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Opinion Article

Social and Political Governance of Goods

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Summary

Local development and water consumption are a binomial that supposes and demonstrates the emergence of a system of availability and intensive use of water based on a context subjugated by the sociopolitical relationship between society and the State. In this vein, studies related to the binomial offer a perspective in which rulers and governed are determined by asymmetries. It is an ethic in which natural resources are not only considered exclusive to humanity or generation, but are also valued according to their contribution to Sustainable Development, the system that exploits nature in a way that guarantees its future exploitation. In this sense, this work exposes the dimensions and axes of discussion around which the central themes in the construction of a sociopolitical agenda are established. In this way, a documentary study was carried out with selected information sources in the databases of scientific search engines with ISSN and DOI registration. The results show a diversity of constructs around which water consumption is explained as a result of beliefs related to scarcity and the technology for its optimization.

Abstract

Local development and water consumption are a combination that represents and shows the emergence of a system availability and intensive water use based on a socio-political context subjugated by the relationship between society and state. In this vein, studies of the binomial offer a perspective in which rulers and ruled are determined by asymmetries. It is an ethic in which natural resources are not only considered exclusive of humanity or generation, but are also valued according to their contribution to Sustainable Development, the system that exploits nature in a way that guarantees their future exploitation. In this sense, the present study describes the dimensions and areas of discussion around which the central themes are set on building a sociopolitical agenda. Thus, conducted a desk study information sources selected in the databases of scientific search engines with ISSN and DOI registration. The results show a variety of constructs around which water consumption is explained as a result of beliefs about scarcity and technology for optimization.

Keywords: water resources; municipal services; local development; sustainable consumption; social and political representations

Introduction

Global and local water situational trends are presented to project the corresponding water sustainability. In this sense, public policies are essential to establish the costs of water supply. However, citizen, community and neighborhood participation is also essential in establishing unit water prices (Abramo, 2012) [1]. Thus, on a global level, water sustainability is determined by public policies that encourage water savings through international tariff standards. The price of water would be a consequence of international agreements in which the signatory countries undertake to reduce their agricultural, industrial and commercial processes. The unit cost would be defined by the level of availability per capita. A greater amount of water for each person would imply a standard cost for the plaintiff. A consumption greater than a threshold would

exponentially increase the unit price. Globally, costs would be reduced and benefits would increase substantially. However, presidents or ministers cannot make global decisions without compromising local development (Beck, Sinatra and Lombardi, 2013) [2]. In this sense, at the continental level, the relationship between the industrial north and the agricultural south, the trade between the economic blocks, directly affects the financial and migratory flows that must be considered in the equation of a public policy for water sustainability. At the level of the continents, the establishment of a charging system for water service is more feasible if the commercial agreements between the members of the economic blocks are considered. As a geopolitical group, a public tariff policy would be aimed at subsidizing rich citizens for the subsistence of poor residents. It is a rate system in which those with greater purchasing power pay a standard rate that includes the financing of those who live in exclusion, marginality or vulnerability. However, localisms continue to have a specific weight when establishing standard rates and therefore it is necessary to review the national level to clarify the factors that impede sustainability at the continental level (Acosta, 2010) [3]. One cause of economic blocks has been nationalism. From the nationalist conflicts that led Europe to create a common market, to the regionalisms that today promote the collapse of monarchies in Africa and the Middle East, local ideologies have determined the future of societies. In Mexico, conflicts over the right to water have been alleviated with centralist and federalist public policies in which extraction and distribution from one basin to another is justified. The State, through the estimates of the Ministry of Finance and Public Credit (SHCP), the Bank of Mexico (WB) and the National Water Commission (CONAGUA), has established public policies oriented toward economic growth rather than development. sustainable. The State ignored the water rights and assets of rural communities and urban neighborhoods. In this sense, each unit of water has a different and inequitable price. Water is cheap for those who have greater purchasing power and consume more. On the other hand, groups that save water, despite being unemployed or underemployed, pay five times more than its real cost. However, national water policy is diversified at the state level. In a federalist country, state governments are a counterweight to the omnipresence of the executive. An initiative of the president can be modified by the upper and lower house, the state congress and the governor. If we add to this the altitude at which rural communities and urban neighborhoods live, we have that states would legislate a differential rate system for each entity. Therefore, state water sustainability would have its main obstacle in the finances of the states. State governments often spend more than they receive from the federation. This encourages national and local operating organizations to seek agreements to build a subsidy system that benefits users with low prices. The result is a public action organized for collection but disorganized for supply. Without fail, receipts are distributed to users but water service is intermittent. Therefore, state water sustainability benefits cities to the detriment of rural areas (Barkin and Lemus, 2011) [4]. The Metropolitan Zone of the Valley of Mexico (ZMVM) is a paradigmatic case of the water trend in the history of humanity. The ZMVM has always been a repository of precipitation, seepage and discharge from rivers and lagoons. It could be assured that since the founding of the Valley of Mexico there was an evident overload. As centuries and cultures have passed, the basin has emptied. It is estimated that the current extraction trend would last for about two or three decades until its structure is compromised. This geographical complexity is no less than the sociopolitical complexity. The Valley of Mexico is administered by three entities with their respective congresses. A metropolitan water policy would be defined by representatives of different localities with different needs, expectations and consumption capacities. However, the Mexican Political System (SPM) is characterized by homogenizing people's demands and the corresponding offers. Based on this structural political feature, a price system water policy is in reality a system of concessions, subsidies and forgiveness. It is a public policy that does not need to be legislated to be implemented. In electoral times, the effectiveness of the political system uses the drinking water service as its instrument of promotion, definition and election of candidates and representatives. In this way, metropolitan water sustainability is discretionary, proselytizing and clientelist. Consequently, at the delegation level, corruption, nepotism and clientelism are its main components (Artaza, Toro, Fuentes, Alarcón and Arteaga, 2013) [5]. A consequence of the complexity of the Valley of Mexico is its delegational and municipal demarcations. The diversity of factors that influence metropolitan water sustainability also affects water sustainability at the delegation level. However, the delegations are grouped into two groups: inclusive and exclusive. The former have a low population density and high incomes that would allow them to cover an exponential increase in rates. The latter present overcrowding, unemployment or underemployment with insufficient income to pay for a minimum variation in the unit price of water. In the case of the Iztapalapa delegation, we should add the altitude and corruption in which the neighborhoods with the greatest shortages and unhealthiness live. It is a delegation in which various factors converge and brings its residents closer to a water crisis. This situation encourages the emergence of the location or intentions-actions of non-conformity, protest, confrontation or boycott aimed at obtaining a greater amount of water. This is how water sustainability in Iztapalapa would require rates adjusted to the uses and customs of its residents who fight corruption but at the same time accept clientelism. In this sense, family-residential lifestyles complement their collective mobilizations (Carreón, García, Morales, Hernández, Rosas and Rivera, 2013) [6]. In the residential sphere, water shortages are the main trend that would lead families to hoarding, dosing and pseudo-repairing leaks. Indeed, a tariff system adjusted to austerity strategies would imply consumption thresholds determined by the number of residents, their economic activities and types of recreation. At the level of family-residential groups, water sustainability means a subsidized payment to those who save water and an exponential price to those who waste or hoard it. Consumption and pseudo-leak repair skills

would imply a smaller subsidy that would be adjusted to a standard price considering the future trend (Behancourth, 2010) [7]. Finally, the water trends presented project future scenarios in which urban density is a global, national and local problem that affects water sustainability. That is, the expected per capita availability for the coming years is a consequence of public policies that seek to stop the water trend rather than make it sustainable. In that sense, the disappearance of standard, subsidized, situational, Interval or rate threshold systems is predictable. Instead, a new pricing system will have to be implemented to remedy structural flaws. It is a rate system determined by global and local water contingencies (Carreón, Hernández and García, 2014) [8].

Regarding environmental problems, social sciences propose the following approaches:

a) Regional-Community Studies: Water problems, related to solidarity in times of scarcity and festivity in times of abundance, are felt as elements of the community. Community self-management is the main manifestation in the face of global water imbalance with local scarcity effects. That is, lakes, rivers, lagoons, aquifers or glaciers that historically belong to ethnic communities, when overexploited by cities, lead to mobilizations to defend community heritage for its preservation. In this sense, Sustainable Development is comparable to the self-management of communities for their historical right to water as their subsistence heritage (García, 2006) [9].

b) Legal studies: The main problem is the defense of the rights to access and consumption of water. That is, the aquifers, lakes and rivers that belonged to the ethnic groups were expropriated by their governments and redistributed to areas of industrial or agricultural economic development. Once again, Sustainable Development is the solution to the problem of legal recognition of peoples' self-determination. Sustainable Development is conceived as a document, treaty or agreement in which the laws or principles of the relative autonomy of peoples, groups or human settlements are reflected. Institutions such as environmental secretaries or human rights commissions serve as jealous watchdogs of the agreements that states have signed to control their abuses on the communities and resources that correspond to them.

c) Economic-Social Studies: Water problems are studied in relation to human development indices. Ideal human development is related to the optimization of water resources. In contrast, poor human development is linked to scarcity, corruption, leaks and waste. From the economic sciences, the dilemma of the capitalization of natural resources versus their conservation arises. Faced with such a dilemma, Sustainable Development is proposed instead of economic growth and the preservation of the environment (Corral, 2010: 123). Water economic approaches establish water saving mechanisms through tariff systems. The price of the drinking water service is established through the minimization or maximization rates of the relationships between the services, their costs and their benefits in exchange situations. In this sense, an increase in unit prices of water affects the reduction of consumption and distributive equity. Precisely, in the ZUP subsidies are established while in the ZUC incentives for the optimization and treatment and reuse of water. Economic organizations such as the International Monetary Fund or the World Bank measure sustainable development based on indices specialized in establishing the causal relationship between per capita income and health, work, education, nutrition, quality of life or subjective well-being (Chang, Parandvash and Shandas, 2010) [10].

