POLLUTION IN THE MERCOSUR REGION

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Introduction

Pollution problems in the Mercosur Region, as in the rest of the world, are basically due to Industry, Agricultural Activity and Urban agglomerations.

Some of the causes are due to the use of agro toxics, untreated dumping, excessive fishing, use of fertilizers, use of chemical elements in industries and a high density of population in the cities.

The impact of plastics in the coastal and estuarial environment, causes the contamination of garbage, in some cases higher than the salinity of the river bottom, also affecting the marine fauna.

On the other hand, urban centers present environmental problems typical of the concentration of population and activity in small spaces, the continuous population growth, brings with it a greater generation of waste, as in the case of Argentina and Uruguay.

At the same time, biodiversity may be affected by disasters, for example in the case of Brazil, the breakdown of the containment dams of iron extraction waste from the company Sanmarco in Mariana, a fact that caused a high degree of contamination in a Wide area of the area.

Pollution also deteriorates and affects air quality, as occurs in Santiago, capital of Chile, considered one of the most polluted cities in the world.

Artisanal mining, an activity that has been carried out for centuries in Peru, causes mercury contamination, affecting human health and marine fauna.

In this research work, on pollution in the Mercosur Region, a very broad topic to deal with, we have selected different ways to pollute by country, carrying out an analysis of the different cases, related to insurance law and an annex of Jurisprudence illustrates the treatment of pollution, in the courts.

In this context, there is an enormous potential in the Mercosur Region for synergies and complementarity between environmental protection policies and agendas to fight poverty and improve the quality of life of the most vulnerable social sectors.

The states have the opportunity to incorporate a long-term perspective that allows an integration of the environmental aspects to all the decisions they make to the development.

Executive Summary

Chapter I

In this section, of the Argentine Republic, we tart the contamination with plastic waste in the Río de la Plata, the impact of plastics in the riparian, estuarial and microplastics in fluvial and marine biodiversity. The urban centers present environmental problems that are typical of the concentration of the population and activities in small spaces. The main problems are the disposal of waste, water pollution, and floods. The national and provincial regulatory legal framework related to environmental water management and the environmental insurance required in the country.

Chapter II

Federative Republic of Brazil, we develop the case of the breaking of the containment dams of iron extraction waste of the company Samarco, in Mariana and the negative impacts on the marine biodiversity.

The legal framework, applicable to infractions to the rules of prevention, control and surveillance of pollution caused by the release of oil and other harmful or dangerous substances in waters under National jurisdiction. Environmental insurance as an economic instrument within the legislation.

Chapter III

In this chapter, Republic of Chile, we address the issue of air pollution in the city of Santiago, capital of Chile. In the legal framework, mention is made of modern legal initiatives aimed at controlling pollution and improving the environment, the first thing that should be noted is the inclusion in the Political Constitution of the Republic of Chile of the "right to live in an environment free of contamination "(Article 19, No. 8). The provision is reinforced in the constitutional norm, establishing among the limitations and obligations related to the" social function "of private property, those that derive from the" conversation of the environmental patrimony "(Article 19, No. 24, subsection second), as well as the regulations concerning emissions. The environmental insurance and the coverage of the current policy**.**

Chapter IV

In this chapter, we develop mercury contamination in Peru's soils, caused by artisanal mining. The affectation of mercury in human health and marine fauna. The accident of spill of mercury, happened in the year 2000, subject that we tried two years ago, in a meeting in Uruguay along with Dra. Roxana Corbran. At the same time mention is made of the current general liability policy.

Chapter V

In this chapter, we treat water contamination by heavy metals and other elements. The affected areas of the country and environmental insurance.

Annex Jurisprudence

In this chapter, we enclose judicial decisions, for each of the countries that make up the group, of judicial decisions on pollution.

Acronyms

Cd	**Cadmium**
CINCIA	**Amazon Scientific Innovation Center**
CMS	**Convention on the conservation of migratory species of animals wild**
CONAMA	**National Commission for the Environment**
Cr	**Chrome**
Cu	**Copper**
DAM	**Acid mine drains**
ECLAC	**Economic Commission for Latin America and the Caribbean**
BOD	**Oxygen biochemical demand**
DIGESA	**General Directorate of Environmental Health**
EMD	**Daily target emission**
Fe	**Iron**
MINSA	**Ministry of Health**
OSE	**Sanitary Works of the State (Uruguay)**
Pb	**Lead**
UNEP	**United Nations Environment Program**
SSN	**Superintendence of Insurance of the Nation**
WHO	**World Health Organization**

ARGENTINIAN REPUBLIC

Pollution with Plastic residues in the Rio de La Plata

Geographic location of the Río de la Plata

The River Plate is an estuary or bay of the Southern Cone of America formed by the union of the Paraná and Uruguay rivers. The river can be divided into two sectors: the interior sector, composed of the upper and middle sections, which is shallow and is devoid of saline intrusion, and the outer sector, between Punta del Este and the Bay of Samborombón, section of greater depth, and with an important marine influence since it is already an estuary of the Atlantic Ocean.

It has a shape that tends to the triangular 320 km long, serving as a frontier along its route between Argentina and Uruguay. It has a northwest-southeast general course, pouring into the Atlantic Ocean the runoff of its river basin plus that of its tributaries, totaling around 3 200 000 km².

Ocean front of the Río de La Plata

The confluence of the waters of the Rio de la Plata with those of the sea generates a mixture that favors the superficial availability of rich nutrients from deeper waters, forming a very productive and attractive ocean front for the reproduction of an important variety of fish, which also calls for different species of mammals, birds and marine reptiles.

The ocean fronts are sectors of the sea where they produce abrupt changes in temperature or salinity, associated with intense horizontal and vertical currents that mix and raise dissolved nutrients from deep waters to the surface.

This mixture of waters transports to the surface under light action the nutrients that result from the degradation of dead organisms that are deposited on the seabed.

Without this mixture the nutrients would be trapped in deep water, out of reach of sunlight and microscopic algae that live in suspension.

As a result of the great continental discharge, when the fresh water of the Río de la Plata, with the contribution of its tributaries the Paraná and Uruguay rivers, reaches the ocean, an intense and active front of salinity is formed, followed by a plume of surface fresh water (so called because of the structure that originates in front of the interaction of fresh water with oceanic water, leaving the freshwater plume above the salt by density difference) whose influence has been traced to 23 ° S (Simionato, Dragan, Meccia and Nuñez, 2004). The position of the bottom salinity front shows a salt wedge structure that is observed during most of the year.

Impact of plastics in the coastal and estuarial environment

The sampling carried out through the use of bottom trawls at the mouth of the La Plata River and the survey of the coastal sector corresponding to the sector sampled in the water, describe the distribution, type and quantity of waste found on the coastline and in the bottom through this front salinity front. The main type of waste found in the area front and coast were plastics and plastic bags.

In the coastal zone, plastics accounted for 44% of heavy waste, 30% were plastic bags, and 9% cans.

On the other hand, at the bottom of the river in the sector opposite, the composition is similar, 55% plastic bags, 22% plastics, 5% cans and 18% of the total heavy waste without being able to classify.

The concentration of garbage found upstream of the salinity front (Punta Piedras-La Plata) was higher than the front salinity front acting as a barrier of accumulation of waste. Most of these plastic waste, by the action of the

tides and the winds, end up depositing in the beaches of the riverside sector that are upstream of the front between Punta Piedras and La Plata. Acha et al. (2003)

The salinity front is efficient to trap waste, mainly in the lower area of the Barra del Indio (mouth of the Río de la Plata between Punta Piedras and Montevideo). The bottom salinity front represents the main repository habitat for two more abundant fish species in the estuary, Micropogonias furnieri and Brevoortia aurea.

On the other hand, as a consequence of the action of winds and tides, the process of accumulation of plastic waste is mainly facilitated, which impacts on the riverside sector of an important biosphere reserve of UNESCO, Ramsar Site and Provincial Nature Reserve (Acha et. , 2003)

In 2013, a study was carried out with the purpose of developing a methodology to assess the quality of the habitat of the southern coastal strip of the Río de la Plata, thus facilitating the knowledge of the ecological status of water courses. With the objective of developing and obtaining an index that would allow this purpose to be achieved, they developed the Habitat Index for the Río de la Plata (IHRPlata) that simplifies and summarizes the information obtained between 2005 and 2008 in 21 sampling sites included in the mouth of the Luján River and Punta del Indio. There are four variables that describe and build the Habitat Index:

1) Spatial succession of coastal vegetation

2) Coastal modifications due to the introduction of infrastructures

3) Occurrence of waste on the coastline

4) Biological indicators of oxygen déficit

These four indicators show some of the problems generated as a result of anthropogenic activity in the River Plate riparian environment, for example organic and inorganic pollution accompanied by the contribution of household waste, which is transported by water or deposited directly on the coast. The garbage constitutes a physical barrier for the free exchange between the aquatic and the terrestrial means because it is entangled between the stems and rhizomes of the vegetation.

The presence of waste in the coastline was made by qualitative estimation, for which an area of 100 meters long and 1 meter wide was established. In these plots was recorded the presence of waste such as plastics, glass, metal, paper, cloth, rubber, organic waste and personal hygiene.

Impact of plastics and microplastics in fluvial and marine biodiversity

In 2011, the gastrointestinal content of 106 Franciscan dolphins (Pontoporia villei) caught incidentally in artisanal fisheries north of the Buenos Aires coast was analyzed. The result of the analysis showed that 28% of the dolphins had plastic waste in their stomach, without registering any type of injury associated with these foreign bodies. The predominant residue found in the stomachs analyzed was that which came from different types of wrappings (paper, cellophane, bags, elastic bands).

The ocean front of the Río de la Plata is an important feeding area for some species of marine turtles of the South-West Atlantic. An analysis was made of 62 juvenile green turtles (Chelonia mydas) caught incidentally in the artisanal fishery of the southern

Samborombón Bay, in 90% of the gastrointestinal tracts examined, the finding of hard plastic waste and bags was reported.

In the year 2017 a study of gastrointestinal contents of sea lions of two hairs (Arctocephalus australis), found dead on the beaches in southern Brazil and northern Argentina, resulted in plastic in their stomachs was the predominant component.

The presence of microplastics in several species of fish in the Río de la Plata is a recent finding. Over 87 fish belonging to 11 different species, the finding of microplastics in 100% was proven.

Urban Development

The urban centers present environmental problems that are typical of the concentration of the population and activities in small spaces. The main problems are the disposal of waste, water pollution, and floods.

The continuous population growth brings with it a greater generation of waste. The inhabitants of the City of Buenos Aires and the Municipality of San Isidro generate an average of 1.47 kilograms per inhabitant per day of household waste.

The rivers of the hydrographic basins of the Metropolitan Region of Buenos Aires, are characterized by being typical watercourses of plain area, with little slope and of a flat and uniform topography. The three main basins, Río Luján, Reconquista and Matanza Riachuelo, cross the most densely populated region of the country, are easily contaminated by sewage, industrial and domestic waste, discharging into the Rio de la Plata all the pollution flow.

Legal framework

The regulatory framework that addresses the problem of marine debris internationally is abundant. Most of these regulations are related to international conventions, agreements and protocols to which Argentina is subscribed (United Nations Convention on the Law of the Sea, International Convention for the Prevention of Pollution from Ships (MARPOL) CBD and Convention on Conservation of migratory species of wild animals (CMS).

As regards the local level, the regulations that directly address the problem of pollution by "marine debris" are not so extensive, being limited to the regulation of waste management aboard all types of vessels and in port sectors. At the same time, indirectly there is a wide regulatory framework in Argentina at the national, provincial and municipal levels, oriented mainly to the integral management of urban solid waste, among other laws and provisions whose implementation would indirectly avoid or minimize the entry of waste into water courses, preventing river and marine pollution with garbage.

Particularly for the Río de la Plata and its tributary basins there is a national and provincial regulatory framework related to the environmental management of "waters". The Regime of Environmental Management of Waters Law 25,688 at the national level and the Water Code Law 12,257 at a Buenos Aires level, create the juridical figure of the basin committees.

Environmental insurance in Argentina

The Environmental Insurance is the financial guarantee required to any physical or legal person, public or private, that carries out risky activities for the environment, the ecosystems and their constituent elements, according to article N ° 22 of the General Law of the Environment.

The insurance is intended to cover, ensure the availability of funds necessary to restore environmental damage of collective incidence, caused accidentally, regardless of whether it manifests in a sudden or gradual.

It is an environmental management tool that enables the State to fulfill its role of guaranteeing society the right to a healthy, balanced environment, suitable for human development as established by Article No. 41 of the National Constitution, being useful for recomposing the environmental damages generated by industrial activity and ensure the interests of the inhabitants.

Environmental insurance is mandatory for those natural or legal persons, public or private, who carry out risky activities for the environment, ecosystems and their constituent elements. The hiring of insurance and its implementation aims to prevent damages that may affect the general population.

The operating rules for the application of the Environmental Insurance are:

• General Environmental Law No. 25,675,

• Resolutions SAyDS No. 98 and 1973/07, 177/07, 303/07, 1639/07, 1398/08, 481/11, MAyDS No. 206/2016 and 256/2016, among others.

Through these resolutions, the activities reached by the obligation established in article N ° 22 of Law 25,675 were determined, according to criteria that prioritize the activities with the greatest polluting potential and the principle of progressivity of the same law. The criteria that guide the inclusion of activities focus on risks related to the handling of toxic substances or polluting power, their eventual release to the environment in the event of accidental events, and their probable impacts on the ambient. By calculating the level of environmental complexity, it is determined who are the subjects that must comply with the mandatory environmental insurance.

The Superintendency of Insurance of the Nation (SSN) granted to Prudencia Seguros, through Supplied 114756 of July 28, 2011, the first authorization of the market to operate a policy with risk transfer in the environmental sector. The new policy covers, with the scope defined in its General Conditions, the risk transfer of the Insured that must repair a damage of collective incidence produced to water or land, up to the amount of the insured capital. This policy does not cover the environmental guarantee requirement established in the General Environmental Law N ° 25.675, Article 22.

The Civil Liability for Pollution Policy covers the Insured's liability, up to the amount of the insured capital, for the damages caused to third parties by the environmental pollution caused by their activity. This instrument enables third-party claims for damages attributable to the insured's activity as a result of accidents contemplated in the policy and that have occurred accidentally

FEDERATIVE REPUBLIC OF BRAZIL

Pollution in Mariana

Brazil is the most biodiverse country in the world and this wealth also lives in its waters. In 2015, there was a breakdown of the containment dams of iron extraction waste from the company Samarco, in Mariana (MG), to determine the degree of contamination caused by the accident, a study was carried out in the northern area of Bahia's Holy Spirit and South of the negative impacts on marine biodiversity, with special reference to the areas of conservation units.

The sampling areas included collection points in the estuary of the Rio Dulce estuary.

Before the arrival of the mud in the sea, samples of water were collected for the analysis of the total concentrations of metals. In order to evaluate the possible accumulation of these metals in organisms resulting from water contamination, collections of various species of fish were made, including some of commercial interest. The samples of water and biological material were classified, kept frozen and processed in the laboratory for further analysis in the laboratory of the concentration of metals

Different temporal patterns of concentration of different metals were observed

They are analyzed when considering the total concentrations of these elements in the water. the Cd, Cr, Cu and Pb metals showed a significant increase in their concentrations in the first collection concentration after the event (01/28/2016), taking in the second collection after the event (04/24/2016) returned to levels similar to those observed before the occurrence of the event. On the other hand, it is noted that Fe concentrations increased significantly in the first collection after the event (01/28/2016) and remained elevated also in the second collection after the event (04/24/2016). Finally, the concentrations of Mn were not altered first collection after the event (01/28/2016), but increased significantly in the second collection after the event

(04/24/2016), confirming the hypothesis that there was a carryover of metals deposited in the bed of the River Doce on the occasion of the event and the important contribution of mining in the pollution of coastal waters in the region of Foz do Rio Doce with Fe and Mn.

Concentrations of metals in the muscle of fish

The results of the analyzes in the samples of fish muscle (hake, fisherman, fisherman, rocket fishery and sheep) were compared temporarily, on the basis of samples

collected in October 2015, 01/28/2016 and 04/24/2016.

The results indicate different patterns of metal accumulation in the samples of

muscle of the fished analyzed. With regard to Cd and Cr, the concentrations of these metals showed a significant increase over the time of sampling. The concentrations of Cu, Fe and Mn showed a significant increase in the first collection after the occurrence of the event (01/28/2016), with a tendency of reduction in the second collection after the occurrence of the event (04/24/2016)), but still presenting higher concentrations than those observed before the event (October / 2015). Finally, the Pb presented a pattern of accumulation different from the other metals. In this case, no significant changes were observed in the levels of accumulation of Pb in the muscle of the fishes analyzed before and after the occurrence of the event.

The results of the analyzes performed on muscle and liver samples of the different fish species analyzed (Eucinostomus argenteus, Eucinostomus melanopterus, Pachyurus adspersus, Caranx latus, Eugerres brasilianus, Cathorops spixii, Genidens genidens, Pachyurus adspersus, Pomadasys ramosus, Bairdiella ronchus , Pimelodus maculatus, Callichthys callichthys, Mugil liza, Mugil curema, Oligoplites saliens, Cynoscion, Micropogonias furnieri and Centropomus parallelism) were compared temporarily, based on samples collected in the period from 19 to 23/11/2015 and from 29 to 06/30/2016.

Based on the results obtained in the analyzes carried out in the present study with the

samples of water and fish collected in the Foz do Rio Doce, it was observed that they occurred

significant increases in the levels of seawater contamination by Cd, Cr, Cu, Fe, Mn and Pb after the occurrence of the event, being that metals not associated with mining related (Cd, Cr, Cu and Pb) and they presented significant reductions in the second campaign of the sample after the occurrence of the event. On the other hand, the concentrations of metals associated with mining related to the event were still high in the second campaign of the sample, after the occurrence of the event, as is the case of Fe, or had their high levels.

Fishing in the region of the mouth of the Doce River is still prohibited. The area of prohibition extends from Degredo, in Linhares, to Barra do Riacho, in Aracruz, limited to the depth of 20 meters and awaiting further studies.

Legal framework

In terms of environmental management, Brazil is one of the few countries that started early to develop specific environmental policies.

