



## **Process of public agenda formation on the water problem in El Salvador: actors, arguments and solution alternatives**

### ***Processo de formação de agenda pública do problema da água no El Salvador: atores, argumentos e alternativas de solução***

### ***Proceso de formación de agenda pública del problema del agua en El Salvador: actores, argumentos y alternativas de solución***

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Article received on March 4, 2021, final version accepted on December 26, 2022, and published on August 24, 2023.

**ABSTRACT:** The lack of access to drinking water, the pollution of rivers and the conflicts of interest make El Salvador one of the most vulnerable countries in Latin America in relation to the water problem. This situation is aggravated by the fact that there is no law in the country that establishes this resource as a right and, consequently, its effective protection. This research aims to analyze the process of public agenda formation and the construction of public policy alternatives to the water problem in El Salvador. The methodology used to prepare the work is qualitative, are analyzed official documents and semi-structured interviews are carried out with the public and private actors involved in this problem. Through the analysis of the interviews, it was possible to establish that the actors argue three types of causes of the water problem in El Salvador, lack of public management, environmental issues and economic interests. On the other hand, the actors mention three types of possible solutions related to the establishment of a regulatory framework on water, effective environmental policies, as well as an investment policy in infrastructure. In addition, through the analysis of official documents it was perceived that all the proposals aim, on the one hand, to regulate water management and, even, to establish a regulatory framework and, on the other, to establish the principles on the consideration of water as a human right and essential access.

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*Keywords:* public agenda formation process; water problem; El Salvador.

**RESUMO:** A falta de acesso à água potável, a poluição dos rios e os conflitos de interesse fazem de El Salvador um dos países mais vulneráveis da América Latina, em relação ao problema da água. Essa situação é agravada pelo fato de não existir uma lei no país que estabeleça esse recurso como Direito e, conseqüentemente, sua proteção efetiva. Esta pesquisa tem como objetivo analisar o processo de formação de agenda pública e de construção de alternativas de políticas públicas para o problema da água em El Salvador. A metodologia utilizada para a elaboração do trabalho é qualitativa, por meio de pesquisa e análise de documentos oficiais e entrevistas semiestruturadas com atores públicos e privados envolvidos no problema. Por meio da análise das entrevistas, foi possível constatar que os atores argumentam três tipos de causas do problema da água em El Salvador: a falta de gestão pública, as questões ambientais e os interesses econômicos. Por outro lado, os atores mencionam três tipos de soluções possíveis relacionadas com o estabelecimento de um marco regulatório sobre a água, políticas ambientais eficazes, bem como uma política de investimento em infraestrutura. Além disso, através da análise de documentos oficiais percebeu-se que todas as propostas visam, por um lado, regular a gestão da água e, ainda, estabelecer um marco regulatório e, por outro, estabelecer os princípios sobre a consideração de a água como direito humano e acesso essencial.

*Palavras-chave:* processo de formação de agenda pública; problema da água; El Salvador.

**RESUMEN:** La falta de acceso a agua potable, la contaminación de los ríos y los conflictos de intereses hacen de El Salvador, uno de los países de América Latina más vulnerables en relación al problema del agua. Esta situación se agrava debido a que no existe en el cuerpo normativo del país una ley que establezca este recurso como un Derecho y, en consecuencia, su efectiva tutela. Esta investigación tiene como objetivo analizar el proceso de formación de agenda pública y la construcción de alternativas de políticas públicas al problema del agua en El Salvador. La metodología utilizada para la elaboración del trabajo es cualitativa, para eso se analizan documentos oficiales y se realizan de entrevistas semiestruturadas a los actores públicos y privados involucrados en dicho problema. A través del análisis de las entrevistas fue posible establecer que los actores argumentan tres tipos de causales del problema del agua en el Salvador, falta de gestión pública, cuestiones sobre medio ambiente e intereses económicos. Por otro lado, los actores mencionan tres tipos de posibles soluciones relacionados con el establecimiento de un marco regulatorio sobre el agua, políticas de medio ambiente efectivas, así como, una política de inversión en infraestructura. Además, por medio del análisis de documentos oficiales se percibió que todas las propuestas apuntan, por un lado, regular la gestión hídrica e, inclusive, establecer un marco regulatorio y, por otro, establecer los principios sobre la consideración del agua como un derecho humano y de acceso esencial.

*Palabras clave:* proceso de formación de agenda pública; problema del agua; El Salvador.

## **1. Introduction**

The water problem in El Salvador is very complex, as the obstacles to be overcome are of different characteristics. One is of technical legal application; no legal body in the country guides nature conservation and resource protection, and

there are no water, soil, subsoil, or irrigation system management policies. In addition, there are alarming rates of poverty and unemployment that do not allow the entire population access to basic services. Nevertheless, according to data from the World Bank (2020), El Salvador presented a slight improvement concerning poverty and extreme poverty for

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the period from 2007 to 2019, dropping from 39% to 22.3% measured by the US\$5.5 daily line and from 13% to 1.5% measured by the US\$1.9 daily line, respectively. Furthermore, until March 2020, the government of President Nayib Bukele allocated 15% of the GDP for the campaign against Covid-19, achieving that 66% of the Salvadoran population was fully vaccinated. Regarding unemployment, the Statistics and Census Directorate of the Ministry of Economy determined 2018 a national rate of 10%. In addition, it estimated an Economically Active Population of 2,960,788 people, of which 59.3% are men and 40.7% are women.

In the country's interior, access to drinking water is even more complex since most of the rural population does not have a water distribution network to their homes, or if they do, the service is rationed. There are also public taps in the urban center of each town where people can get water; however, the population of the periphery has to walk long distances to get water, walking up to five or more kilometers to the nearest river, which means that they must leave their homes as early as possible to get as much water as possible to meet their needs.