d) Political-Social Studies: The impact of the scarcity of water resources on the central and peripheral areas of public investment decisions is the problem that frames the study of conflicts between citizens and their authorities. There are two water problems: equity and financing of the service. Faced with citizen demands, rulers offer greater coverage by overexploiting aquifers and filtering wastewater. It is a public policy guided by sustainable planning; comprehensive, efficient, equitable and inclusive. The demands for water resources are manifested in sit-ins, rallies, marches, propaganda and confrontations with the police. Citizen mobilizations are analyzed as "clienteles", a mechanism of electoral political control of the parties over excluded groups. Faced with such problems, solutions are studied that revolve around an electoral reform in which rulers offer greater transparency in the management of resources in exchange for greater citizen participation in elections and accountability. In this sense, the legislative power and its initiatives are studied that allow the direct participation of majorities and especially minorities, the main victims of economic growth at the expense of overexploitation and scarcity of resources, in investment and financing decisions for personal and group development. Sustainable Development is the product of debates between citizens and the state, it is an agreement in which both political figures agree to the rational, planned and moderate exploitation of water resources (Carreón, Hernández, Morales and García, 2013) [11].

e) Sociological Studies: Water problems focus on environmental uncertainty. The environment is considered as a set of incommensurable, unpredictable and uncontrollable variables that exhibit humanity and its societies as part of the process of evolution and transformation of nature. That is to say, nature has gone through different evolutionary stages and the climate change that we are experiencing and suffering today is just one more stage in the development of the Earth. In this stage, humans will become extinct unless their systems can delay the effects of climate change or adapt their descendants to the environmental contingency. Sociological sciences propose risk societies in which technological advances such as nuclear power plants, air transport or water infrastructure

can collapse at any time and thereby compromise the growth of current and future generations. Sustainable Development is a context of certainty in times of risk, a context of security in times of uncertainty, a context of trust in times of negligence and corruption (Durand, Figueroa and Genet, 2011) [12].

f) Psychological Studies: Water problems consist of the impact of water availability on perceptions, emotions, attitudes, motives, intentions, skills, competencies and behaviors. Scarcity, shortages, hoarding or unhealthiness have a direct effect on water savings. This effect is also mediated by cognitive variables. Psychologists carry out the reliability and validity of the instruments that measure these variables to relate them to other situational, demographic, educational or geospatial variables. Sustainable Development consists of the adoption of anti- or pro-environmental cognitive and behavioral styles (Carosio, 2010) [13]. Public policies determine global, continental, national, state, metropolitan, regional, residential and prospective water sustainability. Public policies try to organize the determining factors of water availability based on tariff parameters for the financing of water sustainability. An increase in the unit price of the water service has a direct, positive and significant impact on its optimization and savings (García, 2007) [14]. In this way, public policies have created seven tariff systems to guarantee water sustainability.

i. Rate per standard: The rate per unit of water is independent of the amount of water consumed.

ii. Volume rate: The unit price of water depends on the quantity used. It increases or decreases based on government discretion.

iii. Rate by situation: The rate per unit of water increases its cost during the day and decreases its cost during the night. During the summer season its cost increases and during the rainy season its unit price decreases. It is equitable and saves the cost of pumping and purification.

iv. Interval rate: The unit price of water increases depending on the volume consumed. Based on the consumption intervals, prices are applied that increase as consumption exceeds the permitted thresholds. Threshold rates: The unit price of water is constant as long as it does not exceed the comfort threshold. Once the assigned consumption has been exceeded, a linear, logarithmic, exponential or logistic increase is applied.

v. Self-financing fee: The unit cost of the service is established based on family income and a comfort threshold. Once the allowed limit is exceeded, the cost increases for each extra cubic volume.

vi. Subsidy fee: The unit cost of the drinking water service implies a standard or stratified fee and a subsidy based on a comfort threshold.

Economic Approach and Psychosocial Approach to Sustainable Development

From an economic perspective, the water problem represents an imbalance between availability and consumption that can only be resolved if a tariff system is implemented. In the world, 97.5% of water is salty, 2.24% is fresh and only 1% is available in rivers, lakes and aquifers for human consumption. 113,000 km 3 of water fall annually (United Nations Water, 2013: p. 13-18) [15]. The availability of the resource has gradually decreased. In 1950, only the Asian continent had low availability and by 2025 this shortage will extend to all five continents. The imbalance between the exploitation (estimated 4600 km 3) of the resource and its natural recharge will affect its availability for consumption (approximately 2400 km 3) in agriculture, industry and domestic activities (United Nations Habitad, 2010: pp. 16 -29) [16]. In the case of Mexico, being the eleventh most populated country in the world (101.7 million people), with a density of 52 people per km 2 on average; a population under 15 years of age (33%), 74% live in urban areas and their per capita income per year is 8,790 US dollars working 40 hours a week, their annual growth is 2.1 million and it is expected that in 2050 to increase 48%, estimating its population at 131.7 million by 2030, it has been classified as having an extremely low availability index with less than 1000 cubic meters per inhabitant per year (National Institute of Statistics, Geography and Informatics, 2010: pp. 3-24) [17]. Regarding the central and northern areas of the country where economic growth is significant, the availability of the resource is classified as very low with 1000 to 2000 cubic meters per inhabitant per year. Only the southeast of Mexico, which has had little significant economic growth, has been classified as having a high availability of 10,000 cubic meters per person per year. The northern, central and northeastern areas, which contribute 85% of the Gross Domestic Product (GDP) and have 77% of the population, only have 32% of the water availability, approximately 1,874 cubic meters per inhabitant per year. In contrast, the southeastern area, which contributes 15% of the GDP and concentrates 23% of the population, has a high availability of 66% of hydrological resources, approximately 13,759 cubic meters per person annually. Thus, the average national water availability is 4,573 cubic meters per individual per year (National Water Commission, 2012: pp. 14-16) [18]. In the case of the Metropolitan Zone of the Valley of Mexico, 18,620,763 people live concentrated in an area of 4,979 square kilometers and a population density of 3,740 people per square kilometer exacerbates the intermittent drinking water service as the main problem. In the ZMVM, during the period from 1950 to 2000, the population has increased 5.25 times and went from 3,442,557 inhabitants to 18,076,572 residents. Regarding population density, the State of Mexico and the Federal District are the first and second entities with the most occupied homes, with the Iztapalapa delegation being the most populated with 1,750,336 of which half are children under 15 years of age. Such a scenario is exacerbated if one considers that the surface water quality of 393 stations in 225 rivers, 81 stations in 62 lakes and dams,

26 stations in 13 sanctuaries and coastal sites, 15 wastewater discharge stations has been reported as very low. , as well as the underground, which consists of 228 stations in 24 aquifers, established by the Water Quality Index with values between 0 and 100, the latter value being excellent, then acceptable, slightly contaminated, contaminated, heavily contaminated, and the last as excessively contaminated. 60.7% of the surface water and 46.3% of the groundwater are contaminated and heavily contaminated, classifying the surface water of the Valley of Mexico as excessively contaminated with a 32.49 (National Water Commission, 2005: pp. 13) [19]. The water supply in the ZMVM is 68 m 3 /sec. Which comes from wells exploited 25.16 m 3 /sec. (37%), recharged wells 15 m 3 /sec. (22%), springs .36 m 3 /sec. (2%), from the Cutzamala River 13.6 m 3 /sec. (20%) of the Lerma River 6.12 m 3 /sec. (9%) and sanitation with 6.8 m 3 /sec. (10%). Regarding the degree of pressure on the resource, the ZMVM occupies first place with an overexploitation of 120% of the available water. Although the hydrological situation is extremely compromised in the ZMVM, the other hydrological regions are very close to said problem. The northern, northeastern and central zones exploit 40% of their hydrological resources (National Water Commission, Lucca: pp. 58-64). In the case of Mexico City in 1955, they had an 11500 metros cúbicosannual availability per capita. In 2004 it decreased to 4094 metros cúbicosannual per capita. In that same year, 74 percent of the total drinking water supplied equivalent to 16.157 metros cúbicosper second was consumed. Water in the Federal District is destined for industry (17%), commerce (16%) and domestic use (67%), which is divided into toilet use (40%), showers (30%), clothes (15%), dishes (6%), kitchen (5%) and others (4%). Iztapalapa, by concentrating the largest population, obtained the highest consumption with 2.732 metros cúbicosper second equivalent to 16.9 percent of the total. Gustavo A. Madero and Álvaro Obregón with 13.75 and 9.94 percent respectively. In contrast, the delegations with the lowest consumption were Cuajimalpa, Tláhuac and Milpa Alta with 5.97 percent. In this sense, an availability of annual per capita is expected by 2020 3500 metros cúbicos. Therefore, the coverage of the service is exclusive with 905,000 people who do not have drinking water because there is a shortage of six cubic meters per second (National Water Commission, 2012: pp. 30-36 [18].