The Civil Code contains several articles related to the relationship of the individual with environmental aspects, particularly in relation to individual and collective rights, property, and so on. It also establishes protection of water courses to prevent their deterioration and contamination. Modification: Law Nº2559 / 05 that modifies article 1898 subsection b) of the Civil Code, including groundwater among public property of the State.

Decree No. 4136/2002 - "Provides for the Specification of the sanctions applicable to infractions to the rules of prevention, control and surveillance of pollution caused by the release of oil and other harmful or dangerous substances in waters under National jurisdiction, foreseen in Law No. 9,966.

Environmental insurance

Brazil, has laws that make mention of environmental insurance as economic instruments within the legislation Federative Republic of Brazil, Art. 9. (1982)

The Environmental Insurance is a type of policy that can be contracted by any legal entity, especially those that use in their production some type of raw material that can cause environmental contamination, that is to say, companies that, in their production processes, generate waste capable of degrading the environment. They can also benefit from this type of insurance organizations that go through situations of soil contamination in their facilities, which work with the handling of polluting substances in third-party facilities and, even, those that coexist daily with the imminence of environmental damage. However, as a requirement for the contracting of the Environmental Insurance, the company must be in possession of the environmental licenses and the Auto Inspection of the Fire Department (AVCB) in force.

THE REPUBLIC OF CHILE

Air pollution Santiago de Chile

Air quality deteriorates due to the conjunction of several factors, some of natural origin and others anthropic (caused by man), which participate in large urban or industrial complexes. Among the natural factors, the ventilation capacity of the atmosphere stands out, which results in a greater or lesser dispersion of the pollutants; On the other hand, the anthropic factors include the emissions generated in the operation of productive processes or those of natural origin, such as the case of particulate matter pollution in the central valley of Chile.

Air quality is also a serious problem in several urban centers of the country, but especially in Greater Santiago, where the size and size of the affected population leaves the situation of other cities in the shadows, as is the case of Temuco, for example, which in winter has high levels of CO 2 pollution, even higher than several communes in Santiago.

Santiago, the country's capital, is one of the most polluted cities in the world, and its population suffers a growing deterioration in their health. In addition, with the emission of more than one million tons of sulfur into the atmosphere from copper smelters, it is among the ten largest polluters in the world, comparable only to what happens in some Eastern European countries.

The city of Santiago de Chile, has seven million inhabitants, is located in a valley surrounded by mountains, so in the months of autumn and winter the quality of the air usually worsens due to the absence of breeze that spreads the harmful particles, as well as the phenomenon of thermal inversion, the latter is that the temperature on the surface is less than in height, so that the harmful particles remain at the level of the

Floor.

In June of 2018, the environmental preemergence for air pollution was decreed, the measure supposes the paralysis of more than a thousand industrial sources and the prohibition of transit to vehicles that do not have the appropriate equipment, among other restrictions.

El nivel de alerta supone una concentración de entre 200 y 300 microgramos de partículas nocivas por metro cúbico de aire. También se prohibieron las quemas agrícolas y el uso de calefactores y cocinas de leña en toda la Región Metropolitana de Santiago.

En materia de vehículos motorizados, se prohibió este domingo la circulación de todos los vehículos sin sello verde (carentes de convertidor catalítico), incluidas las motocicletas, en la provincia de Santiago y municipios de San Bernardo y Puente Alto.

Legal framework

Among the modern legal initiatives aimed at controlling pollution and improving the environment, the first thing that should be pointed out is the inclusion in the Political Constitution of the Republic of Chile of the "right to live in a pollution-free environment" (Article 19, Nº 8). The provision is reinforced in the constitutional norm, establishing among the limitations and obligations related to the "social function" of private property, those derived from the "conversation of the environmental heritage" (Article 19, No. 24, second paragraph).

In addition, the constitutional text opens the possibility of filing a special protection remedy "when the right to live in a pollution-free environment is affected by an arbitrary and illegal act attributable to a given authority or person" (Article 20, second paragraph)).

Although this resource is difficult to apply, the aforementioned background provides a solid foundation and support for the improvement of our legal framework in environmental matters. There are several legal bodies, before and after the Political Constitution of the Republic of Chile, which regulate and regulate the sources Stationary or mobile that can cause air pollution.

We will highlight some specific policies or measures because of their relevance for the Metropolitan Region of Santiago and for the main megafuentes of the country, especially the mining ones, which have deserved special treatment from the authorities. For the cases of the Chagres Smelter and the Chuckicamata Division of CODELCO-Chile, we will briefly discuss the provisions for the control of megafuentes.

On January 11, 1985, Joint Supreme Decree No. 4 was issued by the Ministers of Health, Agriculture and Mining, which regulates the activities of the Copper Minerals Smelter of Chagres, V Region of Valparaíso. The joint decree imposed on the owner company the obligation to take the necessary measures to prevent the concentrations of sulfur dioxide from damaging the surrounding agriculture.

Special margins were set for the concentrations, regardless of compliance with the general norms in force for the protection of the health of the population. The company was obliged to project, install, operate and maintain its It has a monitoring system for

the concentrations of sulfur dioxide in the atmosphere, under the control of regional health and agriculture agencies. A special permanent commission was set up for these purposes and sanctions were established in accordance with current legislation.

In 1991, Supreme Decree No. 28 of the Ministry of Agriculture was issued. Given that "the dilution capacity of sulfur dioxide in the atmosphere of the agricultural area surrounding the Chagres smelter is practically overwhelmed by the current emissions from the smelter", the expansion of the plant with a new furnace, and the need to update the technical procedures for air quality monitoring, this legal body establishes standards for the concentration of sulfur dioxide in the atmosphere of the area surrounding the smelter, and regulates the approval of the project to expand its operations.

Special Provisions Applicable to the Chuquicamata Division of Codelco-Chile

In 1986, the Ministries of Health and Mining issued Supreme Decree No. 196, which obliges the Division to design, install, operate and maintain an air quality monitoring system in the population areas of Chuquicamata and Calama at its expense, Region II. Antofagasta The continuous monitoring must account for the presence of sulfur dioxide and total particles in suspension, apart from the prevailing meteorological variables. The division was also obliged to develop a pollutant dispersion model for the Chuquicamata area based on air quality information from the monitoring network.

He was also required to develop a system for predicting critical episodes of pollution and a plan for its prevention. Likewise, the need to design and implement various projects aimed at reducing their emissions, especially sulfur dioxide through a sulfuric acid plant and the arsenic contained in copper concentrates, was imposed. He was also required to develop projects in the area of health for the personnel of the division.

Decontamination Plan for the Metropolitan Region of Santiago

Supreme Decree No. 349 of the Ministry of the Interior of 1990 created the Special Decontamination Commission of the Metropolitan Region. This interministerial entity has as its main function the formulation of plans for the decontamination of said region and is composed of a Committee of Ministers, an Operating Committee and a Technical and Administrative Secretariat.

The Commission proposed a Decontamination Plan for the Metropolitan Region that compromises the political activities of the Transport, Health, Housing and Urban Planning, Public Works, Industry and Energy sectors, and coordinates its activities with Conama.

The plan is based on the analysis of the limited physical capacity of dispersion and diffusion of air pollutants in the basin in which the city of Santiago is located, and proposes goals for reducing the emission levels of the various polluting activities with respect to their levels of base.

In general, it proposes emission targets for the different sources according to its own technology options, as well as urban management measures, transport administration, control of industrial activities, construction of public works and operation of health agencies, among others. . The Commission proposal includes a master plan, a program of immediate actions and an emergency program.

The master plan contains a series of measures, among which we can point out: education and environmental information, obligatory emission factors for fixed and atmospheric sources, expansion of the monitoring network, epidemiological surveillance of those affected by pollution, control of levels of pollution, points of maximum impact, modernization of public transport, optimization of traffic control and urban and rural afforestation, among others.

The program of immediate actions contemplates measures of cooperation of the citizens in their homes, in the use of vehicles, and in other activities, in addition to some studies necessary to elaborate projects to reduce the levels of atmospheric pollution. These measures include some concerning the use of vehicles; traffic and transport regulations; quality and use of fuels; use of the metro system and its connections; paving of streets; demolitions and excavations; generation, transport and deposition of debris, and agricultural burning, among others.

Special mention should be made of Supreme Decree No. 185 of the Ministry of Mining of September 28, 1991, which regulates the operation of establishments that emit quantities greater than or equal to three tons per day of sulfur dioxide, or one tonne per day of particulate material. It is also applicable to those areas that are saturated or latent. Within the megafuentes issuers that regulates this decree are considered the functions of Chuquicamata, Caletones, Potrerillos, Ventanas, Paipote and Chagres; the roasting plants of Refimet, El Indio and Molimet; the thermoelectric plants of ENDESA, Chilgener and Tocopilla; the Huasco Pellet Plant, and plants that use coal as an energy source.

In this legal body, special rules, primary and secondary, are defined for the various components that are to be controlled. Also modify their facilities, demanding decontamination plans for those that exceed the standards and the implementation of air quality monitoring and surveillance systems. Finally, it establishes sanctions for those facilities that do not comply with the provisions.

This decree is part of the public policies aimed at controlling the main sources of air pollution, within which mining facilities and operations have a high share of responsibility.

Regulation of Emissions from Stationary Sources of the Metropolitan Region of Santiago

On March 2, 1992, Supreme Decree No. 4 of the Ministry of Health was published, which establishes norms to regulate emissions of particulate material in the Metropolitan Region of Santiago by fixed or stationary sources. This decree repeals Supreme Decree No. 31 of March 7, 1991.

The Supreme Decree No. of the Ministry of Health establishes a general emission standard for existing stationary, group and punctual sources of the region. The standard sets a maximum emission of 112 mg / m3 as of December 31, 1992. New sources, that is, those that are installed after the dictation of the decree, must comply with the standard of 112 mg / m 3 in the case of point sources and 56 mg / m 3 for group sources not intended for heating.

In addition, this regulation establishes a second goal for point sources, as of December 31, 1997. This goal may be met through a compensation system. The formula that should be applied for this medium-term goal is the following:

EMD (Daily Target Emission in kg / day) = Flow rate (m3N / hour) x 0.000056 (kg / m3N) x 24 (hr / day). Through the compensation system, the real emissions of the sources measured on the target emission must be compensated with the reduction of emissions from other point sources, below their respective target emission. With this system, the authority proposes to freeze the emissions from the stationary point sources in the region. This regulation has already begun to bear fruit and is encouraging the industrial sector of the Metropolitan Region of Santiago to introduce the necessary technical changes to comply with it.

Project of the National Commission of the Environment with the Economic Commission for Latin America

The ECLAC / UNEP units for development and the Environment and the Environment and Human Settlements Division of ECLAC have been developing a project on Policies for the Environmentally Sound Management of Waste, with the support of the Government of the Federal Republic of Germany through of the German Society of Technical Corporation.

Within the framework of this project and the conama advisory agreement by Cepal, a workshop was held where several studies prepared by consultants and international experts for specific topics were presented. Later, a seminar was held to plan project-oriented objectives on the policies for the seminar on the planning of objective-oriented projects on policies for the control and monitoring of atmospheric pollution from fixed sources in the productive and energy sectors. The tree of problems linked to the targeted objective was defined there, and a project planning matrix was defined to define and implement the policies necessary to solve them.

The Government of Chile, through Conama and with the cooperation of Cepal, among other entities, has developed the project in its different phases. In this context, Supreme

Decree No. 158 of the Ministry of Mining, which controls atmospheric pollution of megafuentes, has been issued, other measures are being studied.

Other activities planned after these objectives are the requirement of environmental audits, the identification of technical and scientific antecedents for the administrative action of the State, the incentive to the use of environmentally appropriate technologies, the promotion of environmental policy instruments relevant to emissions from fixed sources , the improvement of air quality standards, the improvement and training of controlling and auditing institutions, and the relevant environmental information disclosure programs.

At the end of 1991, a seminar convened by Cepal, Conama and the Regional Secretariat of Planning of the Metropolitan Region, on the economic and regulatory instruments for environmental policies was held, where the various instrument options that are being applied were discussed and discussed. Chile, in the various sectors related to pollution. There was consensus that this is a complex issue, which should remain open to new discussions, in the perspective of using the broadest range of instruments, making each field the most appropriate combination.

In the framework of these activities, studies have been carried out on medium and small companies with pollution problems, in collaboration with SERCOTEC. One of these studies provided a probative record of the positive profitability of technological innovation projects to reduce polluting emissions. Other studies have advanced in the discussion and formulation of economic instruments for the national environmental policy, taking special note of the international experience that exists today on the subject.

Environmental insurance

• CHUBB insurer Covers environmental risk as a result of a gradual, sudden and accidental contamination event.

• The insurance protects against the risk of pollution affecting third-party properties, generating damages and cleaning and removal costs.

• Coverage is extendable to interruption of business and transportation.

• The insured is also protected from unknown pre-existing facts and new facts (that is, facts after the purchase of the property).

REPUBLIC OF PERU

Pollution in Peruvian soils

According to the document Conservation and sustainable use of ecosystems for the provision of ecosystem services of the Ministry of the Environment, published in January 2017, "it is estimated that in the last 20 years more than 3000 tons of mercury have been thrown into the Amazonian rivers , contaminating water, aquatic organisms and human populations, which consume water and fish. "

The same study indicates that "in the last 18 years, gold operations in the Madre de Dios region have deforested approximately 30,000 hectares of tropical forest, mainly in the Huepetuhe and Caychive basins."

Artisanal mining in Peru, the document says, is not a recent phenomenon, but rather an ancestral activity that has gained momentum, with a hint of informality, since the late 1970s. He adds that the high price of gold led to the exploitation of gold deposits.

In Peru, informal gold mining, at first, was concentrated in Madre de Dios, Puno, Sur Medio and La Libertad as a means of subsistence in abandoned or non-closed mines.

However, as of the middle of the last decade, informal and illegal mining activities expanded throughout the Peruvian territory. For 2013, the Ministry of the Environment study indicates, this activity was already present in 25 regions of the country.

The Center for Scientific Innovation in the Amazon (CINCIA), created by Wake Forest University based in Puerto Maldonado, has conducted studies on the most acute cases of mercury contamination located in several districts of Madre de Dios and La Rinconada, in Puno. "They are emblematic places that report high levels of mercury in both ecosystems and humans."

The study analyzed pollution levels from a comprehensive study that covers soil, water, plants, fish, air and at the same time development of remediation and reforestation projects in degraded areas. This is a very important milestone in the field of research because, in addition to covering several matrices, it has a broader geographical scope than any study carried out so far.

The project has monitoring stations in all the districts where there is mining in the region. That is to say, they are present in the districts of Tambopata, Laberinto, Inambari, Huepetuhe and Madre Dios, as well as the Camanti district, which belongs to the Cusco region but borders on Madre de Dios.

One of the objectives of this research is to identify where mercury contamination begins and then establish how this substance enters the trophic chains. It is presumed that mercury is volatilized and by gaseous means it is precipitated again on plants, soils or bodies of water.

In some cases the mercury that is poured directly into the rivers, passes to the food chain through the fish that the human being consumes later. Feeding through fish consumption is a source of mercury contamination.

The research will also allow us to really know what is the distribution of mercury in Madre de Dios and what are the dangerous zones due to contamination based on scientific data.

Previous studies show the affectation of mercury in indigenous communities and cities of Madre de Dios. The research Mercury concentrations of human populations in the Peruvian Amazon, conducted by the Carnegie Amazon Mercury Project (Camep) in 2013, found elevated levels of mercury in all the communities analyzed in Madre de Dios. More than 75% of the people evaluated had levels above the permitted limits.

According to the study, mercury levels were higher in indigenous and rural communities. In these cases, 95% of the people evaluated reported that they consumed fish that they caught in local aquatic ecosystems. Research in this region also revealed that 78% of the 226 adults analyzed in Puerto Maldonado had triple the allowed value (1 ppm), and even reached 27 times more. In addition, of 15 fish species analyzed, nine had mercury levels above the international standard.

The situation is so critical in Madre de Dios, that the government of Ollanta Humala was forced to declare in emergency 11 districts of this region, after the National Institute of Civil Defense presented a report that revealed the high levels of this substance in the organism of these populations

At that time, the districts of Tambopata, Inambari, Las Piedras, and Laberinto in the province of Tambopata; Fitzcarrald, Manu, Madre de Dios and Huepetuhe, in the province of Manu; and Iñapari, Iberia and Tahuamanu, in the province of Tahuamanu;

They were declared in emergency for 60 days. In August of the same year, the measure had to be extended for 60 more days.

Huancavelica is also a region highly contaminated by mercury. In this region, the largest mercury mine in Peru operated. Therefore, Huancavelica is one of the largest environmental liabilities due to the exploitation of mercury that developed during the Colony. There are still areas in the city of Huancavelica where towns and neighborhoods have settled on the ground contaminated by mercury and those who live in those places breathe the mercury vapors that emanate from the land every day.

According to a report sent by the Ombudsman's Office to the General Directorate of Environmental Health and Food Safety of the Ministry of Health, the pollution situation in the city of Huancavelica is aggravated because half of the homes are adobe or tapial, materials that contain contaminated soil that comes from the local soil.

The Santa Bárbara mine, also known as the death mine, was the main mercury extraction center during the Colony.

An investigation carried out by the Council of Environmental Health - North American scientific organization that is dedicated to identify, evaluate and remedy the effects of environmental toxins in communities affected by these - indicates that 75% of the houses evaluated have mercury levels above the permissible values for human health, both in the walls as well as in the interior air, with an estimated projection of 19,000 people at risk of having adverse health effects due to exposure to said element "

The study also revealed that between 1564 and 1975, the city of Huancavelica and its surrounding areas were contaminated by an estimated 20,000 metric tons of mercury

vapor, most of it produced in the colonial period and used during the refining process. silver.

The Ombudsman's Office also indicated, through another document, that the General Directorate of Mining Environmental Affairs of the Ministry of Energy and Mines has identified 160 sites contaminated by mining in the region.

In Huancavelica it is confirmed that there is contamination by mercury in relation to the measurements that have been made in the population that is exposed to this substance both in their homes and in the non-paved public roads. Families are breathing mercury vapors but no measures are being taken to protect them.