Based on the above, the problem in this paper refers to the relationship between a social problem and its incorporation into the public agenda. (Lindblom, 1981; Muller, 1998; Fuks, 2000; Lahera, 2002). Similarly, the link between the public problem and its solution alternatives (Subirats, 1992; 2008; Villanueva, 2012; Secchi, 2016). The general objective of this study is to analyze the process of public agenda formation and the construction of public policy alternatives to the water problem in El Salvador. Specifically, the research orientation refers to the following three objectives: Analyze

the extent to which public problems are included in public agendas. To identify the factors that influence the formation of the public agenda, interviews were conducted with key actors to investigate their perception of the water problem in El Salvador. Finally, identify and analyze the causal model that establishes the relationship between public problems and solutions based on technical studies.

The initial proposition of this paper is that the process of public agenda formation and the formulation of public policy alternatives regarding the water problem in El Salvador reflect the political interests of economic power groups. Therefore, the two processes mentioned earlier have had as their main objective the satisfaction of these private interests and, secondarily, social improvement (Valencia, 2022). The development of the research allowed us to identify that the factors that influence the formation of the agenda of the water problem in El Salvador are divided into three categories: the first one is related to poor public management, which implies that the actions of State officials are inadequate; The second category refers to economic interests, that is, the water problem cannot be solved because its solution is subordinated to economic power groups, and the third category refers to environmental aspects, the generation of public policies that allow the protection of natural resources and the recovery of already compromised ecosystems. In this sense, the researchers determined that the lack of a solution to the problem does not respond directly to the intervention of economic power groups but rather encompasses technical aspects of the legal and environmental application. The methodology is qualitative (Flick, 2009); nine interviews were conducted<sup>1</sup> with a semi-structured guide to

<sup>1</sup> Interviews were conducted during 2019 and 2020.

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public and private actors who discuss water issues in the country. In addition, an analysis of official documents on the matter was carried out.

This study is divided into six sections in addition to this introduction. The second part presents the concepts of public agenda formation and formulation of alternative solutions to the public problem. The third part develops the methodology of the study. The research results are presented and discussed in the fourth, fifth, and sixth parts. Finally, the last section discusses the final considerations.

## ***2. Formulation of a public agenda and alternatives public-problem solutions.***

The public agenda-setting process is the first stage of the so-called "public policy cycle" model. This model consists of a sequential order that allows identifying the stages that make up the policy process; thus, the stages of the cycle are identified in a simplified way<sup>2</sup> by the formation of the political agenda, generation of a program to solve the problem, program implementation, evaluation and, in some cases program closure (Subirats *et al.*, 2012; Howlett *et al.*, 2013; Secchi, 2015). Among the criticisms of the model, Muller (1998) points to analytical issues related to the chronological development of the stages of public policy since these do not necessarily follow an established order.

The public agenda formation stage refers to how problems arise in a given society and, in this sense, how certain problems are inserted into the governmental agenda (Capella, 1995). This agenda

includes the topics governments pay attention to, varying in issues according to state areas of priority (Kingdon, 2014). The first analytical models for studying the public agenda formation process analyzed the influence of economic factors as determinants of government agendas. Then, more complex analytical studies began to include multivariate models in defining agendas (Howlett *et al.*, 2013). The Multiple Flow Model (John Kingdon) is an example of a multivariate model. John Kingdon wrote the 1980s book *Agendas, Alternatives, and Public Policies*. The author formulated a model to explain the process of public agenda formation based on his research on health and transportation policies in the U.S. federal government. The Multiple Flows Model aims to answer the following question: why do certain problems become important to governments? Kingdon (2014) established his theory from the following relationship: problem-solutions-policy. This relationship comprises three flows: problems, public policies, and politicians.

The first flow refers to the perception and definition of problems, which includes the selection process made by policymakers based on how they understand the problem. At this point, Kingdon believes that other elements enter into the equation, which he calls indicators: crises, events, symbols, media coverage, and through which public policymakers identify the seriousness of the problem. Ultimately, governments frequently monitor socioeconomic indicators of domestic activities (health indicators, social programs, income, labor, etc.).

The second stream consists of solutions available to mitigate the problem. This stage can be

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<sup>2</sup> The stages of the model generally include 4 processes, from the inclusion of the problem in the public agenda, the formulation of the policy, its implementation, monitoring and evaluation and, finally, its continuity or extinction. However, several authors propose dismembered stages, see Procopiuck (2013).

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composed of a series of social or academic actors whose activity and experience allow the generation of practical solutions. Kingdon called it a primitive broth of solutions, making a comparison with the biological selection process, in which all possible solutions that do not apply to the problem are discarded and so on until the closest to the reality of the problem and its possible solution is reached (Capella, 1995).

The third flow refers to the political arena and is part of the public agenda formation process. Therefore, the interpretation and way of conceiving solutions are influenced by the interests of the power groups, so those solutions in which these groups' economic and political interests are considered will be relevant.

For example, problems are defined through the personal interpretations of those actors who seek to define a problem. Incentives or interests may develop solutions that may differ from the most appropriate or the one that generates an effective response to the problem. Political dynamics are influenced by political negotiations involving various actors with economic and political interests.

Finally, it should be noted that this flow dynamic incorporates various factors and actors, such as media coverage of the problem, the incorporation of an important political actor, changes in government, and environmental tragedies, among others. For example, John Kingdon (2014) argues that these factors and actors can lead to the entry of new problems into government agendas, which the author calls a window of opportunity. In other words, opening a window of opportunity would signal the permeability of governments to the entry of new issues on the agenda.