In the case of domestic water consumption, the criteria to establish scarcity are:

- Critical between 1000 and 1700 metros cúbicosannually per capita
- Low between 1700 and 5000 metros cúbicosper capita annually
- Average between 5000 and 10000 metros cúbicosper capita per year
- Registration more than 10000 metros cúbicosannually per capita

32.27 percent of users are within the range threshold, 78.5 percent have a consumption less than 50 metros cúbicos, 11 percent consume less than 10 metros cúbicosand 0.38 consume more than 180 metros cúbicosbimonthly. The average payment in Mexico City is 110.25 pesos every two months. This means a collection of fees from users of 80 percent in relation to their real cost for the service (National Water Commission, 2005: p. 31) [19]. It is estimated that by 2025, 80% of the world's population will be in high scarcity. The forecast for the year 2050 implies a range of temperature increase of 1.4 to 5.6 centigrade causing a 44 centimeter rise in sea level, 5% more precipitation and the extinction of a quarter of the species. In this sense, it is estimated that by 2025 there will be a global crisis of irregular and unhealthy water supply in which 2 billion individuals will not have access to drinking water. In the year 2030, the population growth of the Metropolitan Zone of the Valley of Mexico (ZMVM) will be 22.5 million inhabitants, the Metropolitan Zone of Guadalajara (ZMG) of 4.8 million inhabitants and the Metropolitan Zone of Monterrey (ZMM) of 4.9 million population. The problem of distribution of water resources would focus on those cities with a population greater than 500 thousand inhabitants. If population projections are considered, the metropolitan areas of Guadalajara, Monterrey, Cuernavaca, Tlaxcala, Veracruz, Puebla, Aguascalientes, Toluca, San Luis and Cancún would be in a crisis of water availability expected for the year 2025.

The economic approach has established a charging system to reduce the imbalance between water availability and water consumption, consequently:

i. Rate per standard: The rate per unit of water is independent of the amount of water consumed. The rate is the same regardless of water availability or consumption.

ii. Volume rate: The unit price of water depends on the amount used, however it increases or decreases at government discretion.

iii. Rate by situation: The rate per unit of water increases its cost during the day and decreases its cost during the night. During the summer season its cost increases and during the rainy season its unit price decreases.

iv. Interval rate. The unit price of water increases depending on the volume consumed. Based on the consumption intervals, prices are applied that increase as consumption exceeds the permitted thresholds.

v. Threshold rates. The unit price of water is constant as long as it does not exceed the comfort threshold. Once the assigned consumption is exceeded, a logarithmic increase is applied.

vi. Self-financing fee . The unit cost of the service is established based on family income and a comfort threshold. Once the allowed limit is exceeded, the cost increases for each extra cubic volume.

vii. Subsidy fee . The unit cost of the drinking water service implies a standard or stratified fee and a subsidy based on a comfort threshold.

In summary, the economic approach maintains that the availability of resources is an indicator of the ecological footprint which can be reduced based on a balance of costs and benefits. As natural resources become scarce, the corresponding increase in rates would guide the consumption of other resources with greater availability. Meanwhile, the natural resource in danger of extinction could be conserved since it would be protected by the high cost of its consumption, however the consumption of a resource, from the psychosocial approach, is determined by processes of social influence. At least, the psychology of sustainability has established two influence processes, one of a majority or direct order and another of a minority or indirect order (Carreón, Hernández, Morales, Rivera and García, 2013) [20]. Majority influence states that the systematic consumption of a resource is determined by the decision-making power of the majority. If the bulk of the population is accustomed to daily personal hygiene, then the individual will be influenced to adopt an anthropocentric lifestyle in which water resources are considered an exclusive service for current human needs regardless of the capabilities of the people. subsequent human generations as well as the needs of current or future species. The majority model is direct because through a source considered an expert it can influence the individual's consumption decision. Indeed, the conformity of the individual is the end result of majority influence. In contrast, minority influence maintains that the consumption of natural resources obeys the identity that the individual establishes with the groups around him. In this way, personal hygiene can vary depending on the group lifestyle in which the individual is inserted. If the group has a rule of personal hygiene with a minimum of water, then the individual will carry out this action regardless of the availability of water. This is an indirect influence since it impacts the future lifestyle more than the consumption decision in the present. Therefore, innovation is the main consequence of minority influence (Carreón, García, Morales, Hernández, Rosas and Rivera, 2013) [20]. Both processes of social influence, majority or minority, seem to ignore the availability of resources that the economic approach shows as an essential factor, however they are relevant because they warn that regardless of the amount of consumable water, present or future decision making is determined by the social norm or group norm.

Sociopsychology of Sustainability

a) The Areas of the Theories

b) The environmental situations have been raised from the demographic (austere population density), historical (norms and values of savings or waste), economic (competitions for scarce hydrological resources), political (representativeness of citizen demands), structural (capitals of waste), cultural (availability beliefs), cognitive (environmental awareness), media (mediated opinion) and community (identity and spatial appropriation).

c) The demographic scope: It frames the population density (number of consumers or demanders of water in a residential home) determined by the availability of water (number of liters stored for domestic, hygienic and consumption needs). Indeed, it is considered that in the nature-humanity relationship, water is the main intermediary resource because agriculture was developed from it, which would allow production cycles to be established based on the rainfall season. This scheduling of sowing and harvesting allowed the development of the towns. However , because the population in Mexico tends to concentrate in areas with low availability of the resource, it is necessary to complement this demographic area with the historical area that allows us to respond to this paradox (Carreón, García and Morales, 2014) [21].

d) The historical scope: It frames the dissemination of values and norms regarding hydrological availability. It is considered that in the nature-humanity relationship, biospheric values (mystification, exploration and care of the environment) and capitalist values (demystification, exploitation and destruction of the environment) have developed that guide norms within a group, then are amplified to a community. , they extend to a region and finally, they expand on a global scale through deliberate and irrational, planned and heuristic, systematic and improvised behaviors. Based on such processes, humanity competes for resources and at the same time joins forces to redistribute said resources. In the case of water, humanity has preserved it with habits of dosage, saving and reuse that systematically and improvisedly deplete the resource, compromising its use in the future. The historical sphere frames the evaluative processes around the hydrological resource and has its complement in the economic sphere that frames the competition for the regular and healthy supply of water (Gissi and Soto, 2010) [22].

e) The economic sphere: Frame the nature-humanity relationship as asymmetric processes in which humanity competes for resources until compromising their renewal, causing their extinction or forcing their transformation. In the case of hydrological resources, humanity has not only over-exploited them but has also over-used them. For example, the most important rivers for ecosystems (Amazon, Plata, Ganges, Yangtze, Nile, Mississippi) have been used as energy generators by installing hydroelectric plants on their tributaries with the purpose of guaranteeing energy supply to cities. Faced with such scenarios, the neoclassical approach that considers natural resources as goods external to the public and private spheres has predominated, thereby justifying their overexploitation by private capital. However, the ecological economics approach seeks to counteract this approach by considering that resources are prospective goods whose irresponsible exploitation in the present compromises their availability in the future, affecting subsequent generations. This approach to the ecological economy is complemented by the political sphere because it involves the State as the main actor that will meet the hydrological demands of citizens and will manage the

investment or promote the education of said citizens based on hydrological availability (Nozica, 2011)[23].

f) The political sphere: Frame In the nature-humanity relationship, the State is the regulator of said relationship. In this sense, the State is not only an entity that receives requests for water supply, guides public investment and redistributes hydrological resources, but is also a setting for debate of demands and efforts. In this scenario, the nature-humanity relationship has been replaced by three relationships:

g) Infrastructure – taxpayers: The State argues that in the solution to situations of scarcity, irregular supply and unhealthiness of water, public investment is essential. The State manages loans in international financial organizations to build infrastructure aimed at distribution, measurement, collection and fines for drinking water, drainage and sewage services (Quiroz, 2013)[24].

h) Water–citizenship: The State promotes the care of water in basic schools, media, transportation routes and public spaces with the intention of raising awareness among citizens about paying their taxes not based on hydrological availability but based on the availability of public resources.

i) Epidemic-community: The State designs, legislates and implements health care programs for communities excluded from safe water or in vulnerable areas where gastrointestinal epidemics break out. Through social workers and health center statistics, it collects information on the health of the communities and the drinking water service (Leff, 2010) [25].

j) The three relationships suppose a welfare state that tries to regulate the nature-humanity relationship based on the administration of human, financial and hydrological resources. Precisely, the structural field will focus on these resources, conceptualizing them as capital; human, financial and natural (Picazzo, Gutiérrez, Infante and Cantú, 2011) [26].

k) The structural scope: It frames individuals who, when interacting, build social systems based on their economic and educational resources. In this way, people are located in social positions from which they systematize or improvise behaviors that identify them as a homogeneous group. Research from this field has found that men, professionals and with high incomes are more likely to recognize and care for the environment, as well as to finance environmental movements. This prototype of a human being has identified himself as an environmentalist. However, the indicators of environmentalism are not sufficient to explain the meaning of Sustainable Development. For this reason, the cultural field has developed a more relevant explanation.

l) The cultural sphere: It frames environmentalists who, in Anglo-Saxon cultures more than in Latin cultures, have post-materialist (questioning economic progress) and eco-centric (environmental preservation rather than economic growth) worldviews. In contrast, there are people with low incomes, concentrated in the periphery of cities, with low educational levels who have materialistic (economic growth) and anthropocentric worldviews (it is considered that nature should satisfy only human needs). Because Sustainable Development suggests guaranteeing the rights and capabilities of future generations to develop, the cultural sphere explains the origin of the controversy between those for and against sustainability. However, in humanity, citizenship and even in communities, there are deliberate, planned and systematic processes from which individuals underlie and even replace groups. It is a process that the cognitive field has reliably framed.

