors - which brings together the 420 largest Brazilian cities – and until the year 2017 brought together secretaries and municipal directors of science, technology and innovation, as well as municipal secretaries of economic development. In order to create a common concept for all of Brazil, and with characteristics that were very Brazilian on the theme, the RBCIH gathered members from universities and private initiative sectors to write a document entitled: "Brasil 2030: Cidades Inteligentes e Humanas", which has guided the actions of the RBCIH throughout Brazil. Based on this document, partner institutions from the academic sector and the private initiative became part of the Network. (RBCIH, 2016). Its objectives are to foster and implement projects in affiliated cities, stimulate research in this area, develop business for companies, and promote the technological inclusion of Brazilian society.

The document “Brasil 2030: Cidades Inteligentes e Humanas”, launched in 2016 by the RBCIH, aimed to present the Brazilian concept of smart and human cities, as well as a project that “pretende ser o catalisador do processo de transformação das cidades em cidades inteligentes e humanas” in Brazil (intends to be the catalyst for the process of transforming cities into intelligent and human cities. Free translation. RBCIH, 2016). With this project, it is envisaged that by 2030 it will be possible to achieve a very tangible goal of Brazilian municipalities considered “Smart and Human Cities” within the established parameters.

The concept of Smart and Human City with which the Network works is:

As Cidades Inteligentes e Humanas são aquelas que trabalham de forma integrada suas cinco camadas: as pessoas, o subsolo, o solo, a infraestrutura tecnológica, e a plataforma de internet das coisas. O foco é a qualidade de vida das pessoas e o seu desenvolvimento criativo e sustentável. Com a integração das cinco camadas, tem-se a garantia de que os dados e informações gerados e captados estejam disponíveis de forma transparente para toda a sociedade e que o poder público possa executar uma gestão eficiente e eficaz, economizando recursos. Com o foco nas pessoas, tem-se a garantia de que a cidade inteligente e humana se efetive, tendo em vista sua implantação ser uma jornada e não uma ação de curto prazo. Não existe um modelo de cidade inteligente e humana que possa ser replicado para qualquer cidade. Cada cidade tem as suas vocações e, somente levando isso em conta, se consegue estruturar um projeto que realmente seja efetivo (Smart and Human Cities are those that work in an integrated way with their five layers: people, underground, soil, technological infrastructure, and the internet of things platform. The focus is on people's quality of life and their creative and sustainable development. With the integration of the five layers, there is the guarantee that the data and information generated and captured are available in a transparent way for the whole society and that the public power can execute an efficient and effective management, saving resources. With the focus on people, there is the guarantee that the smart and human city is effective, considering its implementation is a journey and not a short-term action. There is no model of a smart and humane city that can be replicated for any city. Each city has its own vocations, and only by taking this into account can we structure a project that is really effective. Free translation. RBCIH, 2016, p.18).

The RBCIH has representatives in almost all Brazilian states, through Directors appointed by the National Board of the Network, with the function of making society aware of the existence of the RBCIH as a



facilitator of the credit acquisition process, through dialogue with potential financiers, including the World Bank, so that municipalities can make their Smart Cities projects viable (RBCIH, 2016).

As a way of inducing the development of smart cities, municipal governments could use the tax system, creating tax rules that go beyond the collection function, using extrafiscal taxation to encourage behaviors in society. It would then be a mechanism of a tax nature of State intervention in the economic order, with the objective of encouraging better social and environmental conduct. As an example, we have tax incentives as highlighted by Leão (2014), when he states that they can be granted to taxpayers through exemptions, tax reductions and calculation bases, with the aim of changing the normal situation in which the taxpayer would find himself in order to obtain a tax advantage. Thus, according to the author, there would be a direction of the activity of the individual, with the State fulfilling a tax-inducing function, through fiscal facilitation. The extrafiscal tax is, according to Baleeiro (1999, p. 576-7),

aquele tributo que não almeja, prioritariamente, prover o Estado dos meios financeiros adequados a seu custeio, mas antes visa a ordenar a propriedade de acordo com a sua função social ou intervir em dados conjunturais (injetando ou absorvendo a moeda em circulação) ou estruturais da economia. Para isso, o ordenamento jurídico, a doutrina e a jurisprudência têm reconhecido ao legislador tributário a faculdade de estimular ou desestimular comportamentos, de acordo com os interesses preponderantes da coletividade, por meio de uma tributação progressiva ou regressiva, ou da concessão de benefícios fiscais. (that tax that does not aim, primarily, to provide the State with the appropriate financial means to fund it, but rather aims to order the property according to its social function or intervene in cyclical data (injecting or absorbing currency in circulation) or structural data of the economy. To this end, the legal system, the doctrine and the jurisprudence have recognized the tax legislator's power to stimulate or discourage behaviors, according to the prevailing interests of the collectivity, through progressive or regressive taxation, or by granting tax benefits. Free translation)