Once the problem is placed on the governmental agenda, the next stage refers to formulating alternative solutions to the problem. Howlett *et al.* (2013, p. 123) refers to "The process of creating options on what to do about a public problem", and extensively, it can be defined as "The formalization of the options to be implemented for the solution of the problem recognized as public in the Official Agenda" (Howlett *et al.*, 2013, p. 123).

The public policy formulation phase elaborates on the administration's methods, programs, alternatives, and actions to achieve the established objectives. This construction must estimate the human and financial resources to be used. The variety of responses to public problems is quite wide and is related to each country's cultural, political, and social traditions. However, theoretical efforts to classify public actions yielded some models. Among these, it is worth mentioning the "NATO model" developed by Hood (1983), which established four categories of instruments: nodal, authority, treasury, and organization.

The "nodal" category allows governments to disseminate reports on society's activities through surveys, statistics, and special studies, with the expectation that individuals will change their behavior through data of a general nature so that the population can make sound, concrete and safe decisions. The second category, "authority", refers to the ability of governments to prohibit, recommend and permit actions through recognized procedures, such as social and economic regulations, licenses, and laws. Third, treasury-based instruments involve financial transfers by governments to companies, individuals, or organizations, such as taxes, tax incentives, and loans. Finally, the "organization" category refers to the government's ability to carry out its activities by

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hiring and performing civil servants and injecting financial resources into its activities. Through this tool, the government can generate public enterprises, which allow it to generate works, goods, and services (Howlett *et al.*, 2013).

### 3. Methodology

The research uses the qualitative perspective, understood as "[...] an inquiry that seeks answers to questions that refer to how social phenomena and collective experience came about along with their possible meanings" (Denzin & Lincoln, 2011, p. 7). It aims to analyze and observe phenomena and facts, interpret them according to their characteristics and nature, and relate them to other social facts to understand them better.

Field research was conducted in El Salvador to collect preliminary information on the country's water problem, the public agenda formation process, and formulation alternatives to the problem<sup>3</sup>. This research consisted of visits to public and private actors who directly relate to the country's water problem. The data was collected through semi-structured interviews, "[...] a research technique for collecting perspectives and beliefs about certain phenomena". (Denzin & Lincoln, 2011, p. 643). Nine interviews were conducted; the nine interviewees were chosen because they are part of the stakeholders involved in the water problem, i.e., they are considered key stakeholders/specialists who have some direct relationship with the problem, either because they participate in the drafting of legislation, have suffered the consequences of the problem or are technical experts on the subject.

Therefore, among the interviewees, some people belong to civil organizations that fight for the protection and conservation of the environment and the fight for Human Rights, people from academia and government personnel, specifically from the institutions directly involved with the subject. Thus, we have the opinion of deputies who belong to the Environmental Commission of the Legislative Assembly, technicians of the National Administration of Aqueducts and Sewers (ANDA), which is the national institution in charge of capturing and distributing water and the main distributor, and people affected by the water problem in the country were also interviewed. Table 1 presents the profile of the interviewees.

On the other hand, the empirical part was also oriented toward documentary research. In particular, it refers to the consultation of documents, news from printed and digital media, photographs, recordings, reports, and other primary source documents. The information obtained was analyzed after gathering documentary and verbal information and through interviews with public and private stakeholders. For this purpose, we resorted to the technique of content analysis, which refers to the process of classifying or codifying textual information. This research technique aims at the objective and systematic description of the essential content of a text. According to Bardin (2011), this analysis process is carried out through the objective decomposition of the information, i.e., expressions with common features are grouped to generate categories, which must respect characteristics such as being homogeneous, objective, relevant, and exclusive.

<sup>3</sup> The field research was conducted during the period from January to May 2019, and from October 2019 to February 2020.

TABLE 1 - Profile of the public and private actors interviewed who participated in constructing the public agenda on the water problem in El Salvador; each actor's profile was constructed based on the data obtained in the semi-structured interviews.

Identification	Occupation	Time spent working in the organization
A	Bachelor in Mechanical Engineering, Master in Mechanical Engineering, Master in Energy, and Ph.D. in Energy, all in the United States, Mechanical Engineer in El Salvador.	38 years working at the Salvadoran Center for Appropriate Technology.
B	Housewife, active demonstrator in the closure of streets due to water shortage in Colonia San Luis, Municipality of San Marcos, department of San Salvador.	26 years old, 1 year in protest activities for the water problem in his community.
C	Civil Engineer	10 years as Advisor to the Minister of Environment and Natural Resources office.
D	Doctor in Medicine, Congresswoman for the Farabundo Martí National Liberation Front in the Environment and Climate Change Committee.	Twenty years of active participation in social movements, five years as a member of the FMLN party, and one year and six months as a congresswoman.
E	Master in Health Administration.	46 years working with international organizations on development, 15 years working on mining and nature protection and water issues.
F	She is a lawyer with a degree in legal sciences, with diplomas and postgraduate studies in politics. President of the Women's Parliamentary Group. Vice President of the Women's Democrat Union.	7 years of working in the legislature with the Alianza Republicana Nacionalista party.
G	Civil Engineer	31 years of service in ANDA and 1 year as Technical Director.
H	Chemical Engineer and Master in Public Health	18 years as Technical Coordinator for the paracentral and central regions of the country and the metropolitan area.
I	Agronomist Engineer, Master in Agricultural Ecology	15 years as a consultant in national water management, project design, and planning of water policy instruments, university professor, 1 year in conservation and planning in the recovery of the Mesoamerican reef, ecosystem conservation, and water strategies.

SOURCE: Authors (2020)<sup>4</sup>.

<sup>4</sup> It is worth mentioning that the process of contacting these actors, which was in fact a complex task and extended over the course of this research. The public stakeholders were contacted at their public offices, this process was carried out through formal requests for an audience and later a telephone follow-up until the appointment was made.