m) The cognitive field: It frames the mediating function of perceptions, attitudes, motives, knowledge and intentions. This implies that the scarcity of natural resources indirectly, positively and significantly affects human behavior; furthermore, this effect is mediated by cognitive factors that, when interacting, shape planned processes. The cognitive field has shown that motives, perception of control and risks, knowledge, attitudes and intention have been mediating or transmitting variables of the effects of a situation of scarcity on human behavior. However, ecological behavior has been contradictory as there is a low correlation between recycling and reuse in Latin cultures. Consequently, Sustainable Development has been proposed as the solution to the problem. In essence, this approach suggests behavior that benefits both present and future generations, through actions such as controlling leaks and saving water. The cognitive field only frames the impact of the scarcity of natural resources on planned human behavior. It is in the media sphere that frames the impact of the water situation through the massive dissemination of the hydrological situation.

n) The media field: Frame the appropriation of messages regarding the environmental situation and government actions. By disseminating the hydrological situation and government actions around the problem, the media have a direct and significant effect on citizen decisions and actions. Public opinion, when influenced by mediated information, constructs decisions that lead it to participate in favor or against hydrological public policies. Government actions tend to respond more to media demands than to citizen demands. In this way, the demonstrations, blockades and confrontations with authority are explained from the study of neighborhoods considered as communities.

o) The community level: It frames the social construction of the sense of belonging to a neighborhood and the appropriation of spaces such as; streets, parks, squares and schools based on collective memory (construction of images and discourses around a process or entity). Reality, whatever it may be, involves local identity systems and global economic systems that are mutually inclusive but also mutually exclusive. Mainly,

when producers and consumers demand new relationships based on over-exploited resources, innovative production, diversified credit, unusual consumption and deteriorated ecology. Therefore, the community level frames the impact of the hydrological waste of the opulent economic zones on the supply needs of the excluded economic zones. It proposes social change based on the conflict between the political economic structure and the demanding minorities (Kallis, Ray, Fulton and McMahon 2010) [27].

p) The eight areas frame situations derived from the exclusive distribution of hydrological and social resources, whether economic, political or psychological. The exploration of the situations is focused on the preliminary distribution of resources. The description of the situations is limited to the indicators of abundance or scarcity of resources. The explanation is concentrated on the causes and effects of the distribution of resources. Finally, understanding is built from symbols, meanings and senses that are linked to resources. The units of analysis, study methods and research techniques of the eight approaches are recovered. However, the areas only frame the problem of distribution of resources in some of the elements of the system. It is the theories that articulate the categories of each systemic element.

q) The theories involved with these eight approaches are presented below with the purpose of explaining the relationship between nature-culture, resources-State-taxpayers, products-market-consumers, spots-media-spectators and situations-participations.

The Theories of Sustainability

a) Nature-Culture Relationship: The symbols, meanings and meanings that correspond to it are the means that involve pre-materialist cultures, materialist cultures and post-materialist cultures with the environmental environment. In pre-materialist cultures, nature is symbolized as a conglomerate of community elements as significant as the human elements that form a group. In contrast, nature is often symbolized as inexhaustible resources by groups that transform and redistribute it, promoting the inequalities characteristic of neoliberal economic societies. Finally, when post-materialist cultures have achieved a very high economic and educational status, nature is symbolized as a setting for the rights of each organism for its subsistence. Based on these sociocultural distinctions, nine theories explain cultural worldviews of nature (Londoño and Cardona, 2011) [28].

b) The Structural Culture Theory: interprets the symbols constructed by cultures in reference to the environment, structured from conflicts and successive changes. A culture, whether materialist or post-materialist, is configured from symbols and meanings of power, influence and innovation. If nature is symbolized as resources that signify progress then groups will be divided into materialists with different levels of order and growth. These are the arguments that explain the economic influence of technologically advanced countries and countries dependent on these innovations. The world is made up of central areas, scarce in natural resources, but competitive, which determine the peripheral areas with abundant natural resources but technologically backward. In this sense, colonialism, imperialism and globalization are geopolitical phases that are structured from the usurpation of nature by the most technologically advanced groups. In both areas, the symbols and meanings of nature are the main components of values and beliefs from which cultures are described.

c) The Descriptive Culture Theory: interprets the principles that support the habits, traditions and customs of groups, differentiating them into pre-materialist, materialist or post-materialist cultures. Nature is part of communities' worldviews; Each element of culture would have its reference in nature, the way in which organisms compete for resources would have an equivalent process in cultures. The ethnic cleansing of African communities is explained by their sociocultural process of materialism. That is, when communities symbolized nature as a communal habitat, water, animal and plant species were shared because they came from the same origin and would arrive at the same destination. However, when these communities were colonized, the integral worldview fragmented, dividing and confronting the communities over water and species that became scarce in inverse proportion to population growth. Once the independence of these communities was achieved, the leaders implemented dictatorships that facilitated corruption and impunity around the exploitation of energy resources. African communities were transformed into radical groups to defend their resources against invaders or into extermination groups to control resources. Indeed, nature is symbolized indirectly through culture (Leff, 2011) [29].

d) The Theory of Symbolic Culture: Interprets the archetypal construction of groups and the relationship with their environment. For this reason, the buildings of the Egyptian, Mesoamerican, Chinese, Hindu or Hebrew civilizations are archetypes of cult, mysticism and power that summarize the symbolic construction of cultures in the face of changes and environmental contingencies. Almost always, these processes present themselves as crises activated by water scarcity. In Egypt, Memphis, their ancestral city, droughts accelerated famine and the end of the omnipresent power of the pharaohs. In Mexico, the abundance of water caused flooding in the ancient city of Tenochtitlán, forcing the Aztecs to build canals and aqueducts to solve the problem. In Greece, nature was represented archetypically; Water, wind, fire and earth were the essential elements for Hellenic pre-Socratic philosophy. However, civilizations also symbolize nature based on their indicators of change and their actions to transform it. Individuals are influenced by the groups to which they belong through representations of the environment. If the

group represents nature as an immeasurable and omnipresent symbol, individuals build codes of respect and coexistence with animal and plant species. Nature is symbolized as mother earth, creator of living beings. Nature means source of mutually inclusive life and death. In contrast, if nature is represented as a source of wealth, individuals build instruments for its domination, transformation and redistribution. Individuals develop skills and knowledge influenced by the group's cultural representation of their environment. In this way, the individual is a cultural element that reproduces the codes that the group constructs, it is a product and a process of construction of representations. Culture is a producer of meanings and senses of preservation or transformation of nature. Nature is a cultural reference that underlies community elements for pre-materialist groups, resources for materialist groups and protected areas for post-materialists. In this way, affluent areas tend to represent water as an element of everyday life that can be extracted, distributed, consumed, recycled, redistributed and reused. In contrast, excluded areas tend to represent water as a vital element that determines the health and status of the neighborhoods, groups and residents that make them up. In this sense, risk perception is the evolution of exposed cultures because information about nature is processed in each inhabitant to be optimized by the groups, neighborhoods and communities to which they belong.

e) Social Framing Theory: explains only information that can be permanently symbolized through meanings. That is, images and discourses are identified, selected and reconfigured into codes of the group, neighborhood or community in which they are constructed. An optimized symbolization of water would imply its extraction, distribution and use based on the feelings of the communities, the identity of the neighborhood or the membership of the social group. Precisely, areas peripheral to economic development have been showing perceptions and values that are both unfavorable and favorable to the environment. In the case of water, the social frameworks that have been built around it refer to it as a scarce resource due to the incompetence and/or negligence of the authorities because they have not solved the problem of hydrological scarcity and unhealthiness. In these neighborhoods and communities, the groups are united by the demand for water because they have configured schemes in which the authorities are directly responsible for the deficient public water service. In effect, said community or neighborhood cohesion is linked to processes of biased selection of groups in which one belongs or wants to belong.

f) The Theory of Social Identity: explains the adhesion of individuals to groups in the face of a problem of permanent scarcity, segregated distribution and generalized unhealthiness of water, based on their demands, achievements or simply their expectations and forms of organization. In effect, residents construct symbols that they adhere to when confronting the authorities. Organized neighbors are referred to as endogenous groups compared to the authorities symbolized as exogenous groups. Decisions about belonging to one group or another are biased by the representation of fair demands for water in the face of the unfair incompetence of the authorities. However, both the demands and confrontations of the neighborhoods as well as the corruption, negligence and incompetence of the government are constant around the exploitation, distribution and consumption of water. It will be the resource management strategies that will lead the inhabitants to mobilize in search of a solution to the hydrological problem. Shared responsibility between rulers and governed is emerging, then, as the approach resulting from the social construction of water.

g) The Theory of Social Mobilization: explains the group organization to demand from the authorities the acquisition, allocation and use of budget or adherents. Furthermore, it assumes that each activist or candidate to be one makes a comparison of achievements with failures to establish criteria based on which they contribute to the collective movement or can decide to boycott or confront it. In the case of the problem of inequitable distribution of water, the plaintiffs end the conflict once the water is available and is perceived as clean (with a transparent color, with a chlorinated odor and with a tasteless taste). An increase in the rate would activate mobilization based on the resources that the community or neighborhood already has protected and allocated for collective action; blockades, rallies or direct confrontations with authority. The rational decisions that affect mobilization are mediated by pre-materialist (rootedness), materialist (productivity and competitiveness) and post-materialist (otherness) values.