As a palliative to the problem, the Ombudsman's Office proposes that the walls of houses built with adobe or rammed earth be covered with cement and that the same be done on the floors of these houses. In addition, it suggests paving streets to reduce the mercury vapors they emanate. There are studies that indicate that these measures reduce exposure to mercury by up to 40%. However, these are very poor families who often can not make these investments, so state intervention is needed, he said, adding that a series of recommendations has already been issued to the relevant institutions such as the ministries of health. Health; of the Environment; Housing, Construction and Sanitation; of Energy and Mines; and the Regional Government of Huancavelica, among others.

In 2000, a spill of metallic mercury that evaporated in the environment affected the health of more than a thousand farmers, who, eight years later, continue to suffer the consequences on their health. Modern mining does not guarantee adequate mechanisms for the management, control and mitigation of environmental impact and the public authority does not grant the right to health of populations in mining environments which, from the point of view of the right to environmental health, should be considered as sites. Since the beginning of the 1990s, Peru has undergone an accelerated process of investments in large-scale modern mining activities. The cutting-edge technology in mining involves the use of large quantities of chemical inputs such as cyanide, chlorine gas, ammonium nitrate and fuels that allow the extraction of microscopic gold from the Andes. However, the environmental problems of mining are not only associated with chemical substances and mine acid drainages (DAM), but also the mineralogical conformation of deposits that are not only rich in gold but also in mercury, which It is a highly toxic substance, as indicated by the evaluation carried out by the United Nations Environment Program (UNEP): It has several adverse effects, important and documented, on human health and the environment around the world Potentially dangerous to health.

In Cajamarca, located in the Andes of northern Peru, is the Yanacocha Mining, the largest gold mine in Latin America. On Friday, June 2 of the year 2000, a transport truck produced the spill of 151 kg of metallic mercury; More than a thousand peasants who did not know the toxic effects of mercury were affected by this accident.Several specialized studies consider that mercury is the non-radioactive element with the highest

toxicity and that it produces a great number of complications to human health. Until 2004 there was no law in Peru to regulate the transport of toxic substances, so the transfer of substances such as mercury was only subject to the self-regulation of the companies, such is the case of Minera Yanacocha SRL and its carrier RANSA, who did not adopt any security measure. The consequence was an accident that caused the contamination with mercury vapor, of more than a thousand people, most of them children. After more than eight years, the population continues to suffer the aftermath of what is considered the biggest global disaster with metallic mercury. At the beginning of 2008, due to the verification made by the General Directorate of Environmental Health (DIGESA) of the Ministry of Health (MINSA), of the presence of mercury in many of the homes in Choropampa, a commission of the Congress of the Republic opened an investigation to punish those responsible and demand that the authorities take measures to protect health. Meanwhile, the population continues to be exposed to the serious dangers of mercury vapor. The official version of the mining company is that the incident is "over.

In 2005, UNEP published an extensive document called the Global Mercury Assessment, which drew the attention of governments, industry and civil society to the dangers of mercury to health. The document begins by noting the considerable increase in mercury levels in the environment and warns of the various important and documented adverse effects on human health and the environment around the world.Mercury and its compounds are highly toxic, especially for the developing nervous system. The level of toxicity in humans and other organisms varies according to the chemical form, quantity, route of exposure and vulnerability of the exposed person.One of the most difficult problems to manage environmentally is the fact that Because it is an element, it can not be decomposed or degraded into harmless substances.During its cycle, mercury can change state and species, but its simplest form is elemental mercury, which is harmful to humans and the environment. Once released from minerals, or deposits of fossil fuels and minerals lying in the earth's crust, and emitted into the biosphere, mercury can be highly mobile and circulate between the earth's surface and the atmosphere. The surface soils of the earth, the waters and the bottom sediments are considered the main biospheric mercury deposits. Several studies indicate that the main route of exposure to elemental mercury is by inhalation of its vapors. About 80% of the inhaled vapors are absorbed by the lung tissues. This vapor also easily penetrates the blood barrier of the brain and its neurotoxicity is well documented. The intestinal absorption of elemental mercury is low.Elemental mercury can be oxidized in body tissues to the inorganic divalent form. Elemental mercury can be oxidized in body tissues to the inorganic divalent form. The total population affected by the mercury spill in Choropampa was by inhalation of mercury vapor, since the climatic conditions and the transfer of mercury to the homes that children basically made allowed the hot temperature of the place to vaporize the mercury in the atmosphere . Available studies indicate that mercury evaporates from the drops at a value of 5.8 μg / hour / cm3, being able to saturate the air with certain rapidity and exceed the average permissible concentration of 0.025 mg / m3,

recommended for occupational exposure by the American Conference of Governmental Industrial Hygiene (ACGIH).

The absorption of mercury vapor by the farmers produced various symptoms such as metallic taste in the mouth, respiratory problems, rash, as well as tremors, emotional lability, insomnia, memory loss, changes in the neuromuscular system, headaches,lumbar and joint pain, symptoms found in other populations exposed to mercury and that have also been reported in this case; A separate case is that of an obstetrician who worked at the local health post in Choropampa, to whom the serious damage led her to a permanent coma while her youngest daughter caused permanent kidne After more than eight years of the mercury spill in Choropampa, the population continues to report the existence of body tremor, insomnia, irritability of character, loss of memory, severe joint pain, intermittent rash, epistaxis or nosebleed, untimely fainting, appearance of cases of blindness and intense renal pains. The existence of all these symptoms has not led to an effective and timely intervention of the competent health authority, since the policy followed in the health sector for this case is that established by the official reports of one of the most powerful companies. mining companies, whose official version for the year 2001 is that the health problem due to mercury contamination was already somewhat exceeded.

Although the fear of the carcinogenicity of mercury circulates among the population, it should be noted that although high exposures have caused mortality, available studies maintain that ... as regards carcinogenicity, the general evaluation of the International Agency for Research Cancer concludes that metallic mercury and the inorganic mercury compounds are not classifiable as to carcinogenicity for humans.

Mercury in gold mining in Yanacocha

Frequently, the available literature mentions the contamination with mercury associated with the use made by artisanal miners to amalgamate the gold extracted from the veins. However, there is little information on the environmental impact on health due to mercury produced in the extraction of gold in modern mining.

Minera Yanacocha started gold production in September 1993, incredibly its environmental impact study (EIA) -the first done in Peru under the new environmental regulations promulgated in 1992- did not foresee the presence of mercury in the production process . In November of that same year, the presence of significant amounts of mercury was appreciated in the refinery where it appears as a condensate of the gases generated in the retorts, where the precipitate is subjected to 700 ° C. Because mercury is separated from gold in the refinery from the Merrill-Crowe process, mercury is not an input of gold production at the Yanacocha mine, but a byproduct of gold processing.

Although mining companies such as Yanacocha in Cajamarca provide very little information on the production and handling of mercury in their operations, the intervention in July 2000 of the World Bank Ombudsman, owner of 5% of the shares of this mine, allowed know that Mercury production has increased y damage.

uniform way in proportion to the production of gold. In Yanacocha it is estimated that that year produced four to five bottles of mercury per week, each of which had a capacity of approximately 200 kg. The year 1994 Yanacocha produced 3 639 kg, the year 1995: 13 394 kg, 1996: 13 088 kg; 1997: 11 238 kg; 1998: 19 195; 1999: 33 266; and it was projected for the year 2000: 48,000 kg, which is the last year for which there is more or less accessible information. The mercury produced was transported for sale to the city of Lima for more than 800 km and it is now known that the mercury is encapsulated In safety landfill to avoid transport risks, with the prior approval of the Ministry of Energy and Mines before its implementation

In Peru, environmental health problems related to mining have not deserved special attention from the health authority. Not only situations like those of Choropampa allow to see the deficiencies of intervention of the authority, but also the problems of occupational health in mining. Workers in modern mines such as Yanacocha are also exposed to pollution and the consequent damage to their health. An independent environmental audit imposed by the communities on the operations of the Yanacocha Minera in 2003 found that ... the workers have detectable and sometimes high levels of mercury in urine (greater than 50 μg / L) and warned of health risks. with low levels of mercury, as previously mentioned. In addition, the audit concluded by noting that the handling of mercury in the retorts plant is inadequate. The provisional storage of the element in inadequate and non-hermetic containers facilitates the evaporation of the mercury and therefore the diffusion of the same in the enclosure, which despite the use of personal protection equipment manages to be incorporated into the organism of the operators. For the rest, the audit stated that workers who handle mercury do not have sufficient clarity regarding the effects that exposure to this metal can cause on themselves.

The Mercury Spill Accident

The mercury spill affected more than a thousand peasants; most of them were children under the age of five who collected the mercury with their hands, without any protective equipment, since they did not know the toxicological effects of the striking substance that looked like "liquid silver". Like many industrial accidents, it was a disaster that could have been avoided if it had been adopted standard transport standards as was done, for example, in another large mining company such as Antamina, which in the absence of national legislation adopted international standards for bottling and transportation.

In the case of Yanacocha, the report of the World Bank Ombudsman showed that ... the mercury bottles that were sent from the mine had no signs indicating their content and the dangerous nature of the mine and that ... the Newmont Mining Corporation, as the main The company's parent and stockholder did not apply global norms to the handling and transportation of hazardous materials in its Yanacocha mine. For the rest, the management of the crisis that made the officials of the mining company was marked by the underestimation that even underestimated the amount of initial mercury spilled.

Dramatically, the aforementioned report admits that the mining company ... did not provide adequate or timely information about the event to the affected public, to the local authorities in the directly affected communities, to the provincial authorities in Cajamarca or to the national authorities in Lima. The recovery of the spilled mercury was not effective, according to the report No. 62 of the Ombudsman's Office, only 49.1 kg (39.5%) of the total spill (151 kg) were recovered.

The intervention of the personnel of the Ministry of Health was inefficient due to their inexperience in the toxicology of heavy metals and specifically of mercury, the lack of equipment and logistics to address a crisis that affected more than a thousand people and also due to the subordination in the that the health officials were in relation to the mining company, since both the Regional Director of Health and the Director of the Regional Hospital were, at that time, employees of the mining company.

The socioeconomic factors associated with the extreme poverty of the majority of the population also influenced the severity of the health effects after the mercury spill. According to data from the Office of Epidemiology and Management Information of the Regional Health Directorate of Cajamarca, more than 80% of the affected population is rural and 74.9% did not have any level of education or only had some degree of primary education

The lack of experience of the health personnel and the mining company to manage a massive acute mercury poisoning, also provided its quota for the aggravation of the health of the affected farmers. The Health Center of Choropampa had hardly any logistics to attend a few people / day and was quickly seen overwhelmed Chelating drugs such as penicillamine and dimercaprol were not available in the national market, so they had to be imported by the mining company from the United States and were applied to a population with nutritional deficiencies and culturally unaccustomed to hospital medical care and use of drugs. Given the logistic precariousness of the Regional Health Directorate (DIRESA), which did not have adequate mercury vapor measurement equipment, which were in the possession of the mining company, the DIRESA ended by signing an agreement whereby the company Minera was committed to training personnel, providing measurement equipment and monitoring the health of the people affected.

Although the mining company officially declared the year 2003 that:

The scientific report of the consultant Shepherd Miller concluded the following thing: The floors and the life in the zone of Choropampa do not have any type of pollution by mercury. The results of the samples of plants, insects, animals and soils show that the concentrations of mercury found are well below the normal limits of any of these living beings or soils in other areas. In the same way for the aquatic environment. The mercury never reached the tributaries of the Jequetepeque river basin and this is demonstrated in the results of the analysis of water samples, fish, crabs and aquatic microorganisms. Therefore, there is no risk of contamination or pollution in the areas where the mercury spill occurred in the year 2000. The report indicates that the cleanup activities were

successful and that there is no indication of risk of causing negative effects to the environment or to human health through diet.

However, the fact is that the report of the World Bank Ombudsman stated in its conclusions that ... it is anticipated that the impacts of the spill will continue to be felt in local communities long after the initial symptoms of mercurial poisoning have passed and the same In 2003, the environmental audit of INGETEC, financed by the mining company itself with UNOPS intermediation, insisted in its conclusions that the agreement by which Minera Yanacocha and DIRESA Cajamarca agreed to carry out epidemiological surveillance of those affected in Choropampa for two years, ... is not adequate because mercury could leave long-term sequelae that would require monitoring for 10 to 15 years, especially if children and pregnant or lactating mothers appear among those affected. This opinion was given considering that in various animal models it has been proven that mercury in the form of vapor can more easily penetrate the placenta than inorganic mercury, and once in the neurons it could remain there indefinitely; In children and children of exposed mothers, problems of learning and behavior depending on disturbances in neuronal development may appear as well as problems in other aspects of psychosomatic development, because the development of the nervous system of children continues until approximately 15 years of life .

Currently, the existence of hundreds of testimonies of residents who were exposed to mercury and the recent surveillance reports of DIGESA show that the health situation continues to be a problem that has not been overcome and that demands health care.

The current impact on the health of the population exposed to mercury

In March 2008, the Ministry of Health made an assessment on the environmental situation of several Choropampa homes. Report No. 188-2008-DGSP / DSS / MINSA, states that:

The existence or not of contamination in soils should be reassessed as a priority due to the fact that the remediation program applied by the Yanacocha SRL Company was not carried out in 2000, as well as a biological control of exposure to all the inhabitants of Choropampa and San Juan, according to the census. population to get up by the National and Regional level team. There are health problems in the inhabitants of both localities that are not currently being taken care of due to various factors: insufficient insurance coverage of the Pacific, lack of insurance for all the inhabitants, inadequate referral systems and patient referral, insufficient human resources, equipment in health centers and posts ... Of a total of 18 houses evaluated, seven were contaminated by elemental mercury with values higher than those established by EPA-1997, up to 0.3 ug / m3 (0.0003 mg / m3).

The person in charge of the Medical Center of Choropampa, currently explains that: ... The symptomatology is very common in the population, emphasizing that it is very similar in children, adults and the elderly, sui generis situation that does not occur in

other places. Common symptoms include: headache, paraesthesia (numbness of the body and tingling), musculoskeletal pain, pain and burning eyes.

The health situation of the population of Choropampa continues to be seriously affected by the mercury spill that occurred in 2000, in part because the mining company and the health authority refused to implement recommendations such as the INGETEC environmental audit that indicated: ... that it is convenient to verify, with a team of toxicologists and neurologists experts in the subject, the convenience of extending to at least ten years, the chemical and epidemiological evaluation of some sectors of the community affected by the Choropampa spill.

In the specific case of the treatment of the health condition of the peasants of Choropampa, the need to implement actions must be taken into account:

a) Investigate the responsibilities of the authorities that contributed interestedly to a mishandling of the crisis to overcome the impunity that opens the doors so that similar situations can be repeated

b) Strengthen the institutional capacity of health services for the management of cases of environmental contamination and damage to health due to the effect of chemical substances used in mining.

c) Carrying out an independent evaluation on the current health status of the population and studying the possibility of evacuating the affected population with a fair compensation program.

The General Civil Liability Policy Contract: covers damages to third parties whether material and / or personal derived from the operation of the mine. Environmental pollution is covered only if it is caused accidentally.

EASTERN REPUBLIC OF URUGUAY

Water contamination

Uruguay does not have a systematic, continuous and accessible survey on the quality of surface waters. Specific studies have been carried out, such as the Santa Lucia, Negro, Cuareim and Uruguay rivers, a systematic monitoring of water quality was carried out for about three years (2009 to 2011) and a follow-up is carried out on the coast to determine the "bathing". At the same time, the municipal governments, the UdelaR, IIBCE, private quality laboratories, the Mixed Technical Commission of SALTO, CARU, and some decentralized organizations such as the OSE carry out sampling and analysis of water with different objectives, but these efforts are not coordinated. nor are they systematized and easily accessible. This is perhaps one of the main aspects to be discussed in the country.

In the above-mentioned rivers they do not show a deterioration in specific aspects that were measured. The parameter "thermotolerant coliforms" (coliforms typical of the intestinal tract of human beings and vertebrate of warm blood with potential to produce diseases) was greater in stations close to population centers, both in the Negro River, and in the Cuareim River, Santa Lucía and Santa Lucia Chico. The fact that the standard value for thermotolerant coliforms is exceeded indicates a contamination of waters with a potential for transmission of diseases associated with pathogenic organisms present in fecal matter, which may affect health.

In the case of heavy metals, in the Negro River values were recorded above the standard, in the Baygorria reservoir and downstream, both for chromium and for mercury. Heavy metals in doses higher than those required become toxic, and can be transported in the aquatic trophic network, contaminating fish resources for human consumption. Likewise, the parameters such as zinc, turbidity, and biochemical oxygen demand (BOD) in the Cuareim River exceeded the standard values in specific samples; specifically at the station located downstream of the city of Artigas. In all cases, phosphorus records were found superior to the current standard established in decree 253/79 and amending ones, one of the main compounds that generate eutrophic states of water bodies.

Eutorization (evaluated period: 2007-2011)

Eutrophication is a general term used to describe symptoms suffered by aquatic ecosystems in response to fertilization with nutrients (such as phosphorus and nitrogen) (Conde 2009). That is why the concentration of phosphorus and nitrogen are used as indicators of eutrophication along with the concentration of chlorophyll and the transparency of water.

The main pressures that lead to eutrophication in Uruguay are the intensification of land use and the introduction of urban and industrial wastewater. There is also growing pressure related to the growing number of reservoirs.

Studies analyzing the effects of eutrophication indicate that there is a continued increase in eutrophication in Uruguay in most aquatic ecosystems that already had symptoms, with few cases that have undergone improvements. Also, the occurrence of blooms (overgrowth of microalgae), the main consequence of eutrophication, has become an increasingly common phenomenon in various bodies of water including natural lakes and artificial lakes throughout the country.

Blooms of microalgae, in particular of cyanobacteria, can be toxic (hepatotoxic, neurotoxic) for users and components of aquatic ecosystems, causing fish mortality, and poisoning or death of people.

Coastal area

In natural shallow lakes of the coast of Maldonado and Rocha have been signs of eutrophication, with consequent increase in turbidity and effects on biodiversity and water quality, favoring the development of potentially toxic blooms.

The Laguna de Rocha has increased its trophic status, and registers proliferations of aquatic plants and cyanobacteria. More markedly, Laguna del Sauce currently experiences problems of water quality due to eutrophication, which include the excessive growth of submerged and floating plants and, as of 2007, an increase in the occurrence of blooms of cyanobacteria. This has affected the purification costs and the development of other uses (fishing, recreation). The Laguna del Cisne, dammed for use as a source of drinking water, was already classified as eutrophic in the late 80's, but in the last two decades there has been a clear decrease in the area of the lagoon covered by aquatic plants, with a marked increase in phosphorus and can be classified as hypereutrophic.