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#### 4. Analysis of results

This segment of the research analyzes each interviewee's interpretation of the meaning and scope of the water problem and its possible solutions. It should be noted that each interview was transcribed in text format for the content analysis. In this way, the texts were classified by units of categories and subcategories related to the main object of the research and, at the same time, strengthened through the incorporation of the greatest amount of information and the construction of direct relations with the object of study. For this purpose, two major categories were constructed: "problem identification" and "problem solutions", with three subcategories each.

In the "problem identification" category, the following subcategories were constructed: "public management", "economic interest", and "environment".

The first subcategory was called "public management" and refers to performing tasks and functions that allow adequate administrative and political support to solve the problem. The interviewees agreed that the water problem in El Salvador is due to the lack of political will and gave two aspects; the first one is the image offered by the deputies of the Legislative Assembly since they did not reach a consensus that would allow the approval of a general water law. The second aspect refers to the poor administrative management of the National Administration of Aqueducts and Sewers (ANDA) as the main institution in charge of the country's collection, sanitation, and water distribution, as verified in the response of respondents A and D.

For (A), the problem has existed since 1970, and year after year, it worsens due to the lack of political will and the long delays given to each bill that reaches the Salvadoran congress. Therefore he believes that:

*...about three legislatures ago (in 2012), the Human Right to water and food was recognized, and all parties accepted it. It was accepted in the Legislative Assembly, but as our law requires that it has to be approved by one legislature and ratified by the next one, then when it was ratified in the next legislature, the right-wing parties led by ARENA opposed it and before they had agreed and then they opposed it...*

(D) determines that the politicization of the issue does not help to generate progress in the debate to approve a general water law:

*... because when we talk about the integrated water law, I think that is one of the big differences that is important to know; when we talk about the general water law, we talk about the protection of all the water that comes to this country, all the water, remember that 70% of the water that comes to El Salvador from the Lempa river basin is where we obtain the largest amount of water. But, still, the reality is that the difference is that when we talk about the general water law, the right-wing talks about the ANDA law, about the law of water that reaches the domiciliary to the domestic. But, still, we as a parliamentary group cannot be irresponsible in this context because water is a whole...*

The next subcategory was defined as "environment," in which the problem is interpreted as the result of contamination of groundwater and, especially, surface water due to the discharge of organic material and untreated wastewater from industry and households, the felling of forests and the lack

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of effective environmental legislation to care for and protect them. As verified in the answers of H,

Thus (H) estimates that:

*... Society has a fundamental role in this whole water problem; what there should be is an awareness of resource protection from home, that is, there should not be a waste of liquid, and everyone should participate in events to protect natural resources if it is true that there is still no crisis, it does not mean that resources are inexhaustible, so we all should participate in the protection and conservation of the same...*

Finally, about the subcategory of "economic interests," the stakeholders interviewed determined that water management under current conditions, i.e., without regulating its use and prioritizing it for human consumption, as well as its care and the stabilization of reasonable and technical fees, represents a multi-million dollar business, which awakens the interests of bottling companies and carbonated beverage producers. Furthermore, those interviewed agreed that such companies might lobby their commercial interests through some political parties and, at some point, become their sponsors. Under these conditions, having a general water law that favors the collective interest becomes even more complicated.

Therefore (A) expressed the following:

*...water is a very interesting business for corporations that can be extracted; just look at any corner with a traffic light that turns red. They come to sell you a bottle of water for \$0.50.50, so think about how much you can get in those deep wells; they are immense amounts of water that is more profitable than finding oil finding water, so, of course, the big corporations do not want to take away their business, they do not want to have water... So that is what happens; the big*

*corporations are the ones that keep those parties...*

The problem continues to be perceived through the economic interest of the large corporations that wish to continue exploiting the water resource, an interest that accompanies the decisions of the political class and whose participation has a weight many times greater than that of the community (I) explained the following: *... these decisions of the legislators, ... are still accompanied by these interests of large corporations, yes of very legitimate economic interests...*

The construction of the problems arises from the social dynamics and the interpretation each person gives to this unfavorable situation. Consequently, their possible solutions will have the same route of elaboration. In other words, the alternative solutions to the problem will depend on the interpretation given to it by each actor; ultimately, this construction of the problem will define the solutions to it (Sabatier, 2010).

A main category called "solution to the problem" was generated for formulating alternative solutions since the aim is to generate immediate solutions that will make it possible to imbue the recovery and distribution of water resources with sustainability. Thus, three subcategories were constructed: "regulatory framework", "environmental public policies" and "public infrastructure policies".

The first subcategory of "Regulatory Framework" refers to the legislation necessary to regulate water management, in which the State's obligations will be determined, from the distribution of water for human consumption as the main priority to the approval of exploitation permits. Each interviewee explained the need to have a General Water Law, as they determined that it would esta-

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blish the rules of the game, which should be clear and, above all, should define a regulatory entity that would allow water care and, at the same time allow consumption for domestic and commercial activities, giving priority to human consumption, on this point of establishing a general law all interviewees agreed and expressed concern about the delay in its approval, as explained by the interviewee (A),

*we propose a vice-ministry of water and a comptroller body; what will the comptroller body be for? We can all be there, from God to the devil; even the private company can be there watching, and if the private company realizes that there is a mismanagement of funds that it denounces, that would be very good, we can all be there, but the Vice Ministry is the guarantee that this does not go outside the public management, that is what we are looking for.*

For interviewee (F), the need for a law is imperative; there are obstacles to overcome and to achieve a consensus in the Legislative Assembly to be able to enjoy the approval of a law that regulates water management in the country, in the account of (F), it can be seen that the solution must have a partisan political support, as explained at the beginning of this chapter. Thus the following was expressed:

*...I must tell you, some bills have been in the Legislative Assembly for more than 13 years, and directly, I am, because of the knowledge I have on the subject, the first one convinced that legislation is needed, but this is my second term, this time chairing the Environmental Committee. I have seen the political manipulation directly, which, as I have told you, does not allow a technical discussion but a discussion of ideological flags. That does not allow progress, and who is directly affected by it is the population.*

In El Salvador, the environmental problem is one factor that prevents the adequate recovery of the aquifers; therefore, all the interviewees agreed on the need to formulate policies that help recover the basins and sub-basins and the ecosystems in general. Thus, this subcategory of "environmental public policy" was constructed.