h) The Theory of Local Mobilization: explains the difference between those values that guide collective action for and against the environment. Both pre-materialist and post-materialist values drive environmental conservation actions where communities and neighborhoods carry out deep-rooted habits and pro-social and pro-environmental behaviors. In contrast, in privileged areas, programs and strategies for productivity and competitiveness imply values that fragment groups and isolate their members. These are post-industrial cultures that, once financial stability is achieved, are legitimately concerned with the conservation of nature through the reduction of consumption (austerity and boycott), the reuse of products and the recycling of containers.

i) The Alternative Mobilization Theory: explains European societies that in the early 1960s questioned the exploitation of nature based on human needs, the unequal distribution of energy, water and spaces between humans and species. The environmental groups that raise the limits of population and economic growth of humanity, the specialists who reveal the deterioration of the Earth and the subsequent climate changes. Proposals arise to restore the balance of the availability of

resources in the face of human needs, new forms of relationship with the environment, innovative forms of renewable energy use, new fiscal policies to punish ecocides and new laws to protect species. In reference to the situations of distribution, unhealthiness and cost of urban water service, nine theories have been reviewed to explain the nature-culture relationship, emphasizing the construction of symbols, their meanings and corresponding meanings that allow us to understand the transformation of cultures into societies and the transformation of nature into the environment. This evolution involved three phases (pre-material, material and post-material) in which laws, technologies and behaviors favorable to the environment emerged. However, being subject to policies (regulation or deregulation of the economy by the State), laws, technologies and behaviors were not sufficient to achieve the balance between the scarcity of resources and the abundance of human needs. The State resumed the administration of resources to promote new transgenic, bio-energy, eco-industrial, techno-ecological and tourist markets. The neoliberal State, intermediary of the exploitation of nature, became a promoter of its preservation through direct or indirect ecotaxes to the taxpayer to finance its new function in Sustainable Development.

Resources-State-Taxpayers Relationship

When the State resumed the administration of resources, it needed direct and indirect financing from taxpayers to be included in the Sustainable Development project. Theories that emerge from the political sphere have exposed the State as a deregulator of the exploitation of resources by industrial, commercial or landowner organizations (León, 2013) [30].

a) The Theory of Political Liberalism explains the function of the State in the public dimension in reference to the private dimension. In this way, the public water administration led to irregular and unhealthy supply in metropolitan areas where the corruption of officials and housing managers accelerated urbanization. The so-called "slum belts," residential areas and housing units witnessed unsustainable high-risk demographic and spatial growth. This growth was derived from liberal and neoliberal public policies that fed the markets to the detriment of the quality of life of the inhabitants.

b) The Theory of Classical Economics explains the emergence of free competition for the configuration of stable markets to the extent of their self-regulated growth. The State was in charge of attracting investments in the construction, generation, distribution and maintenance of hydroelectric plants. However, the State regulated investments in energy and thereby accelerated or, where appropriate, stagnated the equitable distribution of water and its energy. Surrounding communities were disadvantaged by hydroelectric redistribution while cities were dependent on electric power. The hydroelectric market, controlled by the State, was stagnant until its privatization when the State decided not to intervene in free competition for the exploitation, transformation, distribution and maintenance of hydrological resources and their energy derivatives.

c) The Theory of Neoclassical Economics explains the deregulation of the hydrological energy market. The State, being the majority administrator of the resources, directly and unfavorably affects the development of the market. That is, the State and its population, energy and urban policies did not respond to the accelerated and exponential growth of demand. For this reason, the State redistributed the exploitation of resources to investors through the partial or total privatization of parastatals. The State renounced the principle of equality of the public dimension to build a market that would satisfy the demand for the aforementioned resources. The State sponsored the creation of central development zones and peripheral exclusion zones.

d) The World System Theory explains the creation and function of central zones of development and peripheral zones of exclusion. The abundance of natural and therefore energy resources encourage investment in peripheral areas. In contrast, investment determines technological innovations and scientific advances in central areas. The biotechnology generated in the central areas led to the growth of the agricultural market in the peripheral areas. Even the State sponsored the development of technological centers, such as the Silicon Valley in the United States of America, for the implementation of techno-science in the agricultural fields of Latin America. Furthermore, the State has transformed its national security functions into privatized security. The State is inserted in the dynamics of the hydrological market that it sponsored no longer as its sole administrator but as an entity that promotes and monitors investment in hydrological resources. The State that sponsored the technological development centers in the central areas is an entity that manages the investment in the peripheral areas. The State that sponsored the exploitation of resources in peripheral areas is an entity that oversees market monopolies. The State, in both cases, whether as manager and watchdog, participates in the dynamics of unsustainable development that consists of the imbalance between market growth and the availability of natural resources.

e) The Theory of the Gendarme State explains a new state function that consists of guaranteeing the process of investment, extraction, transformation, distribution and maintenance of hydrological energy resources based on incentives for investment in the sector or, where appropriate, sanctions through ecotaxes. In this sense, taxes are invested in public investment programs, strategies or plans based on energy demand. Taxpayers participate in the energy market through their taxes that the State invests in hydroelectric or thermoelectric plants. However, the benefits of such infrastructure are not returned to taxpayers. Theories that describe and explain the functions of the State in the context of sustainable development have focused on the process of investment, extraction,

transformation, distribution and maintenance of hydrological resources and their energy derivatives. Since the State is the object of study and its functions are the unit of analysis, the inefficiency of demographic, hydrological and energy policies is evident because consumption demand is inversely proportional to the availability of natural resources. However, responsibility for environmental deterioration cannot only be analyzed based on the incompetence of the State; the ineffectiveness of its public policies or the corruption of its officials. Environmental problems also involve the extraction, transformation and distribution of resources based on the needs of progress and, above all, their commercialization.

Product–Market–Consumers Relationship

Hydrological resources and their energy derivatives have been entrusted to the market to redistribute them to potential consumers. Rivers and aquifers have been modified to generate energy and have been exploited to supply water to cities, thereby depriving communities. This process is explained by theories that focus their analysis from industrial societies to end in the analysis of post-industrial societies. In this sense, industrial societies have been identified as a solid modernity due to the offer of social security that it promoted and postindustrial societies have been visualized as a liquid postmodernity due to the access to privileged information that accelerated a disenchantment of modernity and guided a hedonism. postmodern.

a) The Theory of Solid Modernity: Explains the hydrological market that consists of the construction, diversification and expansion of certainty and security from the exploitation of resources. The State was in charge of financing, extraction, transformation, redistribution, use, reuse and redistribution of resources for the cities; their industries, businesses and residences. Modern society massively demanded hydrological products and services for its economic growth. Sanctions also arose for water waste, underground or surface contamination, and delays in payment for the service. In modern cities and tourist areas in Asia, Europe and North America, car washes, spa saunas, water purifiers, swimming pools, jacuzzis and swimming pools appeared that evidenced the status and comfort of modern life. Paradoxically, solid modernity, characterized by its sedentary lifestyle, led to the emergence of diseases related to dehydration of the body and the ingestion of contaminated water. The water used in the central economic zones was transferred to the excluded peripheral zones. Water was distributed based on the economic progress of the central areas and the economic backwardness of the peripheral areas.

b) The Theory of Progressive Economy: Explains the distribution of resources based on a typology of spaces in a hydrological market. That is, since cities are made up of financial centralities and maquiladora peripheries, they promote the creation of hydrological markets that facilitate or impede economic growth.

c) The excluded areas: Denote the spaces of scarcity and unhealthiness around water. These are peripheral neighborhoods in which population density and political manipulation are associated with the contamination of water sources (rivers, wells, cisterns, dairy farms) generating 5,000 million child deaths from gastrointestinal diseases.

d) Vulnerable areas: Denote spaces with irregular supply or restricted supply and, consequently, dosage, care and savings regarding water. These are colonies of housing units managed by political associations. Corruption or negligence associated with labor and economic instability of families or settlers are the main causes of the vulnerable hydrological situation.

e) The included areas: Denote spaces of abundance and waste around water. These are residences, offices, clubs, schools, hotels and restaurants equipped with water containers that guarantee personal hygiene, rest, exercise or recreation. In such areas, water extraction, collection, storage, dosing, heating, evaporation, purification, reuse or recycling technologies guarantee industrial, commercial or personal cleaning or contemplation processes. Underlying all three zones are deliberate, planned and systematic behaviors of wasting or saving water. The determinants of these behaviors have been found in socio-cultural and socio-cognitive processes such as; norms, values, beliefs, perceptions, knowledge and attitudes.

f) The Theory of Reasoned: Action explains the factors that lead people to waste or save water in a hydrological market. The process begins with normative and attitudinal beliefs that influence the attitude toward behavior and individual norms that, in turn, influence behavioral intention, the main predictor of deliberate behavior. In this way, people who believe in the inexhaustibility of water and its exclusive availability for human consumption are prone to favorably evaluate intentions to waste water. In contrast, individuals who believe in water scarcity and its equitable distribution among species tend to evaluate water-saving intentions favorably. However, caring for and wasting water involves systematic skills that seem to be specific determinants for limited situations and specific behaviors.