Metropolitan area

In Montevideo there are several artificial lakes that are part of the recreational options of the population (Rivera Park, Rodó Park, Canteras Lake, among others), all with advanced eutrophication process, which results in poor water quality and problems for recreational uses. Most of the lakes of the Gold Coast and several of La Paz are eutrophic and frequently present great development of aquatic plants or blooms of cyanobacteria, including the development of organisms that produce cyanotoxins. The water quality of urban streams (Montevideo and Canelones) such as Pantanoso, Miguelete, Carrasco and Las Piedras is seriously affected near its mouth. Regarding the Santa Lucía River, although it is used as a source of drinking water for the metropolitan area of Montevideo, the state of its basin is one of the most critical in the country. Near its mouth, the concentration of nutrients has reached a high level due to entry of sources of agricultural pollution and domestic wastewater. The reservoirs of Paso Severino,

Canelón Grande have high concentrations of nutrients and are classified as hypereutrophic. The basins of the Canelón Chico, Carrasco, Colorado and Pando streams are strongly impacted, with ecosystems covered by aquatic plants, toxic or potentially toxic blooms, and very low levels of dissolved oxygen during the hot / dry period, which would be the cause of mass mortalities of fish, and even a mortality event of 37 calves at the Locality of Piedra Sola in January 2009.

Uruguay River - Río Negro - Río de la Plata

In the Uruguay River, since 2006, there has been a decrease in the concentration of nitrogen towards its mouth and a higher concentration of phosphorus. The occurrence of blooms of cyanobacteria, has increased in the middle Uruguay River and upstream of the Salto Grande dam, as well as upstream of Fray Bentos, caused the closure of a water intake in New Berlin in 2008. In The case of the reservoirs on the Río Negro has seen a continuous increase in total phosphorus accompanied by chlorophyll a from 2007 to 2009 in the reservoirs of Rincón del Bonete and Baygorria. Regarding water quality in the Río de la Plata, this is the final recipient of the organic and nutrient loads generated in the basin of rivers and streams that flow into it, and in the direct basins concentrated mainly by the cities of Buenos Aires and Montevideo. Almost half of the country's organic load is discharged into the Río de la Plata basin, by tributaries or by infiltration into the land. In Montevideo there has been an increase in the frequency of blooms of toxic cyanobacteria during the summer, however the concentration of chlorophyll a has remained in summer below the level suggested by the WHO for recreational waters.

The conclusions presented by the government organisms, affirm that the excess of nitrogen and phosphorus of the agronomic, domestic and industrial activities of the country generated the excessive growth of algae and algal toxins that diminish in oxygen present in the water and have as consequence the mortality of fishes.

Those responsible for the study recommend, above all, the implementation of continuous monitoring to prevent the situation from becoming an irreversible destruction of the country's natural resources. The untreated discharges of industries are of concern.
The General Environmental Law N ° 17283, establishes that the protection of the environment is of general interest, and that people must abstain from any act that causes depredation, destruction or serious contamination to the environment.

In its section on costs, the aforementioned rule makes mention of the Uruguayan Water Code, which establishes a defense strip on the banks of the Atlantic Ocean, the Río de la Plata, Río Uruguay and the Laguna Merín, to avoid modifications harmful to its configuration and structure.

In the insurance market, the Civil Liability Insurance, subject to the law, guarantees coverage for damages caused to third parties, exclusively as a result of the facts or circumstances provided and expressly detailed in the Particular Conditions.

ANNEX JURISPRUDENCE

ARGENTINIAN REPUBLIC

Judgment: MENDOZA Beatriz Silvia and Others C / ESTADO NACIONAL and Others S / Damages and Damages (damages derived from the environmental contamination of the Matanza River - Riachuelo). CSJN-Original competence. Environmental damage. Creek. Right to enjoy a healthy environment. Scope. Federal Competition according to Law 25,675. Origin of the original jurisdiction in the pretensions of prevention, recomposition and compensation of collective damage. Instrumental measures. Declaration of incompetence to hear at the original instance in the claim for compensation for individual damages. Precedents "Barreto" and "Zulema Galfetti". [20-JUNE-2006] M. 1569. XL. "MENDOZA Beatriz Silvia and Others C / ESTADO NACIONAL and Others S / Damages and Damages (damages derived from the environmental contamination of the Matanza River - Riachuelo)". Supreme Court: - I - Beatriz Silvia Mendoza and other actors, all with domicile in the Federal Capital and the Province of Buenos Aires, file a lawsuit against the National State (National Executive Power), against the Province of Buenos Aires, against the Government of the City of Buenos Aires and against forty-four (44) companies that develop their industrial activity in the vicinity of the Matanza-Riachuelo Water Basin, in order to obtain compensation for the damages suffered as a result of the environmental contamination of said river. They hold the National State responsible for the situation denounced on a navigable and interjurisdictional road (covering part of the Federal Capital and eleven parties of the Province of Buenos Aires), with respect to which it has regulatory and control powers, under provided in Article 75, incs. 10 and 13 of the National Constitution. They attribute responsibility to the Province of Buenos Aires for having the original domain over the natural resources existing in their territory, in accordance with the provisions of Articles 121 and 124 of the Basic Law. The Autonomous City of Buenos Aires is also held responsible in its character of corribereña del Riachuelo, which constitutes, in the area of its jurisdiction, a good of its public domain and, in addition, being obliged to use its waters and the water fairly and reasonably. rest of the natural resources of the river, its bed and subsoil, without causing sensible damage to the other coripereños, for having its jurisdiction over all the insular formations bordering its coasts, with the scope allowed by the Treaty of Río de la Plata and because It corresponds to preserve the flora and fauna of its ecosystem, as a natural reserve, as indicated in Article 8 of the local Constitution. They address their claim jointly against all these co-defendants, for not having complied with the environmental provisions in force, since they diverted specific funds - a loan granted by the Inter-American Development Bank, through Decree No. 145/98, for the "Management Program Environmental and Management of the Matanza-Riachuelo Water Basin "-, towards objectives unrelated to the solution of the environmental problem denounced and for not exercising its control faculties and implementing appropriate preventive policies in this regard. Likewise, they indicate that they demand neighboring companies to dump hazardous waste directly into the river, for not building treatment plants, for not

adopting new technologies and for not minimizing the risks of their productive activity. They propose as an innovative and / or self-satisfying precautionary measure the creation of a "Fund of Environmental Assistance and Remediation "or" Environmental Compensation Fund ", of an autonomous nature and of subrogation, through the direct affectation of resources of the National State, the Province of Buenos Aires and the City of Buenos Aires, in their capacity as co-authors jointly and severally liable, in accordance with Article 34 of General Law No. 25,675 of the Environment, in turn, request an annotation of litigation in the records of the General Inspection of Justice and the Public Registry of Commerce of the respective jurisdictions and in the Book of Shareholders of each of the co-defendant companies, in order to ensure the collection of compensation in the event of being responsible, the return actions by the Fund, the payment of the Evaluation and Examination Fees and the fines that may correspond They also request that the PEN (Executing Committee of the Environmental Management and Management Plan of the Matanza-Riachuelo Hydrological Basin) be ordered to resumption and continuation until the completion of the Management Plan and that peremptory deadlines are established for it, through the Ministry of Health, and other health agencies of the different jurisdictions involved, to plan the realization of an updated survey of environmental toxic impacts on the population of the basin, in order to detect diseases and / or pathologies that have a direct relationship with the contamination of the basin and that their immediate medical attention is available. To fs. 109 and 113 vta., Is seen, by the competition, this Public Ministry. - II - First of all, it should be noted that one of the cases in which the original jurisdiction of the Court arises if a Province is a party, according to Article 117 of the National Constitution, is when the action taken is based directly and exclusively on prescriptions constitutional acts of a national nature, in laws of Congress or in treaties with foreign nations, in such a way that the federal question is the predominant one in the case (Judgments: 311: 1812 and 2154; 313: 98 and 548; 315: 448; 318 : 992 and 2457; 322: 1470; 323: 2380 and 3279). In the sub-lite, according to the terms of the complaint -whose exposition of the facts must be addressed in a principal way to determine the competence, in accordance with Article 4 of the National Civil and Commercial Procedure Code-, the The actors seek compensation as a result of the damages and losses suffered, holding the National Government, the Province of Buenos Aires and the Autonomous City of Buenos Aires responsible for the breach of their duty of preservation and environmental protection, considering that they contributed , either by its action or omission, to the industrial pollution of the Matanza - Riachuelo Basin, an issue that, in my view, has a clear federal character, since an interjurisdictional environmental resource is affected. So I think, in as much the Article 7º, second paragraph, of the Law Nº 25,675, of National Environmental Policy, establishes that "In the cases that the act, omission or situation generated causes effectively degradation or contamination in interjurisdictional environmental resources, the competition will be federal "and Law No. 25.688, of the Environmental Water Management Regime, in its Article 6, points out that in order to use the waters subject to the law, it must have the permission of the competent authority and that" In the case of interjurisdiccionales basins, when the environmental impact on any of the other jurisdictions, is significant, it will be binding the approval of such use

by the corresponding Basin Committee, which will be empowered for this act by the different jurisdictions that comprise it. In view of the above, since a Province is a party in a case of manifest federal content, I consider that - whatever the neighborhood or nationality of the actors (Judgments: 317: 473; 318: 30 and its citations and 323: 1716, among others) - the process corresponds to the original jurisdiction of the Court. In addition, it is possible to highlight that this competence also comes ratione personae when a Province is sued jointly with the National State. This is so, in order to reconcile the provisions of Article 117 of the Constitution with respect to the provinces, with the jurisdictional prerogative that assists the Nation to the federal jurisdiction, on the basis of the provisions of Article 116 of the Law Fundamental (Judgments: 311: 489 and 2725; 312: 389 and 1875; 313: 98 and 551; 317: 746; 320: 2567; 323: 702 and 1110, among others). For all the above, I believe that the case must be processed before the courts. Buenos Aires, December 20, 2004 Ricardo O. Bausset Buenos Aires, June 20, 2006. Cars and Views; Considering: 1 °) That a fs. 14/108 the seventeen people are presented who are individualized in point 1 of that writing, exercising their own rights, and some of them also on behalf of their minor children, and initiate a lawsuit against the National State, the Province of Buenos Aires, the Government of the Autonomous City of Buenos Aires and the forty-four companies indicated therein, for the damages that, they claim, have been caused to them, and accumulate to said action the claim that the defendants be sentenced in order to end and recompose the situation they denounce. 2) That the plaintiffs report that the Matanza - Riachuelo river basin has a population of 3,000,000 inhabitants, and includes part of the Federal Capital and eleven parties of the Province of Buenos Aires. They indicate that from the environmental point of view the most critical areas of the basin are the port of the Riachuelo and the highly industrialized one along the river, from its mouth to the vicinity of Villa Diamante and Fiorito. They detail the different sections in which it can be divided and point out that the one that is individualized - according to various studies carried out - as Section II, and that originates from the mouths of the Cañuelas and Chacón streams, is the recipient of important industrial effluents with treatment inadequate or non-existent. They indicate that from there their quality drops sharply, becoming at the height of the Santa Catalina stream in a watercourse that, they denounce, "resembles a sewage liquid in anaerobic conditions." They point out that among the sources of pollution of the river, the industries stand out, which in most cases discharge the liquids they use, with toxic and dangerous solid waste, without purification to the river and to the soil. The companies that develop these activities, they claim, show a technological stagnation and a poor environmental state. They state that the river in its middle part is heavily polluted, but in its lower part and port area it is highly contaminated, since it contains a very high degree of heavy metals and organic compounds, with a strong presence of total hydrocarbons and "organochlorinated" pesticides. To all this is added the lack of sewage systems and the consequent slope in the river of the corresponding waste, as well as waste of all kinds from inadequate landfills. Such a state of affairs, as highlighted in the initial brief, has also led to the existence of a large number of potentially contaminated land, with an impact on ground and surface water, and on soils. 3) That in the initial writing, and in order to specify what the items are and how

much is their claim for the compensation of the damages caused as a result of the contamination, the actors are divided into two large groups. The first of them includes the people who live in the settlement, which they call "Villa Inflamable", located in Dock Sud, in the district of Avellaneda, Province of Buenos Aires; and the second, to those who identify as affected neighbors who would have in common the characteristic of performing as professionals, whether doctors, psychologists, dentists, nurses, in the Hospital Interzonal de Agudos Pedro Fiorito in the city of Avellaneda, and who are domiciled, as reported in cars, in Wilde, Avellaneda, Villa Domínico, and Federal Capital in the neighborhood of "La Boca". The compensation sought seeks to repair the supervening disability alleged, the costs for medical treatment, expenses for new filing in the cases that specifically indicate, moral damage, psychological damage suffered by mothers and fathers and their children, future damage -comprehensive of the expenses that will have to be made, as they maintain, to free children from the pollution they carry in their bodies-, and the loss of the locative value of the properties they inhabit, depending on the case. The total claim amounts to the date of filing the claim to the sum of 5,161,500 pesos. 4) That other claims that are embodied in the lawsuit are the interest that compensates the damage infringed to the environment and the recomposition of it. To this end, it is stated that, according to its position, Article 27 of Law No. 25,675 differentiates environmental damage per se from harm to individuals through the environment; and that, consequently, the judge must merit the damages perpetrated and adopt the measures, which they also request, taking into account whether the environmental damage caused is irreversible or not. From this distinction they draw various consequences, such as, in the case of collective assets whose situation can be reversed, compensation is set to create a common fund of recomposition, or equity of affectation, to cover the expenses that the anthropic mechanisms of ecosystem recomposition, which should contribute to sustain the costs of restoration actions that lead to minimize the damage generated. Propose to the Tribunal's consideration that this "public fund" pursue among its objectives to take care of the environment, ensure its protection and restoration in favor of the beneficiary of the trust that is the general public, and contribute to sustain the costs of the actions of the restoration that can minimize the damage generated. They require the former to be integrated with public and private funds, the latter coming from the rates imposed on the defendants, without prejudice to the corresponding right of return against the contaminating agent subject in case it can be identified. As for the irreversibly damaged property, they require compensation for collective moral damage to be set to repair the reduction in the enjoyment that the community obtained from the damaged property, through compensation that the Court must establish given the lagoon existing legislation, and that will not have a particular beneficiary but the entire neighborhood community. The interested parties ask the Court that, once the fund is set up, its administration will not be in charge of the defendant states, since, as they state, they have omitted to protect the collective good and in this way have contributed to the affectation for which they claim. 5) That the actors attribute to the environmental damage that they denounce special particularities and, in their merit, require that in the sub lite the procedural provisions be relaxed, as long as the guarantee of the defense in trial and due process is not violated,

requiring the Court to have an active participation, and not to generate a long process file that, according to the doctrinal positions they cite, does not serve the victim, the community, or those who would have caused the damage they denounce . In this framework, and on the basis of considering that the environmental impact is intolerable and that it may be irreversible, they request that different precautionary measures be issued, to which effect they maintain that it is "obvious to say that the urgency to avoid polluting activity of the environment and its direct impact on the health of the actors and the population in general converge in the case to give motivation and sufficient basis to the innovative and / or self-satisfying measure that is requested based on that high probability of the right " and they add that since actions related to the sanitation of the basin have not been foreseen at present, there is the "eloquent possibility" that if the insuring measures they request are not taken, the situation of the actors and the environment will worsen, and there is a risk that those who are ultimately individualized as polluting agents alter their assets or request their assistance (see page 98). The requirement made in this regard can be synthesized in: a) the creation of a public fund, which has in its time to repair the damage caused to the victims, and during the substantiation of the process to carry out actions that seek to modify the reported situation; b) the request to the National Executive Power to resume and continue until its completion the Environmental Management Plan for the Matanza - Riachuelo Water Basin; c) the implementation of measures in order to provide immediate attention to the health of the riparian population of the basin; d) the annotation of litigation in the General Inspection of Justice, in the Public Registry of Commerce and in the Books of Shareholders of each of the co-defendant companies. 6) That in this stage of the case it is for the Tribunal to delimit the claims with precision in order to order the process, and for this purpose, two groups must be distinguished. The first claim refers to compensation for the injury of individual assets, whose legitimated assets are the persons detailed in the first recital, and who claim compensation for damages to persons and property they suffer as an indirect consequence of the aggression to the environment (point 6. pages 56/75). The second aim is to defend the good of collective incidence, shaped by the environment (pp. 75/76). In this case the actors claim as extraordinary legitimates (National Constitution, Articles 41, 43, and 30 of Law No. 25,675) for the protection of a collective good, which by its legal nature, is commonly used, indivisible and is protected in a manner not available to the parties, since prevention first corresponds, then recomposition and, in the absence of any possibility, will give rise to compensation (Article 28, law cited). In the present case and as the claim was filed, the accumulation of attempted claims is inadmissible in this original jurisdiction of the Supreme Court, since the proper weighting of the respective nature and object shows that not all of them correspond to the original jurisdiction provided for in Article 117 of the National Constitution. 7) That the clause incorporated by the 1994 reform in Article 41 of the National Constitution, located in a new chapter of the dogmatic part called "New Rights and Guarantees" states that "All inhabitants enjoy the right to a healthy environment , balanced, suitable for human development and for productive activities to meet present needs without compromising those of future generations, and have the duty to preserve it.The environmental damage will generate