(C) explained that there should be policies for the treatment of sewage and gray water, and a protocol should be established for the industry to return the water used in its production processes to the river, but already treated and returned in acceptable conditions for life; solid waste and household discharge management should be improved,

*The water situation in El Salvador is complicated even though we are in the tropics. It rains permanently for at least six months, and there are a series of problems that make the situation critical one of the problems is contamination, contamination by the organic load; there is practically zero treatment of sewage water, and this generates 90% contamination of all rainwater resources, The second problem identified related to the water situation is the management of solid waste because it contributes and exacerbates pollution because all the material from the cities falls into the rivers. However, suppose one campaign to extract solid waste material from the river. In that case, it can reduce the organic load by about 60%, and the river probably recovers by 40%.*

Another solution, according to those interviewed, is to establish reforestation campaigns, especially in the watersheds and sub-basins, to generate rainwater absorption capacity and prevent soil erosion. (G) concurred and explained that:

*...if we count surface water, it only represents between 15% and 20% of the production sources; the rest of*

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*the production depends on wells and aquifers; the problem is that we do not have a regulation that allows the care of these aquifers watersheds and micro-basins, they do not have enough absorption capacity to be able to recover the water production, So for me, there is no water stress but a serious crisis. However, we still have time to recover a good part of the ecosystems from being able to recover the natural absorption mechanism; the problem becomes critical if the level of demand for the liquid is maintained. Therefore, we do not order our housing expansion.*

Public policy programs require implementing economic, human, and infrastructure resources. Therefore, the last subcategory established to group the solutions proposed by the actors interviewed has been called "public infrastructure policy". The actors agreed that part of the water problem is that there are water leaks, and, on many occasions, this is because the pipes date back to 1940. Many of these pipes are made of asphalt. The growth of the population, together with the expansion of the urban area, forces the autonomous water distribution institution (ANDA) to incorporate pumping equipment that generates greater pressure in the pipe network; as a consequence, the bursting of many of them is generating leaks of more than 50% of the production, according to the institution's technician. For this case, (F) explained the following on the subject:

*...in the country we are privileged with the amount of rainwater that falls, more than 90% of the water that falls goes to the sea or to the rivers, and we have the possibility of having rainwater collection plants to make it drinkable and take it to the families or the places where there is no possibility of having water, But currently, more than 55% of the drinking water is lost in the pipes and that is also a blow because it turns out that, I call this, these situations that occur because on the one hand you have houses or homes*

*and it seems inconceivable to me that there are people who have more than 15 days without water, 8 days without water, even 3 days without water" "of course maintenance is needed, but logic tells you, you don't have to be an engineer, logic tells you that the more pumping of the motors, of the water and this, obviously it generates more pressure, so you have pipes that are more than 70 years old and are still made of asbestos, so you will have more pressure in the water and therefore, logically, you will have more water leaks, so you will lose half of the production practically.*

The problem, as such, in this subcategory is the economical investment for the maintenance of the equipment and the restoration of the piping network, and as previously mentioned, there is equipment that is being used to distribute water to the population that dates back to 1940, that is, it has been 80 years since there has been a substantial change in this respect, (H) explains:

*During a normal month, we receive 4 thousand leak notices; we try to solve them all in the shortest possible time; many times, well most of them, we fix a pipe and change the material, but two days later, due to the pressure of pumping and the other pipes already damaged or that have already fulfilled their life, it breaks on another side. So we go now, and why not change the entire piping system? In downtown San Salvador alone, there are 360 meters of pipelines with installation dates from 1940 to 1960.*

The issue of solutions is very complex since there are many variables to evaluate to determine which are the most feasible, efficient, and effective to solve the problem; for this particular case, the stakeholders interviewed estimated their possible solution alternatives for the water problem the country.

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## 5. Proposed General Water Law under discussion in the Legislative Assembly

According to the information gathered in the interviews, the water problem was identified at the end of the 1970s. However, since then, government authorities have yet to make the necessary adjustments to reduce the destruction of ecosystems and have done very little to recover the country's watersheds, sub-basins, and aquifers.

The Legislative Assembly comprises 84 deputies and is in charge of generating laws. It is unicameral and is divided into working commissions that analyze the proposals and bills and then approve them in the legislative plenary. Having said the above, the Environment and Climate Change Commission has been in charge of studying, analyzing, and proposing a bill based on the proposals submitted by public and private stakeholders; the great detail is that this analysis has been under study for fourteen years and until the year 2021 the Commission is analyzing a comparative matrix of all the proposals submitted. Unfortunately, there is still no General Water Law. However, there have been some agreements and advances on the Human Right to water. In October 2020, the deputies approved a constitutional reform in which they agreed to reform Article 2 of the Constitution of the Republic in the following manner: "Everyone has the right to life, water and its sanitation..." and amended Article 69 of the Magna Carta, thus: "The State must create public policies and laws that guarantee all inhabitants safe, sufficient and affordable water, as well as the use and preservation of water resources..." they agreed to establish in the supreme regulatory body that water is a public good. However, another

reform was requested in which it was established that water administration should be public and not for profit. Still, this reform only had 31 votes and therefore did not prosper due to a lack of support from the right-wing parties. These constitutional reforms must be ratified by the next legislature (2021-2024) and must be supported by 56 votes. There has been progress; however, the road to achieving the human right to water in El Salvador is still bleak.