g) The Theory of Planned Behavior: Explains the specific factors of delimited, reasoned, planned and systematic behavior around the saving or waste of water in a hydrological market. Beliefs, attitudes, norms and intentions are configured with dimensions that can be applied to the understanding of specific situations or events or can be applied to general events. In the case of water use, people who believe, evaluate, value and decide about the global, continental or national distribution of water tend to waste it because they consider that their actions do not have a direct or indirect link or effect on ecosystems. . In contrast, those who believe, evaluate, value and decide about the local distribution of water tend to save the resource because scarcity, shortages and hydrological unhealthiness are

increasingly evident. Therefore, the specificity of the variables allows us to explain the contexts that force people to delimit, reason, plan and systematize their actions.

h) The Human Capital Theory: Explains the beliefs, values, attitudes, knowledge, decisions and skills that allow individuals to insert themselves, subsist or consolidate themselves in the hydrological market. In this sense, the economic growth of the country is a function of the educational growth of its citizens and with it the exploitation of its resources. Such contexts are conceived as markets in which innovative specialists have their future and happiness assured. The distribution of water is understood as a hydrological market in which the resource can be quoted, financed, costed, sanctioned and subsidized based on individual growth expectations. To the extent that the educational level increases, it leads to an increase in needs, in demands for products and services such as hydrology. The value of water rises more to its demand than to its scarcity. This relationship diversifies when individuals accumulate cultural, educational, symbolic, social and economic capitals.

i) The Interactive Field Theory: Explains the relationships between the capitals of individuals, both equal and from different social strata based on their interactive skills, acquired knowledge, tolerated values and shared beliefs about the hydrological market. The interactive field is a conglomerate in which individuals relate through their social, cultural, economic and educational capitals. Capitals redistribute the resources that individuals appropriate from their capitals. The groups determine the collection, storage and consumption of water. Individuals define the variability of water saving, reuse and even recycling. This variation would be influenced by the fields, groups, individuals and capitals that occupy dominant, intermediate and subordinate positions.

j) Structural Field Theory: Explains the asymmetric relationships between fields, groups, individuals and capitals in the hydrological market. The fields are understood as areas of stratification of groups and individuals. Groups are understood as shared resource entities. Individuals are understood as resource-producing entities and capital is understood as development resources. However, the development of capital would only be possible in the fields. In this sense, outside the fields, neither groups, nor individuals nor capital could develop. The structuring fields consist of areas of development of groups and individuals based on their capitals and their relationship with water. Hydrological availability would determine the development of the structuring fields. The variability of the supply, demand, distribution and consumption of water would determine the capabilities, skills, values, beliefs, knowledge and actions of individuals, the groups to which they belong or want to belong and their areas of development. A diversified and permanent supply of water would correspond to the dominant fields (residences, companies, institutions and economic and political organizations), an irregular supply would correspond to the intermediate fields (housing units) and a water shortage corresponds to the subordinate capos (belts of water). misery, irregular and high-risk properties).

k) Theory of Social Coercion: Explains the influence of the hydrological market on individual behavior and the groups of membership or reference. This is a self-fulfilling prophecy for economics and learned helplessness for psychology. That is, social coercion in sociology refers to collective beliefs and actions that leave individuals without initiative. If society considers that water is available only for the exclusive consumption of developed humanity, individuals, regardless of their culture and history, could not disagree and modify the collective tradition. Even the conflict and change that could result would activate the mechanisms of exclusion (discrimination, segregation, sectorization) of dissident cultures, societies, communities, groups and individuals (Malmod, 2011) [31].

l) Theory of Social Anomy: Explains the dissident, disturbing and exclusive processes of the hydrological market. These processes reveal the groups and individuals that unbalance the system. Given the dominant order of the market, individual, group or collective actions arise that would influence the imbalance between supply and demand. Anomie underlies invisibility when consumers boycott the consumption of products and services. In the case of water, the settlers who close avenues and confront the authorities, the consumers who abstain from paying for the service, the citizens who demand the service, the people who protest the increase in rates and the users who request A regular and healthy supply of water are dissident elements for the system because they cause a disturbance in the market and therefore their actions and inactions are considered by the system as anomies. A hydrological collateral market is even configured that would be characterized by its informality.

m) Theory of Informal Citizenship: Explains the emergence of community, neighborhood or social self-organization as a response to the negligence, corruption, inefficiency and incompetence of authorities in the hydrological market. Faced with the exclusion mechanisms of the system, the groups respond with unregulated mechanisms for buying and selling water. In areas regulated by the market, the price of water remains stable and depends on the law of supply and demand. However, in the most excluded areas the price of water reaches its highest and most volatile price. The informal citizen dynamic arises and is consolidated with greater probability when local elections are held. Opposition political parties use the informal sectors to demonstrate against the party in power. They take advantage of the scarcity of water, the irregular and unhealthy supply to manipulate informal citizens by granting water supply in exchange for political proselytism. Informal citizenship varies depending on the expectations of the candidates for

citizen representatives. If the candidates calculate diffuse support, it is likely that they will take advantage of the hydrological problem to get the votes they need and at the same time, discredit the other candidates in the electoral contest. In this sense, two political strategies are configured around the social construction of the environment: the anthropocentric campaign and the ecocentric campaign.

n) Anthropocentric Construction Theory: Explains the effects of political-social campaigns on the redistribution of resources in the hydrological market. Such political campaigns consist of promises of hydrological supply in areas excluded from public service. These are political acts in which messages are disseminated regarding the availability and exclusive use of resources for human consumption. In the hydrological market, water is conceived as a resource for economic growth and a buying and selling product. In this sense, the anthropocentric campaign is used both on the eve of elections and in political programs for economic growth. Political leaders who use these campaigns take advantage of natural disasters and financial crises to announce government intervention as the most viable solution to environmental-economic situations. Ecocentric campaigns underlie anthropocentric campaigns.

o) Environmental Construction Theory: Explains the effects of ecocentric campaigns on the preservation of the hydrological market. Starting in the 1960s, environmental movements began that demonstrated the harmful effects of the market economy, liberal policies, industrial societies, the massification of services and consumerism of diversified products. Later, in the 1970s, anti-armament movements emerged that were more concerned about the preservation of animal and plant species. Conservationist mobilizations proposed the exploitation of resources based on their availability. In the 1980s, environmentalist ideas and actions such as; Boycotts of products and services, consumption dosage and even abstentionism, characterize post-industrial societies. Faced with the uncertainty and insecurity derived from the radioactive explosions at the Chernovil reactor, environmental groups organized to protest massively and systematically in the main cities of the world. The fall of the socialist bloc revealed new forms of nuclear destruction of the environment and with them, new forms of environmental organization. Marches, rallies and demonstrations gave way to realistic demonstrations of the extermination of species when environmental groups moved dead cetaceans to the squares of European cities. These demonstrations were complemented with direct intervention actions to prevent the extermination of whales, seals, bears or birds. The demonstrations leave the streets and enter the portals of government institutions. The blocking of servers and the attack on networks with computer viruses are examples of the hactivism that characterizes the 1990s. Finally, the consolidation of sustainable development extended growth based on the availability of resources to the economic, political, social, cultural, educational, scientific and technological fields without affecting the capabilities of future generations to use said resources. In this sense, political campaigns have used the principles of sustainable development to attract followers. In the hydrological context, votes are exchanged for the redistribution of water. However, sustainable development coexists with another form of hedonistic, improvised and heuristic development: liquid consumption.

p) Theory of Liquid Modernity: Explains the consumerism of products and services in the globalized market. Natural resources are considered ephemeral, mobile, flexible, unpredictable and utopian objects. Water is considered a second-order object in energy consumption for personal hygiene, washing dishes, cleaning the home, fixing the car, watering plants, maintaining cisterns, storing in water tanks, forest reforestation or tourist recreation. The hydrological market, products, services and consumers are determined by exogenous factors that they cannot control, manipulate, predict or understand. To the extent that natural resources are depleted, the hydrological market seeks to market them even as waste that can be reused or recycled. The hydrological market is adjusted to the law of supply and demand because consumers accumulate products and only hope to live as many experiences as possible.

q) Theory of Consumer: Life explains the hedonism and fetishism experienced by individuals when desiring the products and services that will allow them to become an object of desire in the globalized market. Natural resources, when used as complementary objects of neatness, acquire the function of auxiliaries in the beautification of people and their properties. Consumer life is the main cause of the functioning of the hydrological market. To the extent that people seek to become an object of desire and consumption, the hydrological market prevails and even consolidates its products and services. When people enter the dynamics of hedonistic and fetishistic consumerism, they increasingly seek to resemble the products they consume. That is, a person who exceeds the limit of water consumption (500 litrosdaily) seeks the experiences and pleasures associated (comfort, insatiability, instability) with hydrological waste. This type of hedonistic and fetishistic consumer is contrasted with the environmentalist consumer that has emerged from areas scarce in natural, energy and hydrological resources.

r) Theory of the Pressed Society: Explains the local construction of the global market of austerity, reuse and recycling of natural resources. Faced with the uncertainty generated by the globalized market, the consumerism of its members and the scarcity of resources, marginalized areas excluded from the basic services of drinking water, drainage and sewage, build a system of supply, storage, dosing, reuse and water recycling. This market is informal until now because it

arises from the initiative of housewives and merchants who had to devise austere consumption strategies to overcome the limits of the hydrological situation in which they live. The informal hydrological market also consists of the dosage and reuse of the resource. The saving strategies that have been developed in water-excluded areas consist of using the least amount of water and using it again as many times as possible. In the peripheral neighborhoods of cities around the world, people learn to take care of water when bathing, doing daily cleaning, and preparing food. These are societies pressured by the scarcity of natural, energy and hydrological resources that forced them to care for them, dose them and reuse them.