priority the obligation to recompose, as established by law. The recognition of the constitutional status of the right to enjoy a healthy environment, as well as the express and typical forecast related to the obligation of recomposing environmental damage do not constitute a mere expression of good and desirable purposes for generations of the future, subject to its effectiveness to a discretional power of the public, federal or provincial powers, but the precise and positive decision of the constituent of 1994 to enumerate and hierarchize with supreme rank a pre-existing right, that in front of the supremacy established in Article 31 of the National Constitution and the powers ruled in Article 116 of this Basic Law for federal jurisdiction, support the intervention of this jurisdiction of exceptional nature for matters in which the affectation extends beyond one of the federated states and the guardianship provided for by the Magna Carta From this premise structural, then, is that Article 7 of Law No. 25,675 provides for federal jurisdiction when it comes to the degradation or contamination of interjurisdictional environmental resources, a hypothesis that is verified in the sub lite to the extent that, on the one hand, they are involved more than one state jurisdiction; and in that, on the other, two of the promoted claims have in view that competitive attribution budget -the degradation or contamination of environmental resources- by pursuing the recomposition and compensation of collective incidence damage, which is the only regulated and achieved by this special statute (Article 27, cited law, case C.1732.XL "General Confederation of Labor (CGT - Board of Directors of the CGT, Regional Santiago del Estero c / Tucumán, Province of and other (National State) s / shelter ", judgment of September 20, 2005.) In the conditions expressed, the federal nature of the matter and the need to reconcile the privilege to the federal jurisdiction that corresponds to the National State, with the condition of gaining to this original jurisdiction on behalf of the Provincial State, the only solution that satisfies these jurisdictional prerogatives is to declare the original jurisdiction of the Court that provides for Article 117 of the Constitution Nation al with respect to the claims contained in point 7 of the application brief. 8) That this statement, on the other hand, does not extend to the claim that has for its object the indemnification of the individual damages that the plaintiffs claim to suffer in their patrimonial and extra-patrimonial rights. In effect, on the one hand, in matters of this nature, the presence of an issue that corresponds to federal jurisdiction must be ruled out by reason of the matter (conf matter cause V.930.XLI. "Verga, Ángela and others c / TAGSA SA and others s / damages ", sentence of the date of the date). Having rejected that hypothesis, it should be recalled that in the pronouncements issued by this Court in cases B.2303.XL "Barreto, Alberto Damián and other v. Buenos Aires, Province of and other s / damages", C.4500.XLI "Contreras, Carlos Walter v. Buenos Aires, Province of s / damages" and "Zulema Galfetti de Chalbaud e Hijos Sociedad de Hecho c / Santa Fe, Province of s / damages", of March 21, 18 April and May 9, 2006, respectively, this Court has had the opportunity to define a new outline of the concept of civil case - for the purposes of determining the original jurisdiction of this Court by reason of the different neighborhood or of aliens - limiting it to those disputes governed exclusively by rules and principles of private law, both as regards the legal relationship in question and in the examination of the concurrence of each one of the budgets of the patrimonial responsibility ventilated and, where appropriate, and n

the determination and valuation of compensable damage. 9) That with particular reference to the damages caused by the breach by a provincial State of the attributions arising from the exercise of its police power over public property and public security matters, the Court affirmed in case A .820.XXXIX "Aguilar, Patricia Marcela v. Rey and other (Province of Buenos Aires)", judgment of May 30, 2006, that the procedural claim subsumes the case, then, in a case of extracontractual liability of the local State for the consequences of his omission behavior, with indifference that the duty to answer that is imputed is qualified in the presumed "lack of service" in which an organ of the province sued for the irregular fulfillment of the state functions that are his own based on Article 1112 and concordants of the Civil Code (doctrine of the concurring vote in Judgments: 314: 661); or as the holder of title of a public good of the provincial State for the use and enjoyment of individuals, based on Articles 2340, inc. 7, and 1113 of the Civil Code (Judgments: 292: 597; 315: 2834; 317: 144; 327: 2764, considering 4th, or in any case, that is based on the omission or deficient exercise of the power of security police (Judgments: 312: 2138 and his appointment; 313: 1636; 323: 305, considering 3 °; 323: 318; 326: 750, opinion of the Prosecutor Prosecutor subrogation to whose foundations this Court sent, 327: 2764, among others). 10) That it is, therefore, whatever the basis of state responsibility that is invoked, of an injury attributed to the inactivity or omission of the provincial State when it weighs on it the obligation to act in imperative exercise of police power understood -in the context that is here under study- as a "public authority" characteristic of the rule of law tending to the protection of the life and physical and patrimonial integrity of individuals. 11) That with such understanding, there is no verification in the sub lite of the civil cause required by Article 24, inc. 1, decree-law 1285/58 to give rise to the original jurisdiction of this Court ruled by Article 117 of the National Constitution, when a province is sued by a foreigner or by neighbors of another province. The conclusion reached does not prevent the circumstance that in these proceedings the claim includes taxpayers, also, the National State and the city of Buenos Aires, as the federal privilege of the first is satisfied with the intervention of the lower courts of the Nation (Article 116 of the National Constitution, Articles 2, paragraph 6, and 12, Law No. 48, Article 111, paragraph 5, Law No. 1,893); and as for the second, because according to the doctrine established in the precedents of Fallos: 322: 2859, 323: 1199 and 323: 3991 is not an Argentine province and, consequently, does not correspond to the original instance of the Court. This is so because the members of the Court that sign this decision consider that the case of the original jurisdiction of this Court recognized from the case "Celina Centurión de Vedoya v. Province of Misiones", sentence of April 7, 1983, registered, should be abandoned. in Failures: 305: 441. Reasons of institutional significance such as those that gave rise to the precedents I.349.XXXIX "Itzcovich, Mabel c / ANSeS s / readjustments varios", in which the unconstitutionality of the ordinary remedy contemplated in Article 19 of Law No. 24,463 was declared, and B.2303.XL "Barreto, Alberto Damián and other c / Buenos Aires, Province of and other s / damages", judgments of March 29, 2005 and March 21, 2006, justify for situations like this one that This Court uses a rigorous hermeneutical criterion of the assumptions that give rise to its original competence and, in this way, carry out a deepening of its firm and

emphatic decision destined to preserve its limited human and material resources for the faithful exercise of its jurisdiction constitutional and, from this structural premise, leave aside all those assumptions in which under the protection of an interpretative rule different from the enunciation or to enthrone principles infraconstituci On the basis of the unequivocal character of exception and restricted that Article 117 of the National Constitution imposes, an intervention was assumed that corresponds to be declined. 12) That in situations such as the one dealt with in the sub-lite and in the precedent of the year 1983 from which the present departs, it is not in dispute that none of the four parties is gauged before the original jurisdiction of the Tribunal, under the terms expressed. A province, an autonomous city and the National State are sued by people who are neighbors of another state - and in some cases of the same province - who demand compensation for damages that they would have suffered in their persons and in their property individually, in a case that is not of a civil nature, as expressed in recitals 9, 10 and 11, nor predominantly federal, unlike that described by the subject in recital 8. Had they been summoned by the plaintiffs in an autonomous manner, neither these nor any of them would have been entitled to air this matter before the original jurisdiction contemplated in the Article. 117 of the National Constitution, since none of the six situations that, based on the doctrine of the Court, provides for that provision is verified. If all this is unquestionably so, for the people and for the matter, there are not sufficient reasons for the Court to take action on the basis of a subjective accumulation of claims such as that promoted by the plaintiffs, in the exercise of a discretionary power by which, by means of a respectable procedural strategy, have chosen to group in a single process all the states that consider common responsibility for the damages whose compensation they pursue and, in this way, generate a supposition of original competence. 13) That, as has been emphasized in the aforementioned precedents to recall a classic expression used by the court from the "Eduardo Sojo" case of September 22, 1887 (Judgment: 32: 120) to the most recent pronouncements, the constitutional root of the competence in question impede insuperably the recognition that can be extended by person or power, this formulation would be a vain rhetorical resource devoid of substance if it were accepted that some people, the victims, by using a recognized and useful procedural instrument such as passive litigation or the forced action of third parties, have under their exclusive power, under their sole and only discretion, generate a jurisdiction of exception that they would never have obtained by having separately sued each of the state agencies accused as responsible , since none of them is restricted to this exclusively constitutional platform for matters in that matters such as those that give rise to these compensatory claims are controverted. 14) That this Court does not ignore or obscure the consequences that derive from institutes of a procedural nature of proven effectiveness such as those concerning litigation, the intervention of third parties and, in general, processes with a plurality of legitimized parties in order to extend the effects of the sentences that are dictated. But so important and defensible reasons of procedural economy that aim to avoid the duplication of lawsuits and, in certain cases, the legal scandal, vanish from its matrix when they claim to sustain an argumentative development of infraconstitutional source to circumvent a clear restriction that recognizes its origin in the Fundamental Law (Failures: 189: 121 and its appointment),

with the striking conclusion, corresponding to the mathematical theorems before a science of law, than by a formula of reasoning that when adding three negative elements -for lack in itself alone of aptitude to obtain a result such as the claims individually deducted against each of the three non-gauged states- obtains a positive result. And it must not be forgotten that an examination like the one that has been carried out, in addition to standing on the rigor of logical reasoning, aims to maintain the rationality of the agenda of cases that this Court must examine and sentence as well as not hinder the responsible exercise of the constitutional powers that the Supreme Law has entrusted to this Body in the matters that correspond to its most eminent jurisdiction, as final interpreter of that, as the ultimate guardian of the superior guarantees of the persons and as a participant in the process republican of government. 15) That, for the rest, two other compelling reasons that authorize the exclusion of cases such as the present, and analogous argument construction beyond the procedural path followed, of the original jurisdiction of the Court should not be ignored. On the one hand, that preserves the due coherence with another situation in which, despite the substantial similarity that it maintained with the present, the Court - on the other hand - kept its decision of not intervening unchanged and continued to inhibit knowing, which is the one in which an active litigation is verified by suing a province and in which, with support in Article 10 of Law No. 48, it was always demanded, and it continued to be done since 1983, the different neighborhood or alienation of all the litisconsortes, in spite of the fact that the important and good reasons of procedural economy, of preserving the unity of the cause and of avoiding the legal scandal were verified with equal scope and risk in this kind of processes. On the other, and still more importantly, this will prevent the Tribunal from meddling in issues that do not constitute a civil case but -in numerous cases- of local public law in the terms indicated, preserving for the states provincials the knowledge of matters of that nature and, with this understanding, the faithful respect of their local autonomies that assures them the federal system adopted by our National Constitution. 16) That under the conditions expressed, the subjective accumulation postulated in the application does not constitute any of the cases that Article 117 of the National Constitution attributes to the original and exclusive jurisdiction of this Court, so that individual claims of this nature must be reformulated by the plaintiffs before the courts that are competent; whose determination will arise according to which the National State is sued, who only has to litigate before the federal jurisdiction (Article 116 of the National Constitution, Law No. 48, Articles 2, sections 6, and 12, Law No. 1893, Article 111 , subsection 5, or to the Provincial State which, in this matter - which deals with aspects of provincial public law - can only be sued, in accordance with the provisions of Articles 121, 122 and 124 of the National Constitution, before its own local courts (Judgments: 318: 992) The duplicity of actions that will give rise to the return to this traditional criterion of the Court or the possibility that in the case of several lawsuits contradictory resolutions, has been wisely anticipated, considered and defined by this Court in the cited precedent of Judgments: 189: 121, underlining that those circumstances are not cause enough to alter the rules of jurisdiction since that inconvenience derives from the regime in constitutional adopted by the same Constitution, which makes possible that diversity of pronouncement. There is no doubt,

then, that the undisputed constitutional roots of the original and exclusive jurisdiction of this Court prevent the extension of its rigid content based on functional procedural rules, which even cede in certain cases at the will of the legislator (Article 188, sections 1 to 4 of the Civil and Commercial Procedure Code of the Nation). 17) That beyond what has been stated, it should be noted with respect to this claim that, although, eventually, they could be classified as homogeneous individual interests, because there could be only one wrongful act that causes differentiated injuries to the petitioners, this does not arise from the demand, insofar as, on the contrary, it mentions different cases of causation. On the other hand, the demand does not contain a precise description that allows to relate the causal link that would exist between the damage suffered by each one of the actors and each one of the sued companies and neither is there an adequate description of the degrees of disability of each one. of the plaintiffs, as well as of the entity of the injuries suffered in their patrimonies as well as in their persons; all this hinders its accumulation in a single process. 18) That by virtue of what has been expressed, the present case will have as its exclusive object the protection of the collective good. In this regard, the prevention of future damage has an absolute priority, since -according to what is alleged- in the present it is about continuing acts that will continue to produce contamination. Secondly, the recomposition of the environmental pollution already caused according to the mechanisms that the law foresees must be pursued, and finally, in the case of irreversible damages, it will be compensation. The protection of the environment matters the fulfillment of the duties that each of the citizens have regarding the care of the rivers, of the diversity of the flora and fauna, of the adjoining soils, of the atmosphere. These duties are the correlate that those same citizens have to enjoy a healthy environment, for themselves and for future generations, because the damage that an individual causes to the collective good is causing it to itself. The improvement or degradation of the environment benefits or harms the entire population, because it is a good that belongs to the social and transindividual sphere, and from there derives the particular energy with which the judges must act to make these constitutional mandates effective. 19) That for the prosecution of these procedural objects, the adequate information does not exist, since the claim does not illustrate to the court essential aspects on the litigious issue. The introductory letter is also not based on updated studies, since it refers to journalistic publications or reports submitted by various agencies several years ago. Regarding the good that the demand calls "reversible", the creation of a public fund that amounts to at least five hundred million dollars is intended, to attend to the recomposition of the environment and the satisfaction of indemnities. However, there is no serious element to support this decision on the part of this Supreme Court. As for the good that it calls "irreversible", the plaintiffs request the payment of a sum of money for collective moral damage. It is intended to give a satisfactory purpose and a work is requested that implies an enjoyment for the community, but no element is provided to identify what would be that work and what its benefits would be. 20) That in accordance with what has been expressed in the previous recitals, it is appropriate to make use of the powers of instruction and instruction that the law confers upon the Court (Article 32, Law No. 25,675), in order to effectively protect the general interest. Therefore, it is resolved: I.

Not to make room for the objective accumulation of claims according to the scope specified in recital 6. II. Declare the original jurisdiction of the Court with respect to the claims concerning the prevention, recomposition and compensation of collective damage identified in point 7 of the statement of claim. III. Declare the incompetence of this Court to hear in its original instance with respect to the claim for compensation for the individual damages claimed in point 6. of the application brief. IV. Require the defendant companies to report on the following points within a period of thirty days: 1. Liquids thrown into the river, its volume, quantity and description. 2. If there are waste treatment systems; 3. If they have insurances contracted under the terms of Article 22 of Law No. 25,675. (Article 22: Any natural or legal person, public or private, that carries out risky activities for the environment, the ecosystems and their constituent elements, must contract a coverage insurance with sufficient entity to guarantee the financing of the recomposition of the damage that in its can produce, also, depending on the case and possibilities, you can integrate an environmental restoration fund that enables the implementation of remedial actions. "V. Require the National State, the Province of Buenos Aires, the city of Buenos Aires and the Cofema so that within a period of thirty days and under the terms of Law No. 25,675: Presenten an integrated plan (Article 5: The different levels of government will integrate in all its decisions and activities environmental forecasts, tending to ensure the compliance with the principles enunciated in the present law "based on the principle of progressivity (Article 4) which provides that Environmental objectives must be achieved gradually, through interim and final goals projected in a time schedule. Said plan must contemplate: 1. An environmental order of the territory (Articles 8, 9 and 10). 2. Control over the development of anthropic activities (Article 10) "taking into account the political, physical, social, technological, cultural, economic, legal and That this excludes the character of a substantial part of the defendant states in this aspect of the claim, which determines that the latter is alien to the original jurisdiction of the Court (Judgments: 316: 604, among many others). 10) That by virtue of what has been expressed, the present case will have as an exclusive object the protection of the collective good. In this regard, the prevention of future damage has an absolute priority, since -according to what is alleged- in the present it is about continuing acts that will continue to produce contamination. Secondly, the recomposition of the environmental pollution already caused according to the mechanisms that the law foresees must be pursued, and finally, in the case of irreversible damages, it will be compensation. The protection of the environment matters the fulfillment of the duties that each of the citizens have regarding the care of the rivers, of the diversity of the flora and fauna, of the adjoining soils, of the atmosphere. These duties are the correlate that those same citizens have to enjoy a healthy environment, for themselves and for future generations, because the damage that an individual causes to the collective good is causing it to itself. The improvement or degradation of the environment benefits or harms the entire population, because it is a good that belongs to the social and transindividual sphere, and from there derives the particular energy with which the judges must act to make these constitutional mandates effective. 11) That for the prosecution of these procedural objects, there is no adequate information, since the lawsuit does not inform the court of essential aspects of the

litigious issue. The introductory letter is also not based on updated studies, since it refers to journalistic publications or reports submitted by various agencies several years ago. Regarding the good that the demand calls "reversible", the creation of a public fund that amounts to at least five hundred million dollars is intended, to attend to the recomposition of the environment and the satisfaction of indemnities. However, there is no serious element to support this decision on the part of this Supreme Court. As for the good that it calls "irreversible", the plaintiffs request the payment of a sum of money for collective moral damage. It is intended to give a satisfactory purpose and a work is requested that implies an enjoyment for the community, but no element is provided to identify what would be that work and what its benefits would be. 12) That in accordance with the above recitals, it is appropriate to make use of the powers of instruction and instruction that the law confers upon the Court (Article 32, Law No. 25,675), in order to effectively protect the general interest. Therefore, it is resolved: I. Not to make room for the objective accumulation of claims according to the scope specified in recital 6. II. Declare the original jurisdiction of the Court with respect to the claims concerning the prevention, recomposition and compensation of collective damage identified in point 7 of the statement of claim. III. Declare the incompetence of this Court to hear in its original instance with respect to the claim for compensation for the individual damages claimed in point 6. of the application brief. IV. Require the defendant companies to report on the following points within a period of thirty days: 1. Liquids thrown into the river, its volume, quantity and description. 2. If there are waste treatment systems; 3. If they have insurances contracted under the terms of Article 22 of Law No. 25,675. (Article 22: Any natural or legal person, public or private, that carries out risky activities for the environment, the ecosystems and their constituent elements, must contract a coverage insurance with sufficient entity to guarantee the financing of the recomposition of the damage that in its can produce, also, depending on the case and possibilities, you can integrate an environmental restoration fund that enables the implementation of actions of reparation. "V. Require the National State, the Province of Buenos Aires, the city of Buenos Aires and the Cofema so that within a period of thirty days and under the terms of Law No. 25,675: Presenten an integrated plan (Article 5: The different levels of government will integrate in all their decisions and activities environmental forecasts, tending to ensure compliance with the principles enunciated in the present law "based on the principle of progressivity (Article 4) which provides that the objectives should be achieved gradually, through interim and final goals projected in a time schedule, which should include: 1. An environmental order of the territory (Articles 8, 9 and 10) 2. Control over the development of anthropic activities (Article 10) "taking into account the political, physical, social, technological, cultural, economic, legal and ecological aspects of the local reality, Onal and national, should ensure the environmentally appropriate use of environmental resources, enable maximum production and use of different ecosystems, ensure minimum degradation and waste and promote social participation in the fundamental decisions of sustainable development. 3. Environmental impact study of the forty-four companies involved, and if they did not have them, they will be required immediately. 4. An environmental education program (Article 14: Environmental education is the basic instrument to generate in citizens,

values, behaviors and attitudes that are consistent with a balanced environment, favoring the preservation of natural resources and their sustainable use, and improve the quality of life of the population). 5. A program of public environmental information to all who require it, especially the citizens of the territorial area involved (Article 16: "Individuals and legal entities, public or private, must provide information that is related to environmental quality and referred to To the activities that they develop, every inhabitant will be able to obtain from the authorities the environmental information that they administer and that is not legally contemplated as reserved. "(Article 18:" The authorities will be responsible for reporting on the state of the environment and the possible effects that The Executive Power, through the competent agencies, will prepare an annual report on the environmental situation of the country that will be submitted to the National Congress, which will contain an analysis and evaluation of the state of environmental sustainability in the ecological, economic or, social and cultural throughout the national territory. " SAW. Convene a public hearing to be held at the seat of this Court on September 5, 2006 at eleven o'clock, in which the parties must inform the Court orally and publicly about the content of the request in the previous point. VII. Let the plaintiff know that he must provide the requested information, within thirty days, with the requested information according to the scope established in recital 11. VIII. Defer until the indicated collection and the holding of the hearing are fulfilled, the treatment and decision of the precautionary measures required. IX. Let the defendants know that the information required in the preceding points must also accompany it in a computerized format. Notify yourself Carlos S. Fay

Three years after the historic decision of the Supreme Court of Justice of the Nation (CSJN) for the environmental recomposition, the improvement in the quality of life and the prevention of damages in the Matanza Riachuelo Basin, the Deputy I in charge of the Ombudsman's Office. People of the Nation stressed "we emphasize that necessary actions have been implemented, although it is necessary to deepen the implementation of the environmental management instruments enshrined in the General Law of the Environment, guaranteeing the strict respect of the rights human beings of the population involved and to summon the citizenship to participate, in order to achieve the faithful fulfillment of the objectives established in the sentence ".