Figure 1 below summarizes the chronology of the presentation of proposals from public and civil society actors.

The proposed bills that exist in the Legislative Assembly and are represented in Figure 1, are characterized by having structural type guidelines (Secchi, 2013). The proposals revolve around creating general frameworks that enable sectors and plans to mitigate the country's problematic water situation. In this sense, the need for a regulatory body that integrates the laws on the subject gives the impression that the proposals aim to fill this gap. In other words, it lays the groundwork for establishing authorities for discussion and decision-making on water management.

Table 2 shows some relevant points in which similarities were found, such as objectives, purpose, principles and regulatory body. As noted, all the proposals aim, on the one hand, to regulate water management and, in this sense, to establish a regulatory framework and, on the other hand, to a certain extent, to establish the principles on the consideration of water as a human right and essential access.

It should also be noted that all the projects establish the creation of a Governing Body. The proposals presented by the water forum, the MARN, the UCA and the Catholic Church, that is to say, three

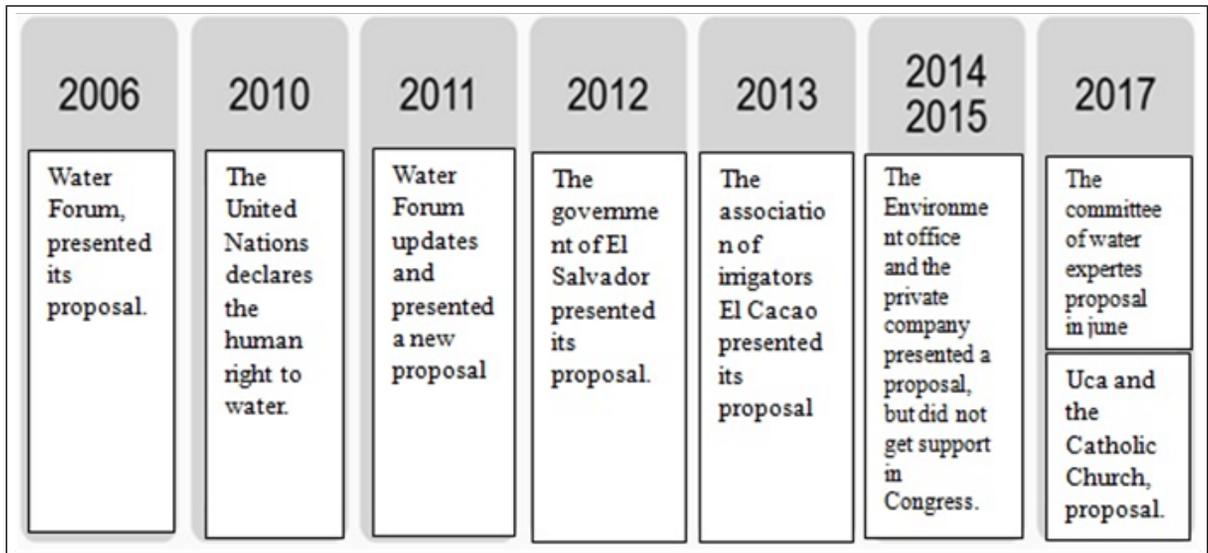


FIGURE 1 - The water problem in El Salvador dates back to the 1970s; however, social pressure began in 2006 through the Water Forum, a civil organization in defense of the environment, which presented to the Legislative Assembly the first proposal for a Water Law, which the parliament shelved.

SOURCE: Authors (2020).

of the proposals point to a composition integrated by representatives of the National Executive. The only proposal that establishes the organized civil society's participation is the Irrigation Association project. And the proposals presented by the Irrigators' Association and the Water Experts consider the need to incorporate private business associations into the governing body.

Taking up the dimensions of public instruments of the NATO model, the proposals revolve around the use of tools, on the one hand, from the category of "authority" and, on the other hand, from the category of "organization". Concerning the first category, it should be recalled that the instruments refer to governments' use of legal powers. In principle, the "command and control regulation" tool assumes various types, from rules, licenses, laws, etc.

From the proposals presented, it is perceived that the creation of a Governing Body is intended to establish the basis for organizing the regulation of the area and issuing regulations. One of the great advantages of this type of instrument is improving coordination efforts, and protecting and organizing governmental plans, ultimately allowing for greater predictability over time (Howlett *et al.*, 2013). And also, it can point to an instrument of the category of "organization" as it establishes a governmental reorganization of the public machine. In other words, it refers to institutional organizations that create new public agencies, merges existing ones, or reestablish their functions.

Finally, the proposals point to organizing advisory councils and committees, which could be framed as "command and control" instruments. As

TABLE 2 - Civil and political organizations present projects concerning their objective and purpose for the General Water Law. Under which principles their projects are governed, each bill proposal establishes the governing body of the whole structure of the water law. At that point, the governing part is following how each organization understands and dimensions of the water problem in the country.