The 15 theories that explain the products-industry-consumers relationship conceive the hydrological market as an area of deregulated consumption, they conceive resources as objects of desire and satisfaction, they conceive individuals as compulsive and obsessive buyers and sellers. The market, resources and individuals are explained based on their buying and selling relationships. In this system of supply and demand, individuals build niches in regulated or deregulated markets that lead them to deliberate or desire, plan or improvise, systematize or renounce the products and services that the market offers, extinguishing them or conserving them for their immediate pleasures or for future generations. There are two systems: one unsustainable and the other sustainable. There are two modernities: one solid and the other liquid. There are two markets: one global and the other local. They are two humanities: one anthropocentric and the other ecocentric. There are two consequences of the redistribution of resources: opulence and subsistence. In this sense, the hydrological problem acquires a media face that substantially influences the media audiences who have revealed or ignored it, maximized or minimized it, depending on their interests.

Spots–Media–Viewers Relationship

The hydrological problem of the Metropolitan Zone of the Valley of Mexico acquired media importance because there is a conflict between the media and the federal, state and municipal governments. The New Electoral Law affected the income of the media in the collection of political advertisements. The political class designed and legislated a law to guarantee the equity of political advertisements, entering into a conflict with the media who have used national and local situations to demonstrate the illegitimacy of the political class. In the case of environmental situations, the media have provided special coverage of natural phenomena and disasters, emphasizing the incompetence, negligence and corruption of federal, state and municipal authorities. For this reason, hydrological situations such as water scarcity, irregular and unhealthy supply have been the most disseminated journalistic stories in the electronic and printed media. Below are seven theories that explain the media impact of hydrological situations on the public.

a) Theory of the Information Age: Explains the impact of the media on public opinion that develops around hydrological situations attributed to the State. The relationship between the media and the State has been one of conflict and cooperation around the manipulation of audiences and publics. The State has used the media to legitimize its ideologies, discredit its adversaries and develop its institutions. The State has even financed the development of technologies to promote the diversification and connectivity of the media. In the case of Mexico, the State favored the monopoly of the media. However, starting with the electoral conflicts of 1988, the media assumed a different function than that of the legitimizing apparatus of the State. This situation, combined with the information technology revolution of the early 1990s, created a media class that contrasts with the nascent political class. In Mexico the information age converged with political neoliberalism. During the 1990s, two classes emerged that seemed to oppose and exclude each other, transforming the perception of reality of millions of Mexicans who based their opinions on the information disseminated in the media and based their actions on stereotypes. media hydrological.

b) Social Categorization Theory: Explains the public's self-comparison in reference to media hydrological stereotypes. By transmitting images about water waste, the media spread models of behavior that the public hopes to adopt or immediately carries out. In the 1960s, the Mexican economic miracle spread advertising messages inviting consumers to waste water. Detergent advertisements proliferated on Mexican television and radio. The cleanliness of clothing was disseminated as a value of national modernity and economic progress. Such values were also taken advantage of by manufacturers and sellers of washing machines, toilets, cars and water tanks. That is, the media stereotype was associated with the nationalist ideology of economic progress and the enjoyment of said progress could be measured in the number of liters of water used. In the 1970s, economic crises were the main obstacle to hydrological waste. A new media stereotype even appeared: the planning consumer. These were political campaigns that promoted family planning and with it, the saving of resources. Messages were spread in which large families were a thing of the past, now small families would be the new value of Mexican culture. The planning of spaces in which housing units were presented as the new national lifestyle was also promoted. In this way, small families that lived in apartments and planned their expenses would be the prototype of Mexican culture. In the 1980s, the economic crises that devastated the national economy forced the dissemination of a new media stereotype: the austere consumer. The public was influenced by messages that promoted the care of water, forests, air and energy. Each state institution financed the production, dissemination and evaluation of the messages. The media joined the austerity campaigns in the consumption of natural resources and care for the environment. The high rates of air pollution prompted ecological campaigns. Even the private initiative carried out environmental awareness promotions. The messages, for the

first time, were diversified to all social strata. In the 1990s, post-electoral conflicts and new neoliberal economic policies influenced a new stereotype: political clienteles. Precisely, the increase in population, unemployment, the economic crisis and citizen mobilizations gave rise to the poverty belts that were absorbed by political parties, turning them into political clienteles. The invasion of property, the confrontations with the authorities and the political mobilizations were transmitted in the media as social problems inherent to left-wing political parties. Finally, in the current decade, the media has spread sustainable media stereotypes. These are citizen mobilizations in favor of the preservation of forests, animal rights, care of water and energy. Companies use environmental situations to promote their green products rather than spreading environmental awareness. The State announces messages in which citizens are invited to pay their taxes in order to conserve resources and the consumption opportunity of future generations. The values of economic growth, social progress and individual advancement gave way to the values of individual self-care based on ecological conservation, responsible consumption and environmental education of future generations. In each decade, individuals constructed images of themselves in reference to the stereotypes that the State, and later the market, disseminated through the media. The messages that were disseminated directly and significantly affected the public. The discrepancy between the messages broadcast and the attitudes towards the stereotypes produced consumer decisions that were often consonant with the stereotypes.

c) Cognitive Dissonance Theory: Explains the differences between media stereotypes and contemporary audiences in their attempt to follow or confront them (Estramiana, 2005). The construction of media stereotypes involved the diversification of advertising and marketing strategies that initially sought to influence the public that was considered homogeneous. With the development of information and communication technologies, excessive consumption campaigns gave way to responsible consumption campaigns. In their desire to increase their sales, governments, companies and the media allowed citizen participation in media spaces. The homogeneous and passive public of the decade of the Mexican miracle and Western world prosperity was transformed into a heterogeneous and active public in the construction of its preferences and consumption of products and services. The production, transmission, reception and appropriation of sustainable development messages without media stereotypes divided public opinion: mediatized consumers, reactionary consumers and assonant consumers.

d) Mediatized consumers: They are individuals or groups that make their purchasing and selling decisions based on the supply and demand of products and services disseminated in the media. News surrounding water scarcity or abundance affects real estate buying and selling decisions among the public. These are publics with a need for information and delays in their decisions.

e) Assonant consumers: They are individuals or groups that make their decisions based on moderate information about the availability of resources and their future situation. This type of audience tends to look for sources of information that spread messages that are moderate in tone, quantity and content. These types of messages guide the individual towards inaction. Publics build a relatively stable world in which resources are sufficiently available for their daily activities.

f) Reactionary consumers: They are individuals or groups that make their consumption decisions inversely to the supply and demand information transmitted in the media. Messages about the local hydrological situation have an inverse and significant effect on the public that receives the information. These are settlers with a very high or very low educational level who use mediated information to counteract its effect on the neighborhood. A message regarding the cutoff of the water supply encourages citizen organization to demand the restoration of the supply. Furthermore, information on cuts, suspension or reduction in water supply determines the demand for the resource; demonstrations, rallies, blockades or announcements that demand supply or its restoration to the authorities. These consumers will be the ones who will build representations derived from their perception of the availability of resources and the legitimacy of their authorities based on mediated information.

g) Social Representation Theory: Explains the perceptions and beliefs around hydrological availability based on government decisions and actions that are disseminated in the media. Social representations consist more of peripheral perception than of central beliefs about the problem and its solution actions.

h) Peripheral perception: They are expectations of risk or expectations of utility regarding the scarcity, irregular and unhealthy supply of water that is disseminated in the media. The construction of water scarcity and unhealthiness leads to the construction of an austere consumer who worries, cares and makes his reference group aware of the importance of water and the incompetence, negligence or corruption of the authorities. In contrast, the construction of a regular water supply implies the construction of a wasteful consumer of water and the demand for sanctions or increased rates depending on the waste.

i) Core beliefs: They are evaluations regarding hydrological problems and government action that are disseminated in the media. News about water scarcity or abundance is compared based on the credibility of the source (chain, newscast, host, reporter or interviewee), the number of advertisements (number of spots in a perceived period of time), the frequencies of the messages (number of spots in a perceived schedule), the

arguments of the news (causes and effects of the problem), the style of the source (economic, political, social, historical, scientific, educational) and the receiver (sex, age, economic status, educational level, work activity, marital status). In this way, a message is only one link in the chain of beliefs that make up a social representation. Social representation refers to the construction of conflicts and changes brought about by the relationship between the media and the public. The dissemination of campaigns often results in discrepancies that result in changes in the image of networks, changes in the structure of newscasts, changes in hosts, changes in reporters and changes in the reception of messages, all of them depending on the group being addressed. that belong to the public (García, Carreón, Mecalco, Hernández, Bautista and Méndez, 2014) [32].

j) Social Influence Theory: Explains group membership decisions around hydrological availability and government action disseminated in the media. The media influenced the masses (homogeneous and discreet consumers) who transformed into audiences (segmented and frenetic consumers) until they became spectators (diversified and oligophrenic consumers). The media produced and disseminated messages to influence personal decisions without considering the influence of the groups to which individuals belong or want to belong. News can influence personal decisions directly or indirectly. Through reference groups and membership groups, people make decisions that they will or will not carry out. Messages about hydrological availability influence individual savings or waste but also affect the group norms that guide individuals. That is, people can save or waste water based on group values around the hydrological resource. The acceptance of such group norms implies their legitimacy that can be derived from a rational discourse (Orozco, Montoya and Montilla, 2010) [33].

k) Theory of Discursive Action: Explains the construction of a hydrological information system and a system of democratic dialogue based on individual opinions and citizen speeches that are issued based on the environmental situation. It is proposed that the media would stop influencing the opinions, decisions and actions of viewers because citizens, when discussing environmental situations, would demand channels of dialogue that the media do not and cannot offer (Moreno, 2013) [34].