"This 3rd. anniversary finds us in a scenario that opens a rational hope, where the commitment of many actors allowed to begin to break the inertia of deterioration which was adhered fate of the basin and implement policies and plans aimed at reversing or improve their situation, "said Deputy I in charge of the National Ombudsman, Anselmo Sella.

"The essential impulse of the Judicial Power, led by the Supreme Court of Justice of the Nation, with the intervention of the Federal Court of First Instance of Quilmes, as well as the institutional strengthening of the Matanza Riachuelo Basin Authority (ACUMAR) -where they are represented the National State, the Province of Buenos Aires and the Autonomous City of Buenos Aires-, and the active participation of the

citizens and of the Collegiate Body, will allow to deepen the actions in progress and to advance in the necessary transformations in the basin, "he said.

He also indicated that for this, it is fundamental to fully implement the policy and environmental management instruments set forth in the General Law of the Environment No. 25,675 and to address the pending tasks that still persist, joining efforts in a comprehensive strategy that allows:

1) identify and assist those people whose health is affected by environmental deterioration, eliminating the environmental risk factors that determine the diseases;

2) establish a clear policy with objectives and goals for the total elimination of pollution of industrial origin;

3) advance in the closing and cleaning up of all the existing rubbish dumps and start up an integral management of household waste;

4) implement until the effective commissioning of the necessary infrastructure works to ensure the universality of the services of access to drinking water, sewerage and the proper treatment of sewage effluents;

5) design sustainable solutions to the housing problem, guaranteeing the information and participation of citizens who need to be relocated;

6) continue with the environmental management actions of the basin territory, foreseeing a sustainable development and the preservation and recovery of the existing strategic green spaces;

7) ensure access to public environmental information, including a system of indicators that facilitate the monitoring of compliance with the objectives of the ruling;

8) reduce the environmental risk of the Dock Sud petrochemical center to levels compatible with the recomposition and prevention objectives set by the judgment.

He concluded by stating that "the challenges to be faced require the contribution of all the sectors involved, building the necessary consensus to advance towards the achievement of a healthy and suitable environment for human development, and articulating the necessary actions at the political, economic, social level. and institutional that guarantee the effective use of the human rights of the citizens of the basin in a process of environmental recomposition, improvement in the quality of life and prevention of damages ".

It should be remembered that the Collegiate Body is coordinated by the National Ombudsman's Office and is composed of the Citizen Association for Human Rights, the La Boca Neighborhood Association, the Legal and Social Studies Center, the Environment and Natural Resources Foundation and the Greenpeace Argentina Foundation.

FEDERATIVE REPUBLIC OF BRAZIL

Sentence number

SENTENCE 809/2016 - PLENARY

reporter

ANDRÉ DE CARVALHO

process

001 554 / 2015-8

Process type

LIFTING REPORT (RL)

Date of the session

06/04/2016

Number of the minutes

11/2016

Interested / Responsible / Recurrent

3. Interested: Court of Accounts of the Union (TCU).

entity

Ministry of the Environment (MMA); Ministry of National Integration (MI); National Water Agency (ANA).

Representative of the Public Ministry

he did not act

Technical Unit

Secretariat of External Control of Agriculture and the Environment (SecexAmbiental).

Legal representative

there is no.

subject

Audit with the objective of identifying the main institutional actors, programs, actions, legal and regulatory framework and other relevant information in order to obtain inputs for a planning of external control related to the federal management of the water crisis.

abstract

POLL. FEDERAL MANAGEMENT OF THE WATER CRISIS. NON-EXISTENCE OF NATIONAL POLICY FOR THE DRY, BASED ON RISK MANAGEMENT. IDENTIFICATION OF RISKS ASSOCIATED TO ORGANIC POLLUTION AND INEFFICIENT USE OF WATER RESOURCES. RECOMMENDATION. COMMUNICATION.

judgment

HAVING SEEN, reported and discussed these lawsuits on the federal management of water crisis, in compliance with the determination of the TCU, with the objective of "identifying, above all, the preventive measures and the contingency plans that were or should have already been been adopted to avoid or even to reduce the effects of the current water crisis that plagues the country ";

The Ministers of the Court of Accounts of the Union, meeting in plenary session, agree on the reasons stated by the Rapporteur, in:

9.1. recommend to the Civil House of the Presidency of the Republic that it adopt the necessary measures to enable the development of a national policy or strategy for drought based on risk management, observing at least the following aspects:

9.1.1. the guidelines set out in the National Directives Management Guidelines: the action template, published in 2014 by the United Nations Organization for Integrated Drought Management (IDMP) program, detailing the process of building a national policy it focuses on the identification and systemic treatment of the risks inherent to water scarcity through actions of preparation and adaptation that aim to diminish their effects within a more complete vision of protection of water resources;

9.1.2. the articulation and coordination of efforts of federal bodies and entities involved in the management of water resources, especially the Ministries of National Integration and the Environment (including the National Water Agency), as well as other subnational actors (states, Federal District and municipalities) and civil society that can contribute to the development of this national strategy for drought, based on the reduction of risks;

9.1.3. the integration of ongoing studies and actions that can be exploited in the context of the aforementioned national drought policy, such as the National Adaptation Plan (NAP) and the National Water Security Plan (PNSH);

9.1.4. the adoption of integrated measures, based on prioritization criteria, to act on the causes of the water crisis, considering, for example, the effects of organic pollution and

the inefficient use of water resources, according to the diagnosis presented in this document lifting;

9.1.5. the urgent definition and priority implementation of the monitoring and warning systems and dose contingency plans to mitigate the deleterious effects of the drought that already threaten the populations and the economy of the country;

9.2. determine the Environmental Commission to incorporate the proposals presented in Appendix 1 of this survey report into the planning of its external control actions;

9.3. in accordance with the provisions of the article of the Organic Law of the Legislative Power, within the framework of the United Nations Convention on Climate Change. for: the Committee on the Environment, Consumer Protection and Supervision and Control of the Federal Senate; the Commission for the Environment and Sustainable Development of the Chamber of Deputies; the National Council of Water Resources; the Civil House of the Presidency of the Republic; the Ministry of the Environment; the National Water Agency; the Ministry of National Integration; the Ministry of Cities; the Ministry of Science, Technology and Innovation; the Ministry of Planning, Budget and Management; the Office of the Comptroller General of the Union; and the 4th Chamber of the Federal Public Ministry; Y

9.4. and in the case of an employment contract.

9.5 Determine that Segecex, in conjunction with the competent technical units, promotes studies to organize the permanent forum of control on the issues of hydrological governance and soil governance, and must periodically promote actions and Civil Defense (Sedec) and Regional Development (SDR)), both in the MI, as well as the President of the Brazilian Association of State Sanitation Companies (Aesbe). In addition, new interviews were held with managers of the ANA and Cemaden. 10. Based on the information gathered, it was possible to obtain an overview of the federal management of the water crisis. In particular, possible external control actions were identified based on the use of a simplified risk matrix (Appendix 1). 2. OVERVIEW OF THE OBJECT 11. Brazil has the largest reserve of fresh water in the world, around 12% of the total. However, this availability is unequally distributed in the country, with about 80% concentrated in the Amazonian Hydrographic Region, a locality with low population density, while the most densely populated regions in the southeast and northeast of the country face varying degrees of difficulty ensure your water safety. 12. As of the second semester of 2012, there was an intense reduction in rainfall rates in areas of the national territory, as can be seen in Figure 2. \\ _ sarq_prod \ Units \ SecexAmb \ DT-1 \ AUDITORIES \ Survey Water Crisis \ Figure 2 - Situation of rainfall in the country between 2012 and 2014 Note: hydrological year: between September of the reference year and October of the previous year Source: ANA (2015c) 13. That same year, the severe drought period It brought serious consequences for public supply in the affected areas, as well as for other water uses, such as irrigation and

hydroelectric power production. The northeastern semi-arid region experienced droughts with a return period (the expected interval for the occurrence of an event of equal or greater magnitude) over one hundred years in 2012 and 2013, being that in 2014 there were rains with normal frequency, but below the average. On the other hand, the level of deposits in the Northeast region fell from 61.7% in May 2012 to 25.3% in March 2014 (ANA, 2015c). 14. In the case of the Southeast region, the year 2014 was marked by an extreme drought, with a return period exceeding one hundred years. The contribution basins of the main reservoirs of urban supply in the region, such as the Cantareira System in São Paulo and the Paraíba del Sur systems in Rio de Janeiro, had rainfall in 2014 close to the lowest already recorded, which prevented the recovery of deposit levels (ANA, 2015c). 15. The Cantareira System constitutes the largest water production system in the Metropolitan Region of São Paulo (RMSP) and at the beginning of the severe drought period it was responsible for the supply of nearly nine million people. In 2014, the system had the month of January, normally its rainiest period, as the driest of the historical series. On the other hand, the average flow rate to the Cantareira System in that year registered a value equal to 8.7 m^3 / s, corresponding to about 22% of the historical annual average and 40% of the average flow of the year of 1953, up to then the lowest annual average flow value since 1930 (ANA, 2015c). 16. Situations of water insecurity are also of great concern in the rest of the world. The expectation of increase in the frequency, severity and duration of droughts as a result of climate change (WMO, GWP, 2014). At the same time, it is estimated that global demand for water will increase by 55% by 2050, which imposes great challenges for the sustainable management of water resources (WWAP, 2015). 17. This concern was well marked by the holding of an event promoted by various world organizations, in partnership with the United Nations, in March of 2013 to address the issue. Within the framework of the High Level Summit on national policies for drought, its focus was the reduction of social vulnerabilities for communities and sectors and, among its results, there was a great highlight for the need for a change in the paradigm framework of confrontation of droughts. 18. Historically, the emphasis has been on crisis management, which is concerned with dealing with the effects of water scarcity after its occurrence, acting reactive and emergency. In contrast, risk management emphasizes the increasing resilience of water resource management systems to cope with droughts by adopting mitigating measures, understood as preparation for the occurrence of crises (WMO, GWP, 2014). In this condition, we work with the entire cycle of disaster management, instead of just the portion referring to the management of the crisis (Figure 3). Figure 3 - Disaster management cycle Source: WMO, GWP (2014). Figure 3: Disaster management cycle Source: WMO, GWP (2014). 19. While crisis management tries to restore the prevailing conditions before the drought, risk management seeks to identify where vulnerabilities exist (sectors, regions, communities or population groups in particular) and systematically address these risks through the implementation of media and Civil Defense (Sedec) and Regional Development (SDR), both in the MI, as well as the President of the Brazilian Association of State Sanitation Companies (Aesbe). In addition, new interviews were held with managers of the ANA and Cemaden. 10. Based on the information gathered, it was possible to obtain an

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resources necessary to guarantee the supply of water for human supply and other uses throughout the country, such as dams , adductor systems, channels and integration axes. Another concern of the PNSH will be to reduce the risks associated with critical events (dry and full). In this regard, the Plan focuses on critical areas, such as the North-East North and the Parnaíba river basin; And in the case of women. southern region; and Eastern Bahia and Northern Minas Gerais (ANA, 2014a). According to the interview with managers of the ANA, the realization of the PNSH should consider the implications brought by climate change for the management of water resources. 71. The PNSH will be coordinated and elaborated in an association formed by the Ministry of National Integration, through the Secretariat of Water Infrastructure (SIH), and ANA. The start of the work was marked by an event held at the ANA on 8/20/2014, with the deadline for the completion of the studies being two years. According to the reference term for the elaboration of the Plan, the studies will consider the scenario of effective demands in 2020 and the year 2035 for the scope of the proposed interventions. The works identified by the Plan must be executed primarily by the MI and its partners, both at the federal and state levels. The PNSH should be reviewed every four years, to subsidize the preparation of the next Multi-Year Plan (PPA). 3.1.2. The reports of the Intergovernmental Panel on Climate Change (IPCC) and the Brazilian Panel on Climate Change (PBMC), published respectively in 2014 and 2015, indicate that climatic extremes, particularly of rains and droughts, are becoming more intense and frequent. The studies contained in these reports indicate that there was an increase in the frequency and intensity of extreme rainfall of short duration in the Southeast and South regions of Brazil, interspersed with longer and warmer dry periods. 73. The way he governs

In the federal comes drought situations is based on the crisis management model. This strategy focuses on the response to the effects of water scarcity after its occurrence, without a structured approach to increase the resistance of the national water resources management system to deal with future crises. This fact represents a risk in view of the expected increase in the frequency and intensity of droughts, particularly in the Southeast region. 74. In contrast, some countries around the world face problems related to the scarcity of water resources, having adopted measures that can serve as benchmarks for a national drought policy. 75. In the United States, the State of California is subject to extreme droughts for specified periods. Since the year 1900, ten periods of more intense drought were registered, with an approximate duration of three years. The 2007-2009 period was marked by a period of intense drought, which led to the declaration of a state of emergency in California for the first time, the first time that significant socioeconomic impacts were observed as a result of the emergency actions and social programs that had taken place. to be adopted (CDWR, 2010). 76. Thus, the government determined the development of the first drought state plan, called The California Drought Plan, which was published in November 2010. This document is intended to assist government entities in post-dry preparation, response and recovery. , coordination among the agencies, improvement in the monitoring procedures, capacity of early warning and greater effective response to emergencies associated with drought.

For this, activities and strategies are identified in order to minimize the risks for the most vulnerable regions. 77. In addition, the plan identifies federal, state, tribal or local agencies that may have primary and secondary roles in the management of drought response activities, to promote the efficient use of resources from these different areas to structure the efforts to respond and mitigate the crisis. With clear communication between these different spheres, rapid dissemination of information to the public occurs. 78. The leadership in the management of the crisis is exercised by the Department of Water Resources of the State, being assisted in its attributions by the Emergency Management Agency, whose focus is the response to the emergency and recovery. For its part, the California Emergency Service Act establishes the conditions for how an emergency will be declared and describes which authorities of public agencies must respond to these emergencies. 79. Another interesting example is that of Spain. This country faces periods of drought in practically all its regions, with the exception of the Canary Islands, and is one of the four European countries that suffer water stress situations, along with Cyprus, Malta and Italy. 80. Its drought policy includes the mobilization of resources for crisis situations and a risk analysis for future events. In this sense, its National Hydrological Plan establishes hydrological indicators that allow for the prediction of drought situations and serve as a reference for basin organizations to formally declare alert and drought situations. In the framework of their planning, basin organizations must draft drought plans with rules for the use of water. On the other hand, public administrations in charge of supplying populations with more than 20,000 inhabitants must have an emergency plan for drought situations, these plans being informed to basin organizations (MORENO, 2008). 81. Drought plans are based on indicators that assess the water shortage situation early enough to take the most appropriate actions. The plans are based on the knowledge of local vulnerabilities to drought, which structures the alternatives to reduce their impacts and the economic and financial resources available to deal with it. On the other hand, levels / stages of drought will be identified by early warning signs when the indicators are below historical levels, alert when water conservation measures must be taken and demand management and emergency when measures are taken exceptional to guarantee the supply. 82. Another initiative of the Spanish Government is the National Sewage Observatory, which brings together all Spanish entities that have competence in water matters (basin organizations, water administrations, local corporations, among others) in order to build a center of knowledge, anticipation, mitigation and confrontation of the effects of the drought in its territory. With this, this new policy of public control of the use of water was created that reinforces the participation of citizens in combating waste, pollution and the inappropriate use of water resources. The Observatorio de la Seca was created to be a reference center for monitoring the drought in Spain through the participation of citizens, acting with transparency and quality of information (MAGRAMA, 2015). 83. In addition to these international experiences, it is worth mentioning that the National Drought Management Policy Guidelines suggests ten steps for the development of a national drought policy based on risk management (WMO, GWP, 2014): 1) indicate a commission for national policy on drought management; 2) define the goals and objectives of a national drought management policy based on risk assessment; 3) seek