General Water Law, discussions and proposals El Salvador					
From the proposed law	Water Forum	MARN	Irrigation Association	Water Experts	UCA/Church
Target	Regulating water management to ensure sustainability and access for all people, facilitating the development of planning instruments and ecosystem recovery, participatory management with the community, establishing functions for the development and care of the environment and society, declaring water as a national asset for public use, of public utility and social interest, and the proper management and administration of water resources.				
Purpose	Generate a regulatory framework for integrated water management. Design a national water plan. Design development and planning plans to recover ecosystems. Promote responsible citizen participation.				
Principles	The proposed laws are developed under the common good principles that water is a vital, finite, and vulnerable resource. That all activities of the State and the people be carried out through integrated water management, seeking ecological management and citizen participation, seeking to achieve sustainability and responsible use of water resources, with human consumption as the priority for water use.				
Governing Body	National Water Council CONAGUA, a public inter-institutional body made up of the ministers of: MARN MAG MINEC MINSAL External Relations. ANDA COMURES	National Water Council (CNA), composed of the ministers: MARN MAG MINEC MINSAL External Relations, MOP Technical Secretariat of the Presidency, Secretariat of Strategic Affairs, ANDA, Consumer Ombudsman's Office.	Water Authority, an autonomous official body composed of a Board of Directors, is organized as follows: a Director President represented by MARN, a director for MAG, a representative of COMURES, a director elected by the accredited universities in the country, a director for the agricultural and livestock associations, a director for the industrial associations, and a director for the tourism associations.	Water Authority, a public law institution, will have legal personality and administrative and financial autonomy. The authority will be integrated by a Board of Directors composed of: the President of the Republic, two directors elected by COMURES, and two directors elected by ANEP.	National Water Authority (ANA), a Higher Instance with a public, deliberative, and decisive character attached to the presidency of the republic, will be integrated by the ministers of: MARN, MAG, MINEC, MINSAL, External Relations, MOP, MITUR, ANDA, CEL, Consumer Protection Agency.

SOURCE: Authors (2020).

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Howlett *et al.* (2013) state, these bodies are often close to societal actors and not so close to public ones. For this composition, the proposal presented by the Water Forum is oriented in this direction since it foresees that they are made up of civil organizations in the struggle to protect the environment, municipalities, consumers, and private enterprises. Here, the participation of the private sector and organized civil society has been broadened.

The following is an attempt to present John Kingdon's multi-flow model applied to the water problem in El Salvador.

### ***6. The multi-flow model applied to the water problem in El Salvador***

Based on the content analysis of the interviews conducted on the water problem in El Salvador, the agenda formation process can be described through John Kingdon's multi-flow model, presented in Figure 2 below. For this purpose, the categories and subcategories constructed from the information obtained were considered.

According to Figure 2, John Kingdon's Multi-flow Model is represented through the first dynamic constructed by the interpretations and what the interviewees identified as the problem, three causal factors were established that originated the problem according to the interviewees: Public Management, Environment, and Economic Interests. The second of the flows focuses on the solution to the problem and the organized interests in providing a feasible, sustainable, and technically adequate response to the problem: Regulatory Framework, Environmental Public Policies, and Infrastructure Public Policies. Finally, regarding the third flow, the poli-

tical negotiations are represented, the coming and going of partisan interests to solve the problem; the interviewees related to the political sphere agreed that there is a problem to which an answer must be given and that they are working to generate a feasible, responsible and adequate solution to the magnitude of the problem, thus (D) explained:

*... as a parliamentary group, we have been working on a general proposal for a general water law in which we work through our aquifers to protect our watersheds so that at least we do not improve until we repair a little of the damage, you know, that one of the great difficulties we have as a country is the large amounts of pavement that do not allow a good permeability of the water and that all that amount of water is wasted, so we have water stress. So, with all those characteristics that I have mentioned that are few, for example, for the amount that there is, we are in a country where the water stress and the amount of water that there is not enough to supply all the communities...*

On the other hand, (F) determined that, in the Legislative Assembly, they are in the discussion and analysis of different projects that will allow obtaining a normative body that regulates how water is captured, produced, and distributed; however, in this flow, as previously explained, there are negotiations, stretching and shrinking of the political arena, the person interviewed regretted the polarization of the water issue and pointed out the following,

*... to create a regulatory framework that allows better management of the resource, of a resource that is already finite, because it is not infinite, then, in the assembly, there have been different types of discussions regarding bills but without a positive result because unfortunately, it has been an issue that has been a partisan political flag so that generates a distance*