The 1988 Federal Constitution enshrines extra-fiscality by regulating, for example, the differentiated and favored treatment for micro and small businesses (article 146, III, single paragraph), a unified taxation regime called Simples Nacional, and the progressive ITR to discourage the maintenance of unproductive property (art. 153, §4, I). Thus, the use of taxation for purposes other than the mere and pure collection, is a mechanism that should be more used as an incentive to promote development.

Extrafiscality can bring very important benefits to social development, requiring, however, that it be legitimized in exact proportion to the legitimacy of the objectives pursued, and this will certainly occur when the objectives pursued pass through the realization of fundamental rights, reducing factual inequalities produced by the current economic model and reaching the maximum normative density of the principle of human dignity (COSTA, 2016).

Article 218 of the 1988 Federal Constitution provides that the State is responsible for promoting and encouraging scientific development, research and technological training in the country. With the publication of Law 10,973, in 2004, known as the Innovation Law, the government took a very big step in providing incentives for innovation and scientific and technological research in the productive environment, which is why this Law is considered the regulatory framework for innovation in Brazil. The government, as a mechanism to

encourage innovation, can use a series of promotion instruments, the main ones being: tax incentives, economic subsidy, lower interest financing and cooperation between Scientific and Technological Institutions and companies.

Law 11,196/2005 provides for the granting of incentives with the purpose of stimulating technological development in Brazil, and it is up to the federative entities, within their competences, to implement legislation with the purpose of inducing the development of places or regions.

As an object of study, the research seeks to highlight some municipal practices of Brazilian municipalities that have already legislated on the proposed theme, without delving into the results obtained. The municipality of Juazeiro do Norte, CE, was the first municipality to pass a law seeking to induce innovation, scientific development, research, scientific and technological training, creating the Municipal Science, Technology and Innovation Policy and establishing guidelines for the Master Plan of Technologies of the Smart City of Juazeiro do Norte, all related to smart cities (CNM, 2019). Complementary Law no. 117, of June 11, 2018, of the Municipality of Juazeiro do Norte, provides that the Municipal Public Power will make efforts to promote the development of the scientific, technological and innovative potential of the Municipality, in order to establish fiscal incentives for micro and small companies, which develop solutions based on the intensive use of advanced technologies or through innovation processes. The incentive is related to the Tax on Services of Any Nature (Imposto Sobre Serviços de Qualquer Natureza – ISSQN).

Another Municipality that also approved similar legislation was Petrópolis, RJ, when it published Law n. 7,799, on June 6, 2019. The law creates the Public Policy to encourage innovation and technological research, sustainable development and the consolidation of innovation environments in the productive and social sectors of the city of Petrópolis, and in article 1, the Law establishes measures to encourage technological and innovation activities carried out by organizations and citizens established or domiciled in the municipality of Petrópolis, aiming to promote economic, social and environmental development and the improvement of municipal public services.

Given the pandemic scenario we experienced after the publication of the mentioned laws, it is still early to have a better understanding if the legislation will really enable the increment of improvements in the development of cities. However, the Governments need to follow the examples of cities that have already legislated on the subject, to enable through extrafiscal taxation the emergence of studies, researches, measures that enable the implementation of the concepts of intelligent cities.

5 FINAL CONSIDERATIONS

This paper aimed to verify the existence of a relationship between the concept of smart cities and the promotion of human rights, as well as the use of extrafiscal taxation as an inducer of the development of cities. We also approached the transformations that society and cities go through, which must be taken into consideration by urban law and city planning.



It was noticed that the right to the city is the result of a social evolution of human beings, that is, an evolution of the individual that goes through each of the historical periods and calls for the regulation and implementation in the legal scenario of new rules, arising from the dynamogenic process.