stakeholder participation, define and resolve conflicts between user sectors, considering cross-border implications; 4) catalog data and available financial resources and identify groups at risk; 5) make explicit the key points of the national drought management policy and drought preparedness plans including the following elements: monitoring, pre-warning and forecasting, impact and risk assessment, mitigation and response; 6) identify the need for research and fill the institutional gaps; 7) integrate the political and scientific aspects of drought management; 8) publicize the national drought management policy and drought preparedness plans and promote consensus and social awareness; 9) develop educational programs for all ages and groups of users; and 10) evaluate and revise the national drought management policy and support the drought preparedness plans. 84. According to the information gathered, the actions to structure a possible national strategy for drought are concentrated in the Ministry of National Integration, which has the participation of the ANA in the preparation of the Dry Monitor in the Northeast. However, it is understood that the elaboration of a national drought policy requires a broader and more articulated effort on the part of the federal government, to cover initiatives such as those suggested in the previous paragraph. In particular, it would fit the Civil House of the Presidency of the Republic, within its attribution of coordination and integration of government actions, to mobilize federal bodies and entities whose actions are correlated to the subject. 85. It should be noted that there are no regulations defining objectives, actions, responsibilities and deadlines for the preparation of a future national drought policy, even within the scope of the Ministry of National Integration. According to the report, the only document in that sense is a technical cooperation agreement between the Ministry of National Integration and the ANA, with the intervention of the Cearense Foundation of Meteorology and Water Resources (Funceme), to implement the Dry Monitor in Northeast (piece 22). It is important to note that the validity of the document is until 12/31/2015, and it is possible to extend it by means of an additive term. 86. The lack of a more consistent effort on the part of the federal government weakens the expectation of developing a national drought policy. This situation exposes the country to the risk of high losses due to the lack of adequate preparatory measures to face future water crises. 87. As an example, it should be mentioned that the drought that affected the Spanish city of Barcelona between 2006 and 2007 caused losses estimated at around 1,600 million euros, almost 1% of its GDP (Martin-Ortega, J. and A.) Markandya, 2009). The city had to resort to various emergency actions to guarantee a minimum supply of water resources, including receiving water sent from France by ship. 88. In this way, it is appropriate to recommend to the Civil House of the Presidency of the Republic that, in coordination with the Ministry of National Integration and the ANA, adopt the necessary measures to enable the development of a national drought policy based on the Risk management. 3.2. Effects of organic pollution on water availability 3.2.1. Contextualization 89. Organic pollution in water bodies affects the availability of water for its various uses. In particular, the inadequacy in the treatment of wastewater in municipalities located in the watersheds that serve the metropolitan regions of the Southeast, such as São Paulo and Rio de Janeiro, is a factor that significantly increases the vulnerability of these facilities in the face of the occurrence of water crisis. 90. In

that sense, 2012 data on the quality of water resources in the country points to a marked difference in relation to the location of water bodies, whether urban or rural. In the first case, considering 530 collection points in regions urban areas, 25% had the bad or lousy Water Quality Index (IQA). For rural areas, 6% of a total of 1,039 monitored points had poor IQA, with none being recorded as lousy (ANA, 2015b). 91. At the same time, the ANA report on the water crisis highlights that rivers located in metropolitan regions, such as the PCJ, Paraíba del Sur and Alto Tietê basins, present quantitative criticality, in view of the high demand for existing water and the large amount of organic cargo released into the rivers "(ANA, 2015c, p.4) .This situation is described in Figure 8. Figure 8 - Basins of rivers of Union domain and states with critical fragments, with emphasis on the metropolitan areas of the Southeast region The report on the quality of surface water in the State of São Paulo for 2014 indicates that the Water Resources Management Units (UGRHI) Alto Tietê and PCJ possessed, respectively, the 60% and 27% points monitored with bad or lousy results In this document, these units are responsible for 63.47% of the untreated domestic sewerage (remaining load) of the state, 591,174 kg / day (Alto Tietê) and 106.2 90 kg / day (PCJ) These numbers are associated with the high population quota and the rate of wastewater treatment, of the order of 50% and 66% for Alto Tietê and PCJ, respectively (CETESB, 2015). 93. For its part, the water quality survey carried out by the SOS Mata Atlántica Foundation in 2015 indicates that, out of 117 monitored points in the state of São Paulo, 43.6% had bad or lousy IQA. Specifically in the points located in the municipality of São Paulo, 44.3% had bad or lousy IQA. However, this result was better than that of the 2014 survey, when 75% of the monitored points had that classification (FUNDACIÓN SOS MATA ATLÁNTICA, 2015). 94. According to this survey, in the state of Rio de Janeiro, of 175 points, 9.1% had bad IQA. The municipality of Rio de Janeiro owned 66.7% of the points raised in 2015 with IQA bad, indicating worsening in the indicator with respect to 2014, when 40% of the points were unsatisfactory. 95. In the course of the water crisis in the Metropolitan Region of São Paulo (RMSP), various news items published in the media highlighted the significant volume of water available in the Billings Dam (in the order of 1,300 million m^3). Studies have also been mentioned to use water from that spring to alleviate the dependency of the Cantareira System, by transferring water to other existing systems, such as the Rio Grande and the Guarapiranga, which already use water from the aforementioned deposit, or even for the Alto Tietê However, the use on a larger scale would have been aborted due to the high cost for the treatment of its waters, remaining the alternative of using the water from the less contaminated arms of the dam, such as the arms Rio Grande and Rio Pequeno (RBA , 2014; JN, 2015; SHEET, 2015b). 96. In an interview with the press, the current director-president of the ANA mentioned that the pollution of the Guandú River, the main source of water for the population of the Metropolitan Region of Rio de Janeiro, causes great waste of water, since good Part of the transposed water flow, The Paraíba del Sur river is destined to the dilution of pollutants, in order to reach adequate conditions for water treatment (EL GLOBO, 2014). 97. Water pollution in Brazil is directly linked to low levels of wastewater treatment. In this way, it is worth examining how the sanitation sector in the country is structured. In general, the basic sanitation services are of local

interest, being, therefore, municipal attribution to organize and lend them, in the terms of art. 30, paragraph V, of the Federal Constitution. However, according to the understanding of the Federal Supreme Court (STF) within the framework of the ADI 1,842, where a congressional region is formally established neighboring municipalities, the interest becomes collective, the management must be shared between the state and municipalities, without prevailing the former over the latter and vice versa. 98. To the Union, according to art. 21, paragraph XX, of the Federal Constitution, it is necessary to institute guidelines for urban development, including basic sanitation. Article. 23, paragraph IX, of the Magna Carta has common competence of the three spheres to promote the improvement of basic sanitation conditions. 99. Law 11,445 (National Basic Sanitation Law - LNSB), of 5/1/2007, is the main regulatory framework for the sector. The LNSB has, among other matters, that the owner of the sanitation services, generally the municipality, must formulate the public policy of basic sanitation, draw up the basic sanitation plans, directly lend or authorize the delegation of services and define the entity responsible for its regulation and supervision. 100. In establishing its basic sanitation policy, the Union must observe a series of guidelines, among which: a) prioritize actions that promote social and territorial equity in access to basic sanitation; b) promote sustainable development, efficiency and effectiveness; c) encourage the adequate regulation of these services; promote the improvement of the quality of life and environmental and public health conditions; d) adopt objective criteria of eligibility and priority, including population concentration and water availability; and e) adopt the watershed as a reference unit for the planning of its actions. 101. According to the LNSB, the objectives of the Federal Basic Sanitation Policy include: a) encouraging the adoption of planning, regulation and oversight mechanisms for the provision of basic sanitation services; b) promote management alternatives that enable the economic and financial self-sustainability of basic sanitation services, with emphasis on federative cooperation; and c) promote the institutional development of basic sanitation, establishing means for the unity and articulation of the actions of the different agents, as well as the development of their organization, technical, managerial, financial and human resources capacity, taking into account local specificities. 102. Phrase that the model previously in force, the National Plan of Sanitation (Planasa), bet on the strengthening of the State Companies of Basic Sanitation (Cesb), with regional action and counting on strong role inductor of the federal government. This role was exercised through the contribution of resources raised via the Service Time Guarantee Fund (FGTS) and managed by the National Housing Bank (BNH), mainly destined to the municipalities that delivered the operation of the services to the respective Cesbs. . 103. This system went into crisis in the 1980s and 1990s and the sector went through a period of very low investment. The current regulatory framework led to profound changes, as it strengthened the role of the municipality as a planner, regulator and controller, as well as diversifying the institutional arrangements that can be formatted, both in terms of service provision, in terms of regulation and oversight. 104. Thus, the sanitation sector has a complex and fragmented institutional arrangement. The Union has the role of establishing guidelines and promoting the improvement of basic sanitation, the latter being a common assignment to states and municipalities. The

municipalities and / or public consortiums are the holders of these services, corresponding to the regulatory agencies (municipal, regional and state) regulating and supervising their execution. There are also regional service providers (mainly Cesbs), micro-regional and local, public and private, with delegations that may be full or partial, in the four modes of intervention provided in the LNSB (water supply, collection and sewage treatment, solid waste and urban drainage). Finally, it is also added the possibility of holding public-private partnerships (PPP). 105. At the federal level, sanitation actions are carried out by various bodies and entities, with emphasis on the Ministries of Cities, National Integration and Health. 106. Regarding the coverage of sanitary sewerage services in the country, Table 1 presents the percentage of permanent homes served by sanitation services, in urban and rural areas, in the water and sewerage components. There is a great regional variation and the predominance of water services. Table 1 - Percentage of permanent households served by the sanitation, water and wastewater services in the modalities in 2013. general of the network a Northeast North Region South Midwest of water (1) (%) 84.00 57.69 78.13 91.71 87 , 76 84.88 Net sewage collector (2) (%) 56.05 13.39 35.11 85.14 42.66 44.04 (1) Percentage of residents in permanent homes, urban and rural, with a network general. (2) Percentage of residents in permanent private homes, urban and rural, with a collection network. Source: IBGE (2015) (piece 23). 107. The national attention rate of the municipalities whose service providers sent information to the National Sanitation Information System (SNIS) in 2013 was 82.5% and 48.6% for water and sewage, respectively. As seen in Table 2, the level of attention suffers a lot of regional variation. In terms of treatment, the diagnosis estimates that only 39.0% of the sewers generated are treated (MCIDADES, 2014c). Table 2 - Levels of attention with water and sewers of the municipalities whose providers of services participating in the SNIS in 2013. Region Service index with network (%) Treatment index of the generated sewers (3) (%) Index of treatment of the wastewater collected (3)%) Water Collection of sewers Total Urban Total Urban Total Total North 52.4 62.4 6.5 8.2 14.7 85.3 Northeast 72.1 89.8 22.1 29.3 28.8 78.1 In the case of women, 48.6 45.9 91.6 Brazil 82.5 (1) 93.0 48.6 (2) 56.3 39.0 69.4 (1) corresponds to a population of 159 964 320 inhabitants. (2) Corresponds to a population of 94,335,251 inhabitants. (3) To calculate the treatment index of the sewers generated, the volume of drainage generated is estimated with the volume of water consumed. Source: MCIDADES (2014c). 108. The National Basic Sanitation Plan (Plansab), approved by Interministerial Portaria 571, of 12/5/2013, estimated the deficit in sanitary exhaustion by 60.3% in proportion of the population in the year 2010. Of these, , 50.7% is a consequence of precarious attention (population that uses collective service with inadequate quality or uses precarious individual health solution) and 9.6% (population without health solution). These indices also suffer wide regional variation, with worse percentage deficits in the North and Northeast regions and, in absolute terms, worse in the Northeast region, with a deficit of around 30 million people. The estimated deficit for the Southeast was around 15% of the population, close to 11.5 million people, placing it in the second position in absolute terms (MCIDADES, 2014b). 109. According to the report 'Public Expenditure on Basic Sanitation - 2013' (piece 24, p.2), prepared by the Ministry of Cities, investments in the basic sanitation

sector are made up of non-onerous and onerous resources. The resources from non-burdensome sources come from the General Budget of the Union (OGU) and do not foresee a direct financial return on investments, since the agents benefited do not need to repay the coffers of the Union. Already the onerous resources come from credit operations and have as main sources the FGTS and the Worker Protection Fund (FAT). They are long-term loans granted at reduced interest rates for investments in basic sanitation actions (MCIDADES, 2014a). 110. According to this report (part 24, pages 5-7), the budgetary resources of the OGU foreseen for the Sanitation in 2013, considering the original budget, amendments, additional credits, cancellations and relocations totaled approximately R $ 14.4 billion. Of this amount, close to R $ 6.0 billion (42%) would be associated to the 'water supply' component and close to R $ 1.7 billion (11.9%) to the 'sanitary exhaustion' component. It is considered that other components may contemplate resources for supply or exhaustion, such as the 'urban infrastructure' or 'integrated sanitation' modality, responsible for resources in the order of R $ 4.1 billion and R $ 0.7 billion, respectively. With regard to financing, this report indicates that resources were available in the order of R $ 9.65 billion from the FGTS in 2013 (MCIDADES, 2014a). 111. Regarding the specific budgetary execution of the health exhaustion component, the total disbursement of non-onerous resources for basic sanitation was of the order of R $ 1.0 billion and the total disbursement of onerous resources was of the order of R $ 1 , 4 (p.24). 112. It is important to mention that, for purposes of accounting for public expenditures in basic sanitation, the financial resources actually deposited by the Union in the current accounts of the undertakings are considered disbursements. Reports of public spending on sanitation also mention the category of "commitment of expenditures", which refers to the investments committed by the Union (values of loan contracts, in the case of onerous resources, and commitments, in the case of resources not burdensome) (MCIDADES, 2014a). 113. Other resources for basic sanitation not included in these reports on public expenditures in basic sanitation come from the state and municipal budgets; international loans, contracted with multilateral credit agencies; own resources of service providers; and resources from the collection for the use of water resources (including the State Water Resources Funds). 114. According to the Ministry of Cities (2014c), investment in water and sewerage was of the order of R $ 10.5 billion, distributed as follows: 55.7% own resources, 29.6% onerous resources and 14, 7% of non-expensive resources. This document highlights that the high participation of own resources may indicate that the providers declare investments made with the resources of state governments, municipalities and even the OGU as if they were their own, as well as resources from loans. Specifically in the sewer component, the reported investment was of the order of R $ 4.7 billion. 115. The investment of the private segment in water and sewerage in 2013 is estimated at around 1,800 million reais (ABCON, SINDCON, 2015). 116. The main information system in basic sanitation is the National Sanitation Information System (SNIS). In 1996, it relies on a data bank managed in the federal sphere, which contains information of an institutional, administrative, operational, managerial, economic-financial and quality character on the provision of water, sewage and management services. of solid waste (SNIS, 2015). 117. The constant water and

sewerage data of the SNIS are self-declared and are provided by state companies, companies and municipalities, private companies and, in many cases, by the prefectures themselves, all denominated in the SNIS as 'Service Providers'. The system collects only primary information, from which calculate 127. The aforementioned audit found that the main causes of delays and stoppages in basic sanitation works would be associated with deficiencies of the engineering projects formulated by the proponents, as well as failures in the processes of contracting companies for the execution of the enterprises, which corroborates the framework that the entities sub-nationals have difficulties in managing the resources transferred by the Union. Issues related to the seasonality of the project selections were also mentioned, affecting the labor market of professional designers and consultants, impacting the preparation of the projects, as well as the evaluation of the projects by the bodies transferred resources. 128. According to the professionals interviewed, the increase in infrastructure in the sector would involve improving the institutional capacity of these entities to plan, design, execute and operate the necessary projects. In this regard, it is worth mentioning that in 2013 the Union disbursed approximately R $ 211 million in the modalities 'Institutional Development' and 'Studies and Projects', close to 1.8% of the total disbursement in basic sanitation (MCIDADES, 2014a). 129. The other aspect related to poor infrastructure is tariff insufficiency. The interviewees considered that the current tariff levels are insufficient for the investment needs of the sector. At the same time, the increase in rates collide with the rejection of users, representing a significant political burden. One of the experts also highlighted the low quality of the services offered by many sanitation operators as an obstacle to the increase in rates. They also mentioned that the population sometimes prefers not to connect to sewer networks, even when they are available, thus avoiding the payment of fees related to sewerage. The study prepared by the Institute deals with Brazil and recent news corroborates this last point (INSTITUTO TRATA BRAZIL, REINFRA CONSULTORIA, 2015, SHEET, 2015a, SHEET, 2015c). 130. As shown in Figure 10, thirteen of the 28 regional service providers have total expenditures greater than their total operating revenues. Figure 10 - Difference between total operational income and total expenditure of the regional service providers participating in the SNIS in 2013. Source: MCIDADES (2014c) 131. The data in Table 3 and Figure 11 show that there is great variability in the value of water and sewer service rates and reveal that, in fourteen of the 27 units of the federation, the average of service providers participating in the SNIS in 2013 operates with a deficit, expressed by a total expenditure per service volume greater than the average rate per unit of volume. Table 3 - Average rate practiced and average total expenditure per unit of service of the service providers participating in the SNIS in 2013, second scope. (Average) (R $ / m³) Average rate (R $ / m³) Total expenditure variation (average) (R $ / m³) Average total expenditure (R $ / m³) Regional 1.07 to 5, 54 2.86 0.89 to 6.15 2.71 Microregional 1.26 to 5.38 3.33 0.98 to 4.92 2.28 Local 0.30 to 5.60 2.02 0.30 a In the case of there is a change in the quality of customer service, participating services of the SNIS in 2013, second state. 132. It now proceeds to discuss the deficient institutional arrangement, another relevant factor for the low levels of collection and treatment of effluents indicated by specialists. Judicial discussions about the ownership of these services, regulation and inspection