In summary, six theories have been reviewed that explain the water-media-spectator relationship from its homogeneity to its heterogeneity. That is to say, media influence became a dialogue between viewers who can do without the media. The media influenced the construction of assessments, perceptions, beliefs, knowledge, skills, decisions and individual, group, neighborhood, community, social and cultural actions, guided the transformation of nature into the environment, influenced the transformation of masses into spectators, paved the way for the construction of a participatory citizenship in the solution of environmental situations.

Relationship of Situations–Participations

Environmental situations are explained from five theories that propose community participation as the main response of urban neighborhoods and rural municipalities to water contamination and unhealthiness associated with corruption, incompetence or negligence of the authorities. The study of communities in relation to epidemics consists of revealing the historically recurrent actions of groups excluded from sustainable development (Marqués, Salavarría, Eastmond, Ayala, Arteaga, Marquéz, Valladares and Manzanero, 2011) [35].

a) Theory of Social Post materialism: Explains the valuations around water that are historically and systematically constructed by the colonies, towns, neighborhoods or communities that benefited from hydrological extraction, purification, distribution and consumption. The benefited areas have achieved an economic status, political democratization, and social order sufficient to worry about environmental deterioration. The environmental awareness that develops in the benefited areas reveals alternatives for sustained development; moderate water consumption consists of its dosage, equitable distribution consists of the financing of river capture technologies, optimization of the resource consists of its saving, reuse and recycling, regular supply consists of federal investment, increased rates, the proliferation of incentives and the increase of sanctions. Post-materialist environmental consciousness is a response to the lost security that the State and the market could not solve. Now initiatives, networks and citizen organizations try to counteract the insecurity and uncertainty that permeates a hydrological crisis (Rosas, García and Cruz, 2011) [36].

b) Perceived Risk Theory: Explains the perceptions around natural disasters or industrial accidents as consequences of economic progress, state deregulation, scientific advance and technological innovation. That is, to the extent that industrial societies consolidated, risks such as; river overflows, nuclear explosions, flooding of communities, electrical blackouts, extinction of biodiversity, proliferation of pests and gastrointestinal diseases. In this sense, industrialization and technologization increased the insecurity of societies through bioterrorism and GMOs. The abstention and boycott of these products by organic consumers gave way to the marketing of organic products. Coffee, soybeans, corn, wheat, rice and beans were massively cultivated and genetically modified. The market was flooded with Frankenstein products and in response to this situation, environmental organizations allied themselves with the communities to defend the local ways of planting and harvesting agricultural organisms. They joined together to fight transnational corporations and managed to raise awareness among consumers about buying organic products. However, the low costs and prices of genetically modified products led to the acceptance of the products in deregulated markets such

as those of Latin America. Furthermore, potential consumers ignored the warnings of environmentalists and thereby fostered a symbolic conflict that led organic farmers and consumers to seek the social recognition and collective demand necessary to escape the stigmatization attributed to them (Nacif , Martinet and Espinosa, 2011) [37].

c) Theory of Social Discrimination: Explains the asymmetric relationships (hydrological exclusion; disengagement, devaluation, stigmatization and submission) between users of the drinking water , drainage and sewage service. The supply of water in cities and countryside has been the main cause of conflict between users and is expected to be the main cause of war between nations in the next twenty years. Asymmetric relationships reveal symbolic conflicts between users. When groups that have been favored by the inequitable distribution of water see their privileges threatened, they tend to discriminate against groups disadvantaged by water service. Ignorance of the rights of irregular human settlements leads to the emergence of inter-ethnic conflicts among farmers, inter-neighborhood conflicts among city dwellers, and inter-personal conflicts among neighbors. Such conflicts tend to redistribute water, opening a gap between those who have benefited from it and those who have suffered from its scarcity. Stigmatization appears when water is used for rituals or maintenance other than basic needs. When privileged groups use water to wash their properties or for recreation, excluded groups tend to label the privileged groups as "wasteful." In contrast, when water is used for rituals or recreation for excluded groups, privileged groups tend to label the excluded groups as "ignorant." Even within privileged and excluded groups, there may be ruptures in their cohesion. Within privileged groups, environmentalist individuals in favor of saving, reuse and/or recycling may coexist, as opposed to wasteful individuals. Within the excluded groups, austere individuals may coexist who take care of water by considering it a community element versus individuals who monopolize the resource. In each of the groups, subgroups and individuals, senses of identity are built that lead them to join groups, form alliances or at least idealize their union (Lucca, 2010) [38].

d) Social Belonging Theory: Explains the senses of identity that link communities to confront hydrological unhealthiness. The sectors excluded from the drinking water, drainage and sewage service face the unhealthiness that derives from the contamination and consumption of water. In the peripheral neighborhoods of cities and in emigrant municipalities, the water supply is restricted due to insufficient or inefficient infrastructure. Communities must transport contaminated water to their homes and consume it without sanitary measures. Diseases, epidemics and pandemics develop in neighborhoods and municipalities peripheral to economic progress. Given this, the communities had to develop ties of belonging and identity that led them to emigrate to return with resources that allowed them to organize the supply, regular and healthy supply of water [39]. Emigrant communities developed feelings of roots towards their neighborhoods or municipalities that influence their decisions to return to their place of origin. Even migrant communities have financed hydrological infrastructure projects to guarantee not only the supply of water but also electricity. This sense of belonging has not developed in neighborhoods privileged by the drinking water service [40]. Given the irregular supply of the resource, residents have resorted to influence peddling to solve the shortage. While solidarity underlies solidarity to confront endemic situations in emigrant communities, mechanisms of cooptation and corruption of the authorities emerge in privileged colonies. This shows the diversity of citizen participation [41].

e) Multicultural Citizenship Theory: Explains the diversified participation around hydrological problems. The type of participation is linked to the type of problem. To the extent that the problem increases or decreases, it leads to an increase in participation. Indeed, multicultural societies not only diversify their cultures, values, traditions and norms, they also diversify their modes of participation depending on global, regional, local, municipal or neighborhood situations [42].

f) Poor infrastructure and political participation: The demonstrations in favor and/or against authorities and candidates for district representatives have had their origin in the collective imagination of corruption, negligence and incompetence on the part of the authority in power. Candidates for representatives take advantage of the hydrological problem to build political situations and campaigns.

g) Water scarcity and community participation: The different types of droughts have led communities to develop mechanisms of solidarity rather than competition to obtain resources. The communities have activated modes of participation that vary depending on the degree of hydrological availability. Community self-organization has been the main response to natural or privatizing scarcity. The distribution of supply and the increase or decrease of quotas based on rainwater collection determines the future of community agriculture [44,45].

h) Irregular supply and neighborhood participation: In cities, the supply of water is increasingly restricted, either due to its scarcity or due to hydrological policies that constantly increase rates. The organization of neighbors to build wells or supply themselves with pipes constitute the main indicators of response to the problem [46].

i) Unhealthiness and citizen participation: Natural disasters, epidemics and pandemics are associated with the citizen response that consists of economic barter, political mobilization, social solidarity and emotional support. Citizens play a beneficent and protectionist role towards children and the elderly who are more vulnerable to these situations [47].

The five theories that explain the relationship between situations and participation conceptualize situations as the main,

direct, and significant causes of mobilizations. They propose an evolution of hydrological problems that determined the development of organized actions [48].

Discussion

39 theories have been presented to explain environmental situations based on their relationships with culture, society, the State, the community, the neighborhood, the family and the individual. In this sense, environmental situations are conceptually derived from entities from which they can be observed, compared, analyzed and synthesized. When humanity considered that water and it were part of nature, symbols emerged that transformed it into cultures. When humanity classified water as resources, it unveiled the State that transformed it into taxpayers. When humanity thought that water was a product, it created the market that transformed it into consumers. When humanity reduced environmental situations to spots, it exalted the media that transformed it into spectators and when humanity understood the diversity of environmental situations, it self-organized to preserve its future generations. Socio-psychological theories of water sustainability explain the existing relationships between availability and consumption through socio-cognitive processes that support the environmental media hypothesis around which the amount of water and its use are determined by ideas. preliminaries that, when processed in situations of abundance or scarcity, will inhibit or facilitate the waste or saving of water regardless of its value, cost, price, rate, quotation or any other parameter that implies restoring the balance in availability and consumption. However, socio-psychological theories warn that it is necessary to reconceptualize the problem and establish cost parameters based on human needs and expectations regardless of their capabilities or assets. In this sense, socio-psychological theories propose that the measurement of water consumption be carried out, no longer based on its current or future availability, but rather based on the beliefs, perceptions, attitudes, knowledge, values or intentions of water use of individuals inserted in a supply system. That is, socio-psychological theories only explain the sustainability of a formal supply market, but when referring to an informal market, the theories encounter barriers that prevent them from explaining solidarity in situations of scarcity or hoarding in situations of abundance. Therefore, socio-psychological theories will have to explain the discrepancies that inhibit the sustainable development of humanity in relation to the availability of water. In this sense, socio-psychological theories must be complemented with other theories that explain affectivity rather than rationality around the use of water, the groups to which the user belongs, the quotation systems to which the user is affiliated. or the governance processes in which citizens participate.

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