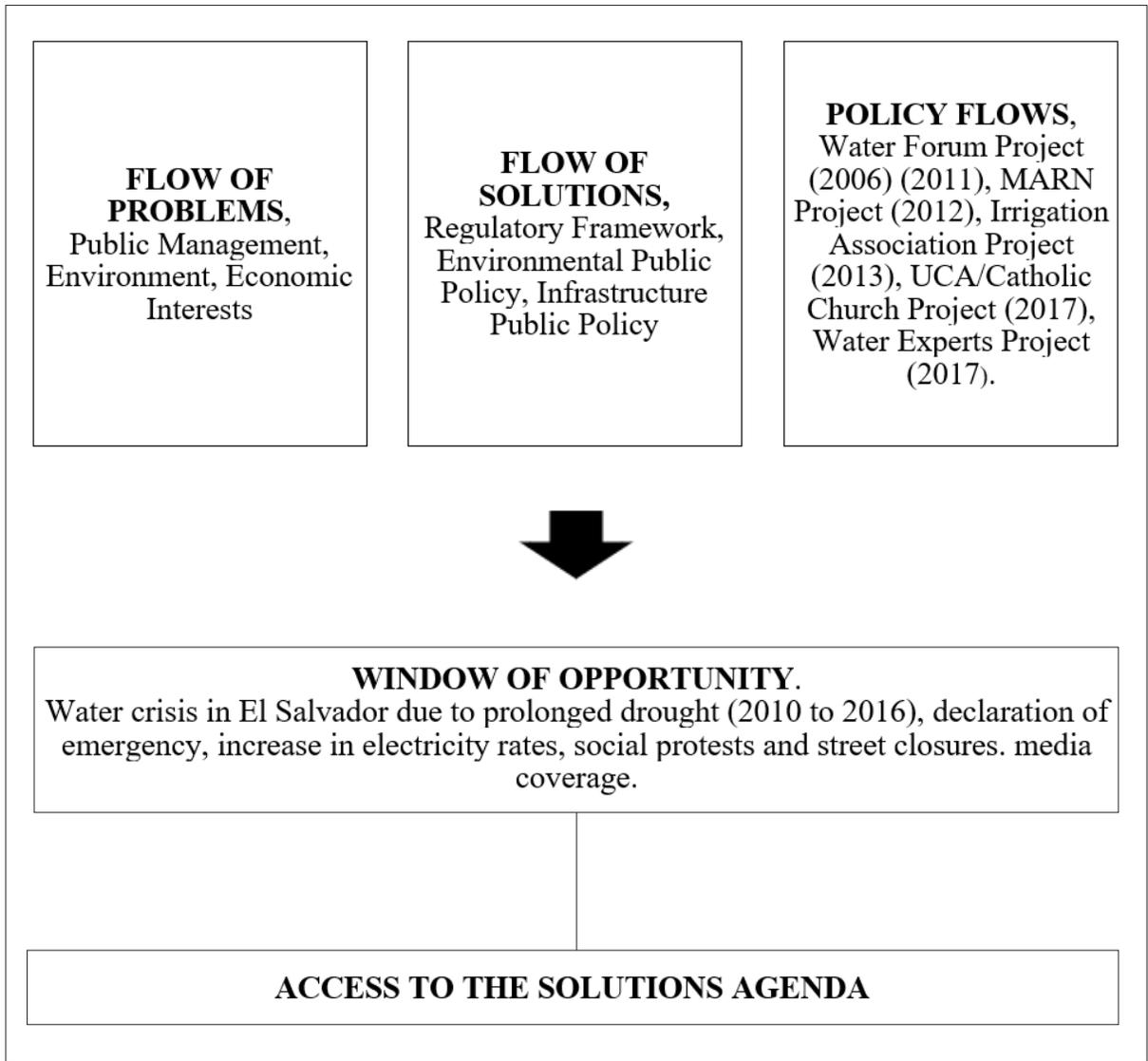


FIGURE 2 - Multiflow Model applied to the process of public agenda formation in the water problem in El Salvador, explains that, in the first table, the situations that the interviewed actors determined as part of the problem are established, followed by the table of possible solutions and in the third table, all the political and social participation actions around the problem, these three factors alone do not generate a synergy that allows solving the problem. It is then that a social, environmental, or political trigger arises that provides the opportunity for these flows to converge and enter the public arena through a window of opportunity.

SOURCE: Authors (2020).

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*and does not allow an eminently technical discussion which is what should exist removing the issue of partisan flag, because that already contaminates the discussion and does not allow you to advance...*

At this point, and under the scheme of John Kingdon's multi-flow model, it is considered that the water problem in El Salvador managed to enter the public agenda due to the water shortage crisis suffered by the country due to the El Niño phenomenon in Central America and the vulnerability of the region to the effects of climate change, the window of opportunity as described by John Kingdon, was the gap that allowed citizens to demand actions from the authorities to solve the problem of access to water. The dynamic relationships of the flows of the model allowed the water problem to enter the public agenda through the window of opportunity, thus transforming the social problem into a public problem so that public and private actors could find the best solution.

## **7. Conclusions**

The aim was to identify and analyze the arguments the actors conveyed concerning the public water problem in El Salvador. For this purpose, the empirical research employed a qualitative approach. First, the field research consisted of visits to public and private actors directly related to the water problem in the country; this data collection was done through semi-structured interviews. Subsequently, after collecting both documentary and verbal information and through interviews with public and private stakeholders, the content analysis of the information obtained was carried out.

The information collected made it possible to establish that the factors that influenced the formation of the water problem agenda are established in three categories, the first one being poor public management, generated by the incapacity of the authorities on water management, there was poor management of water resources, related to the disorderly urban growth, poor administration regarding the quality and quantity of water.

The second category is determined by economic interest, in which some of the stakeholders stated that the problem is exacerbated due to the interest of the corporations in not establishing a regulation that does not allow abuse in the excessive consumption of water resources.

And finally, an environmental category, which evidenced the depredation that exists in the territory in terms of forest resources, which has led to a deterioration in soil quality, favoring erosion and cattle grazing fields; another factor established in this category is the contamination of rivers by solid and organic waste from households, as well as the discharge of gray water from the industry. In addition, the deterioration of basins and sub-basins also makes the problem more acute and allows it to enter the public agenda.

From the analysis of the information collected, it can be determined that the alternative solutions to the water problem in El Salvador respond only partially to the political interests of economic power groups, as was our initial proposition in this work. However, this was changing to find other factors that generate weights and counterweights in this complex problem and, as mentioned, other elements are more important, i.e., it cannot be ignored that there are economic interests that, to some extent, hinder the consensus of parliamentarians, however,

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there are other aspects that were more prominent, such as the technical and legal feasibility of implementing a general water law. In this sense, the entire current legal system must be harmonized with the general water standard, and priority must be given to human consumption; there must be a public environmental policy in concrete terms, i.e., ecosystem recovery through reforestation campaigns in basins and sub-basins to improve soil permeability and prevent flooding and soil erosion, education and awareness campaigns to protect the environment, fiscal incentives for the industry to repair the damage caused to the environment and to install wastewater treatment equipment, improve the water distribution network and water sanitation, all of the above to make water production sustainable, otherwise only the generation of law without other complementary public policies, the problem will not have a comprehensive solution, and El Salvador will continue to aggravate its situation.

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