It is certain that all urban centers present challenges to be faced. Hence the importance of urban planning and the development of dynamic decision-making mechanisms that consider the development and inclusion of citizen participation processes in the management of such challenges. The improvement of living conditions in cities will depend on a management that takes into account what happens in them, the differences existing in each region, and this will only be possible from the moment that structural changes in government are implemented, that new forms of communication take place with the inclusion of the different actors in the whole process.

As far as smart cities are concerned, it was found that it is extremely important that public administrators start implementing ICTs as a way to reduce social inequalities among city dwellers, because the use of these technologies will enable the improvement of many problems faced by cities, resulting in a better quality of life for the residents.

The use of technology is an important tool for improving the conditions of cities, but other aspects must be taken into consideration, especially when planning becomes part of the process of transforming cities to become intelligent. It is a necessary, but not sufficient condition to define the intelligence of a city. Without citizens who have access to education, who are participative and who master the available technologies, a truly intelligent city cannot be built.

It is believed that a path to be followed for the development of smart cities is for the Public Authorities to create mechanisms to stimulate the adoption of positions, by private individuals, in the search for the development and implementation of technologies to improve the living conditions of people who live in the cities, being able to use taxation - in the extrafiscal modality -, a measure that would enable the induction for the implementation of smart cities concepts, significantly improving the quality of life of city dwellers.

Thus, it is up to the managers to create environments to stimulate the development of technologies that help the citizen/company in the process of creating new intelligent solutions for the cities and, with the effective participation of the citizens in the planning, we will certainly have more egalitarian cities, which offer greater dignity and quality of life, thus ensuring greater effectiveness to the rights of the people who live in them.

REFERENCES

ABDALA, L., SCHREINER T., COSTA, E., SANTOS, N. *Como as cidades inteligentes contribuem para cidades sustentáveis: uma Revisão Sistemática da Literatura*. **International Journal of Knowledge Engineering and Management**. Florianópolis, v. 3, n.5, ISSN 2316-6517, p. 98-120, mar2014/jun2014. Disponível em: <http://via.ufsc.br/wp-content/uploads/2016/06/Cidades-Inteligentes_Lucas.pdf> Acesso em 03 de junho de 2018.



AIETA, Vania Siciliano. *Cidades Inteligentes: uma proposta de inclusão dos cidadãos rumo à ideia de “cidade humana”*. **Direito da Cidade**. Rio de Janeiro, vol. 08, n. 4. ISSN 2317-7721, pp. 1622- 1643, 2016. Disponível em: < <http://www.e-publicacoes.uerj.br/index.php/rdc/article/download/25427/19155>> Acesso em 04 de junho de 2018.

ANDRADE, Josiane Nascimento; GALVÃO, Diogo Cavalcanti. *O conceito de smart cities aliado à mobilidade urbana*. **Humanæ. Questões controversas do mundo contemporâneo**, Recife, v. 10, n. 1. ISSN: 1517-7606, 2016. Disponível em: < <http://humanae.esuda.com.br/index.php/humanae/article/view/478/150> > Acesso em 04 de junho de 2018.

ARISTÓTELES. *A política*. Traduzido por Roberto Leal Ferreira. São Paulo: Martins Fontes, 2002.

BALEIRO, Aliomar. *Limitações Constitucionais ao Poder de Tributar*. 7ª ed. Atualizada por Misabel Abreu Machado Derzi. Rio de Janeiro: Forense, 1999.

BRASIL. *Constituição da República Federativa do Brasil*. Senado Federal. Promulgada em 05 de Outubro de 1988.

_____. *Lei nº 10.257*, de 10 de julho de 2001. Regulamenta os arts. 182 e 183 da Constituição Federal, estabelece diretrizes gerais da política urbana e dá outras providências. Disponível em: http://www.planalto.gov.br/ccivil_03/leis/LEIS_2001/L10257.htm. Acesso em 03 de junho de 2019.

_____. *Lei nº 10.973*, de 2 de dezembro de 2004. Dispõe sobre incentivos à inovação e à pesquisa científica e tecnológica no ambiente produtivo e dá outras providências. Disponível em: http://www.planalto.gov.br/ccivil_03/_ato2004-2006/2004/lei/l10.973.htm. Acesso em 03 de junho de 2019.

_____. *Lei 11.196*, de 21 de novembro de 2005. Institui o Regime Especial de Tributação para a Plataforma de Exportação de Serviços de Tecnologia da Informação - REPEs, o Regime Especial de Aquisição de Bens de Capital para Empresas Exportadoras - RECAP e o Programa de Inclusão Digital. Disponível em: http://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2005/Lei/L11196.htm. Acesso em 03 de junho de 2019.

C40 SÃO PAULO CLIMATE SUMMIT. **Síntese do C40 São Paulo Climate Summit 2011**. São Paulo: Prefeitura de São Paulo, 2011. Disponível em: <http://cetesb.sp.gov.br/proclima/wp-content/uploads/sites/36/2014/05/smd_uusp_c40_pt_en.pdf>. Acesso em 03 de junho de 2018.

COSTA, Carlos Adriano da. *A extrafiscalidade tributária na concretização do bem-estar social*. In: **PRÊMIO DO TESOUREIRO NACIONAL**, 21., 2016, [S.l.], [s.n.]. Disponível em: https://sisweb.tesouro.gov.br/apex/cosis/monografias/obtem_monografia/809. Acesso em: 7 junho de 2019.

COSTA, Carlos Augusto. *Cidades inteligentes e big data*. **Cidades inteligentes e mobilidade urbana**. Cadernos FGV Projetos. Rio de Janeiro, Ano 10, nº 24. ISSN 1984-4883. p. 108-122. 2015. Disponível em: <http://fgvprojetos.fgv.br/sites/fgvprojetos.fgv.br/files/cadernos_fgvprojetos_smart_cities_bilingue-final-web.pdf>. Acesso em 04 de junho de 2019.

FERNANDES, Maria Teresa Diogo da Silva Porto. *Cidades Inteligentes: um novo paradigma urbano: estudo de um caso da cidade do Porto*. Porto, 2016. 90 f. Dissertação (Mestrado em Gestão). Católica Porto Business School, Universidade Católica Portuguesa, Porto, 2016. Disponível em: <<https://repositorio.ucp.pt/bitstream/10400.14/21641/1/Tese%20cidades%20inteligentes%20-%20estudo%20de%20caso%20.pdf> >. Acesso em 02 de julho de 2018.

FRIGO, Claudemir e MARTINS DA SILVA, Ana Lucia. *Função Social dos Tributos/Programa Nacional de Educação Fiscal*. 3ª ed. Brasília: ESAF, 2008.

JUAZEIRO DO NORTE. *Lei Complementar Municipal nº 117, de 11 de junho de 2018*. Dispõe sobre mecanismos, medidas e projetos para estímulo ao desenvolvimento científico, à pesquisa, à capacitação científica e tecnológica e à inovação no Município de Juazeiro do



Norte, cria a Política Municipal de Ciência, Tecnologia e Inovação, estabelece diretrizes ao Plano Diretor de Tecnologias da Cidade Inteligente de Juazeiro do Norte e dá outras providências. Disponível em: <https://www.juazeiro.ce.gov.br/Imprensa/Diario-Oficial/Num4762-14062018/>. Acesso em 03 junho de 2019.

KLINK, Jeoren. *Regionalismo e reestruturação urbana: uma perspectiva brasileira de governança metropolitana. Educação*, Porto Alegre, v. 32, n. 2, p. 217-226, 2009. Disponível em: <<http://revistaseletronicas.pucrs.br/ojs/index.php/faced/article/download/5524/4019>>. Acesso em 02 de julho de 2018.

LAYRARGUES, Philippe Pomier. *Educação Ambiental com Compromisso Social: o desafio da superação das desigualdades*. in LOUREIRO, Carlos Frederico Bernardo; LAYRARGUES, Philippe e CASTRO, Ronaldo Souza (orgs.). *Repensar a Educação Ambiental: um olhar crítico*. São Paulo: Cortez, 2009.

LEFF, Enrique. *Racionalidade Ambiental: a reapropriação social da natureza*. Tradução: Luís Carlos Cabral. Rio de Janeiro: Civilização Brasileira, 2006.

MARINS, James e TEODOROVICZ, Jeferson. Artigo Científico. *Rumo à Extrafiscalidade Sócio Ambiental: Tributação Diante do Desafio Social e Ambiental Contemporâneo*. Disponível em: <http://www.abdconst.com.br/revista3/jamesmarins.pdf>. Acesso em 24 de junho de 2019.

MINISTÉRIO DO MEIO AMBIENTE. Agenda 21 global. Disponível em: <http://www.mma.gov.br/responsabilidade-socioambiental/agenda-21/agenda-21-global>. Acesso em 03 de junho de 2018.

MORENILLA, Juan. *Cidades gigantes, desafios gigantes*. 11.02.2016. Disponível em: <https://brasil.elpais.com/brasil/2015/04/09/internacional/1428595647_142720.html>. Acesso em 03 de junho de 2018.

ONU. *Declaração Universal dos Direitos Humanos*. Disponível em: <<http://www.onu.org.br/img/2014/09/DUDH.pdf>>. Acesso em 03 de junho de 2018.

ORGANIZAÇÃO DAS NAÇÕES UNIDAS. <www.onu.org.br/rio20/img/2012/01/rio92.pdf>. Acesso em 03 de junho de 2018.

_____. *Declaração Sobre o Direito ao Desenvolvimento 1986*. Disponível em: <<http://www.dhnet.org.br/direitos/sip/onu/spovos/lex170a.htm>>. Acesso em 03 junho de 2018.

PETRÓPOLIS. *Lei Municipal nº 6018, de 09 de setembro de 2003*. Dispõe sobre a concessão de incentivos fiscais e econômicos para empresas que se estabeleçam no Município de Petrópolis ou nele ampliem suas atividades, institui o fundo de desenvolvimento econômico do Município de Petrópolis – FUNDEMP, e dá outras providências. Disponível em: <https://leismunicipais.com.br/a/rj/p/petropolis/lei-ordinaria/2003/602/6018/lei-ordinaria-n-6018-2003-dispoe-sobre-a-concessao-de-incentivos-fiscais-e-economicos-para-empresas-que-se-estabelecem-no-municipio-de-petropolis-ou-nele-ampliem-suas-atividades-institui-o-fundo-de-desenvolvimento-economico-do-municipio-de-petropolis-fundemp-e-da-outras-providencias>. Acesso em 03 junho de 2019.

PETRÓPOLIS. *Lei Municipal n. 7.799, de 06 de junho de 2019*. Cria a Política Pública de incentivo à inovação e a pesquisa tecnológica, ao desenvolvimento sustentável e a consolidação dos ambientes de inovação nos setores produtivos e sociais da cidade de Petrópolis e dá outras providências. Disponível em: <http://www.petropolis.rj.gov.br/pmp/index.php/servicos-na-web/informacoes/diario-oficial/finish/242-junho/4511-5692-sexta-feira-7-de-junho-de-2019.html>. Acesso em 03 junho de 2019.

PIONTKEWICZ, Regiane; FREITAS, Maria do Carmo Duarte; BIZ, Alexandre Augusto. *Benefícios fiscais para incentivo à inovação tecnológica no Brasil: informação para uso no processo de tomada de decisão em indústrias de grande porte*. **RACEF – Revista de Administração, Contabilidade e Economia da Fundace**. v. 8, n. 2, p. 31-47, 2017.

PIOVESAN, Flávia. *Temas de Direitos Humanos*. São Paulo: Saraiva, 2014.

SILVEIRA, Vladimir Oliveira da; ROCASOLANO, Maria Mendez. *Direito humanos: conceitos, significados e funções*. São Paulo: Saraiva, 2010.

UN-HABITAT. **State of the world's cities report 2012/2013**: prosperity of cities. 2012. Disponível em: <http://www.unhabitat.org/pmss/getElectronicVersion.aspx?nr=3387&alt=1>>. Acesso em 30 de junho de 2018.

VIEIRA, Lina Maria. *Educação Fiscal e Cidadania*. Organizadora: Eloísa Maia Vidal. Fortaleza: Edições Demócrito Rocha, 2010.

WEISS, Marcos Cesar. **Cidades inteligentes como nova prática para o gerenciamento dos serviços e infraestruturas urbanos**: estudo de caso da cidade de Porto Alegre. Centro Universitário da FEI. Dissertação de mestrado. São Paulo, 2013. 167 f. Disponível em:

<http://www.academia.edu/7390000/CIDADES_INTELIGENTES_COMO_NOVA_PR%C3%81TICA_PARA_O_GERENCIAMENTO_DOS_SERVI%C3%87OS_E_INFRAESTRUTURAS_URBANOS_estudo_de_caso_da_cidade_de_Porto_Alegre>. Acesso em 02 de julho de 2018.

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