would affect the planning of investments by the companies. It was also reported that the Union, although it does not hold basic sanitation services, has a predominance in allocating resources to the sector, but would allocate those resources without clear rules. 133. In this regard, it is important to mention that the sanitation sector went through a long period of low investment, from the beginning of the 1980s to the middle of 2003. In that interval, there was a strong contingency of credit to the public sector, making it difficult the access of the Cesbs and the municipalities to financial resources, as well as the use of these companies as instruments of anti-inflationary policy, through controlled price controls (GRIGOLIN, 2007, TUROLLA, 2012). For its part, the lack of a framework The regulatory framework did not provide legal security to attract private investment. 134. In 2007, the regulatory framework for sanitation was approved, Law 11,445 (LNSB), accompanied by an increase in federal investments for the sector. This law established obligations to the holders of services regarding sectoral planning and delegation of services, as well as their regulation and oversight. In 2013, the STF also judged the ADIs that clarified issues related to the ownership of the services (LAST INSTANCE, 2013). 135. In general, the ownership of environmental protection services is dispersed in the 5,561 Brazilian municipalities, which have the autonomy to plan, regulate and supervise them, since these last two powers can be delegated. This dispersion, associated with the multiple possible arrangements to be adopted in the supply of services, entails enormous heterogeneity in the level of planning, service provision, coverage, regulation and control. 136. In this sense, a diagnosis of the situation of the municipal basic sanitation plans in the hundred major Brazilian cities indicated that 66% of those municipalities have elaborated plans, of which 58% contemplate the sanitary sewer component and only 34%. % include the four components planned in the LNSB basin. In the case of the municipalities, 56% of these municipalities have a regulatory authority (own or delegated) and that only 12% of the municipalities had plans with all the requirements established in Law 11,445 / 2007 (INSTITUTO TRATA BRAZIL, PEZCO MICROANALYSIS, 2014). 137. Regarding the regulation of the service, the law establishes the designation of regulation and inspection entity as a necessary condition for the validity of concession contracts, observing the principles of decision-making independence, transparency, technicality, speed and objectivity of decisions. . Within the defined objectives of the regulation, it is worth mentioning: the establishment of standards and norms; the guarantee of compliance with contractual conditions and goals; the prevention and repression of the abuse of economic power; and the regulation of the fees charged. 138. However, there is the possibility of multiple and complex institutional arrangements for the provision of services (regionalized, micro-regionalized, local, full, partial concessions, concessions by areas, public consortiums, PPPs). It is also possible the existence of multiple actors, depending on the adopted arrangement, even in what refers to regulation (state, regional, local agencies). 139. In 2014, the existence of 49 agencies with competence to regulate the sector was estimated, with 26 being state coverage, 20 municipal and three consortia (Figure 12). Figure 12 - Estimated quantity of regulatory agencies for basic sanitation instituted based on the National Basic Sanitation Law. Source: Abar (2014) Note: (1) RA means regulators. (2) The bars indicate the number of regulatory agencies

established in a given year. 140. Investigation of the state-of-the-art of regulation in basic sanitation carried out by the Brazilian Association of Regulation Agencies (Abar) in 2013, although it emphasized that the uniformity of regulation (identity of rules, resolutions and norms applied in different concessions and / or lenders was not an objective of the investigation, indicated as a possible regulatory problem the existence of agencies that regulate more than one service provider, as well as regional operators that are subject to the regulation of more than one agency. It would relate to aspects of scale and scope In the case of service providers, the lack of uniformity could result in different procedures and commercial systems, account structures, operating routines, raising operating costs and impacting tariffs (ABAR, 2013) - Recent evolution of the number of municipalities regulated by the regulatory agencies of basic sanitation participating in the Abar survey. Source: Abar (2014) 3.2.2.2. The high level of organic contamination of the springs was also associated with the low prioritization of investments in infrastructure in critical fragments, from the quantitative and qualitative point of view of water resources, revealing a possible descanamiento between the policies of sanitation and water management. water resources. 142. According to the SNSA managers, one of the interfaces between these policies is to obtain the granting of rights to use the water resources of undertakings financed by federal resources. Another interviewee stressed that in the elaboration of strategic plans or more relevant intersectoral studies, such as the National Water Resources Plan (PNRH) and Plansab, there is also articulation between the two sectors. In this regard, the National Water Security Plan and the Sanitary Exhaustion Atlas are currently being prepared by the ANA, both with the participation of the Ministry of Cities. However, the lack of a permanent forum for intersectoral discussions has been reported. 143. In an interview, the managers of the ANA stressed that the Agency has limited capacity of influence with the other sectors of the federal government or even in relation to the other federal entities. 144. As an example, the situation is mentioned in which the ANA, within the framework of actions to regularize the water uses in the Paraíba del Sur river basin, identified the launching of domestic drains in natura without the necessary concessions. Bearing in mind that the body in the event of a change in the quality of production, it should be taken into account that the allocation of federal resources to sanitation initiatives in the municipalities in question (piece 25). However, managers of the ANA reported that, until today, the municipalities were not able to comply with the terms agreed in the commitment protocols. 145. Another situation that involves the need to prioritize critical fragments occurs when extracts from rivers of the Union's domain have an exacerbated capacity for new releases, due to the supply of poor quality water from state-owned rivers. In this case, actions necessary to improve the quality of the water bodies involve bodies that manage water resources and the environment of the state and / or eventually actions in charge of municipal administrations. 3.2.2.3. In the case of public basic sanitation services, the Union has a fundamental role in sectoral development, as established in the Federal Constitution, the LNSB and the Plansab. Thus, the federal government can act in relation to the aspects discussed here. 147. In relation to insufficient investment in sanitary exhaustion, the Union, together with the states and municipalities, must invest in the improvement of basic sanitation conditions,

according to art. 23, paragraph IX, of the Federal Constitution. In this sense, the Plansab foresees the contribution of federal resources in the order of R $ 140 billion in the next twenty years for the purpose of universalizing sanitary exhaustion. Thus, the Union must seek means to meet its objective by meeting the eligibility and priority criteria set forth in the LNSB, including those related to water availability and the improvement of environmental conditions. 148. With regard to the failures of planning, design and construction, derived from the low capacity of subnational entities, the Union must, as recommended in art. From the LNSB, promote the institutional development of basic sanitation, establishing means for the unity and articulation of the actions of the different agents, as well as the development of their organization, technical, managerial, financial and human resources capacity, contemplated local specificities. 149. Regarding the insufficient rate, in response to the commands inserted in the arts. Of the LNSB, the Union must encourage the establishment of adequate regulation of services and encourage the adoption of mechanisms for planning, regulation and control of the provision of basic sanitation services. 150. Regarding the role of the Union in institutional arrangements, it should establish guidelines for basic sanitation, in accordance with the provisions of art. 21, paragraph XX, of the Federal Constitution, which was given with the approval of Law 11.445 / 2007. However, the Union still has the role of promoting the institutional development of basic sanitation, establishing means for the unity and articulation of the actions of the different agents, as well as the development of their organization, technical, managerial, financial and human resources capacity, in accordance with the provisions of art. 49, subsection VIII, of the LNSB. 151. Finally, in relation to critical extracts, the federal government has instruments that allow it to prioritize investments taking into account the increase in water availability as a result of the reduction of the organic load released in rivers. In particular, art. 48 of the LNSB establishes criteria that can be used more actively in this regard. The role of the ANA in the preparation of studies to subsidize the application of financial resources of the Union in water pollution control works and services is added (Article 4, subsection XI, of Law 9,984, of 17/7/2000), as an example of the Atlas of Sanitary Exhaustion (in development), and the regulatory action on bodies of water of the Union domain, by defining the quantity and quality of water in the transition from bodies of water of the state domain to of federal domain Art. 17 of Decree 3,692, of 12/19/2000) (piece 26). 152. As a preliminary result of this survey, it is worth mentioning that an audit is already under way in this Court dealing with federal actions related to sanitary sewer services that can contribute to the efficient management of water resources (TC 017.507 / 2015- 4). 3.3. Promotion of the efficient use of water resources 3.3.1. Contextualization 153. Historically, water security policies for metropolitan regions rely heavily on engineering works, such as the construction of new reservoirs and canals to supply water from increasingly distant sources. However, faced with the risk of facing the most frequent extreme climatic events, with longer and more severe drought periods, it is essential to act not only in the increase of the water supply, but also in the sense of containing the demand, stimulating the rational use of water resources and combating their waste. 154. Countries facing water scarcity are adopting various solutions to promote the efficient use of water resources. Among them, they stand out: the adoption

of instruments of economic incentive for control of the demand; the creation of water efficiency labeling systems; the granting of subsidies for the adoption of rational water use practices in the urban sector, industry and irrigation; the realization of awareness campaigns for the population; the use of reuse water; and the fight against losses in the supply network (MMA, 2015c). It is also common to adopt practices such as rainwater harvesting and desalination, which will not be addressed in this chapter because they are considered strategies to increase the water supply through the diversification of sources of supply, and not to contain the water supply. demand. 155. Economic incentive instruments are means to achieve certain public policy objectives -such as avoiding the overexploitation of a scarce natural resource- through market signals that stimulate changes in the behavior of economic agents (STAVINS, 2003). For the control of water demand, the most commonly used instruments are the collection for the use of water resources and the creation of water markets. The first consists of charging a price per volume of raw water used, in order to demonstrate the economic value of the resource and encourage its rational use. This model is adopted by several countries, such as France, Holland, Germany, Cyprus, Estonia, Colombia, South Korea and Israel (MMA, 2015c, RADEMAEKERS et al., 2011, STAVINS, 2003). 156. Already in the water markets adopted in Australia and Spain, the regulatory body establishes a maximum limit that can be consumed in a sustainable manner by all the users of each river basin and gives them quotas that can be freely negotiated among them. . The user forgiven in the use of water ends up being forced to buy new quotas, while the user who uses the resource efficiently benefits selling part of the quotas to which he is entitled. If they are properly implemented, both instruments create incentives for users to adopt saving practices, to the extent that the waste becomes a relevant cost for them. 157. Labeling systems, such as those created by Australia and China, establish minimum standards of efficiency for items such as showers, faucets and toilets and assign labels that guide consumers on the water consumption of each product, creating an incentive for the development of more efficient equipment (MMA, 2015c, ALMEIDA et al, 2006). Allied to this strategy, Australia promoted the free exchange of old showers for new models that consume less water, established a progressive tariff structure, which grants discounts to those who save water, carried out awareness campaigns to stimulate the voluntary reduction of consumption and regulated the demands of water efficiency for new constructions. In the industry, the country stimulated the adoption of saving practices through action plans focused on the largest consumers, the installation of 'smart hydrometers', which monitor the use of water resources in real time, and support programs. financial. 158. The adoption of efficient practices also in irrigation is fundamental in a scenario of water scarcity, to the extent that this activity is responsible for 72% of water consumption in Brazil (ANA, 2015b). In this aspect, the experiences of Spain and Israel assume a great prominence. The Segura river basin region, in the southeast of Spain, is one of the driest regions in Europe, with average annual rainfall of only 365 mm and natural water availability of 400 m3 / inhab. / Year. As a reference, the III World Water Forum, held in Kyoto, in 2003, established that a water availability of less than 1,000 m3 / inhab. / Year is considered low catastrophe. However, thanks to the diversification of water sources and the use of modern irrigation techniques, this

region is responsible for 30% of fruit and vegetable production in Spain, exporting 5 million tons a year to the entire European continent. (MMA, 2015c). 159. Israel already has most of its territory classified as arid (60%) or semi-arid, with annual rainfall between 400 and 800 mm, concentrated only in the winter period. In this scenario, the country was forced to establish severe restrictions on the use of water in agriculture, leading to the development of advanced irrigation methods. The main innovation in the sector is probably the drip irrigation system, with water efficiency of approximately 95%, compared to 45% of average efficiency in flood irrigation systems (SITTON, 2003). 160. Singapore, Australia, Israel, Spain, Japan and California also implemented water reuse programs. After being treated, the wastewater is reused in industry, in agriculture or in residences, in activities that do not require the use of potable water (MMA, 2015c). In addition, they invested heavily in the fight against losses in urban supply systems. 161. In that In particular, the weak performance of most of the Brazilian municipalities draws attention. Cities with a pattern of excellence have indicators of losses of less than 15%. In Brazil, in 2013, the average rate of losses in the distribution was 37%, equivalent to 5.95 billion cubic meters, or almost six times the capacity of the Cantareira System. And this picture can be even more serious, to the extent that the majority of sanitation operators do not measure their water losses consistently (GO ASSOCIATES, 2015). 162. Losses in the supply systems are divided into real and apparent. The real ones, also known as physical losses, refer to all water available for distribution that does not reach consumers. They are derived from leaks in adductors, networks, extensions, connections, reservoirs and other operating units of the system. Apparent, or non-physical, are related to the volume of water that was actually consumed by end users, but for some reason was not measured or accounted for, generating loss of billing to the service provider. They occur as a function of measurement errors - inoperable or de-calibrated hydrometers, reading errors or frauds - clandestine connections or failures in the commercial registration of the sanitation service operator. 163. The National Sanitation Information System (SNIS) adopts two calculation formulas for the water loss index. One, which results in the turnover loss index, corresponds to the comparison between the volume of water available for distribution and the volume invoiced. The other, which results in the loss index in the distribution, makes the comparison between the volume available for distribution and the volume consumed. According to the SNIS data for 2013, the North region is the one with the worst rates of turnover and distribution losses, in the order of 58% and 51%, respectively (Table 4). Table 4 - Index of losses of SNIS participating service providers in 2013 Region Billing losses (%) Distribution losses (%) North 58,0 50.8 Northeast 42.6 45.0 Southeast 33.7 33, 4 South 32.7 35.1 Central-West 33.8 33.4 Total 36.7 37.0 Source: SNIS (2015) 164. Among the states, there is a great disparity in the efficiency level of the supply systems . In the Amazon, 77% of available water is lost in distribution, before reaching consumers. The Federal District is the only unit of the federation in which this percentage is below 30% (Figure 14), but still far from the indexes of developed countries. In the case of Brazil, most of the countries of Latin America and the Caribbean, with a rate of population growth, Latin American cities. However, Brazilian cities with the highest and lowest loss index occupy the first and

last place in the study sample, evidencing the heterogeneity existing in the country (GO ASSOCIADOS, 2015). Figure 15 - Losses in the distribution in Brazil in 2013 vs. In the same study shows that the one hundred largest Brazilian municipalities have an average loss of turnover rate significantly higher than that of providers from other continents, with a highlight for the cities of Osaka, Copenhagen and Singapore, with rates of 7%, 4% and 4 %, respectively. Figure 16 - Billing losses in Brazil in 2013 vs. losses in other continents Source: GO Asociados (2015) 167. The high loss rates demonstrate the need for operators to implement actions to improve the efficiency of the services provided. In fact, one of the basic principles of the regulatory framework for basic sanitation is precisely the efficiency and economic sustainability of public sanitation services (Law 11,445 / 2007, Article 2, section VII). In this sense, this law determines that the concession contracts must contain progressive and gradual goals of expansion of services, efficiency and use.

rationalization of water, energy and other natural resources (Article 11, § 2) and that the regulating entity of the sector should edit standards relating to the technical, economic and social dimensions of the provision of services, which include, among others aspects, the evaluation of the efficiency and effectiveness of the services provided (article 23, subsection VII). 168. The National Resource Policy In the case of wastewater, wastewater from sewage water from the wastewater of the Autonomous Community of the Autonomous Community of the State of Mexico. In that sense, this policy instituted the collection for the use of water with the objective of giving the user an indication of the real value of water resources and inducing their efficient use, as well as obtaining financial resources to finance the programs and interventions contemplated. in water resources intervention plans (article 19). 169. It is important to clarify that such collection is not confused with the rate of water and sewerage collected from the customers of the supply system. This is intended to remunerate the operator of basic sanitation services for collection, treatment and distribution of water and collection and treatment of sewerage, while the collection for the use of water resources is imposed on users who collect raw water or They throw effluents directly into the body water. 170. So far, the collection was implemented in four interstate river basins - river basins of the Paraíba del Sur river, the Piracicaba, Capivari and Jundiaí rivers, the São Francisco river and the Doce river - and in hydrographic basins of the states of Ceará , January River, São Paulo, Minas Gerais and Paraná. In 2014, R $ 237.4 million was collected with the charge for the use of water resources, of which R $ 62.3 million were collected in interstate basins and R $ 175.1 million in state basins (ANA , 2015a). In the case of wastewater from wastewater from wastewater from the Autonomous Community of the Province of Buenos Aires,). Based on Resolution ANA 707 of 21/12/2004 and Resolution CNRH 16 of 8/5/2001, the agency can deny applications for grants of volumes considered excessive according to the standards established in the Manual of Technical Procedures and Administrative of Outorga of Right of Use of Water Resources. 3.3.2. Risk events 172. The promotion of the efficient use of water is a very important measure to increase the resilience of the national water resources management system in the face of future extreme events. However, this possibility falls

into two significant obstacles: low institutional capacity of sanitation service providers and insufficient incentives to induce the rational use of water. 3.3.2.1. Low institutional capacity of sanitation service providers 173. In general, real losses in sanitation occur because the distribution networks are old -with more than twenty years- built with low quality materials or are subject to pressures high, or as a consequence of operational failures in the management of the systems. The primary mitigating actions for real losses consist in avoiding or reducing the mentioned causes, besides improving the sectorization of the networks - creating measurement and control districts -, monitoring and reducing pressures, investigating the existence of visible and hidden leaks and replacing adductor or network fragments compromised. Apparent losses, caused by fraud or measurement errors or registration, should be inhibited by the certification of the quality of hydrometers, replacement of hydrometers with more than five years, training of readers and creation of combat teams to fraud (PINTO, 2012). 174. In summary, the classic income for the reduction of losses is the replacement of old networks, sectorization, pressure reduction, improvement of the micro and macro-metering, update of customer registration and fight against fraud. It is observed that Several of these measures have a high cost, require planning and good technical and operational capacity. It is not, therefore, a problem of easy solution, especially in view of the institutional constraints faced by the majority of Brazil's basic sanitation service providers. As Albuquerque (2011) observes, most of the state sanitation companies do not have enough cash generation capacity to face the necessary investments. With this, system improvements depend heavily on transfers from the federal government. 175. In the transfer of budgetary resources for the expansion of supply facilities, the Ministry of Cities aims to induce the reduction of losses in the system by requiring municipalities whose loss rate is greater than 40% for the diagnosis of the network and the proposal of physical interventions aimed at reducing the index by up to 30%. These interventions should include, as a minimum, the implementation of sectorization, macro and micro measurement, and control centers and automated operations (MCIDADES, 2012). However, the managers of SNSA stated, in an interview, that the investment in equipment aimed at the efficient use of water, such as the acquisition of hydrometers and the replacement of pumps, is an obligation of the owner of basic sanitation, and the Union has no obligation to finance them. 176. In this sense, it is interesting to note that, in 2013, only 1.8% of federal public spending on basic sanitation was allocated to institutional development, a category that includes actions such as the purchase and installation of hydrometers, the modernization of the structure accounting and information technology and commercial actions to reduce non-compliance (Table 5). Of this amount, only 5% - or 0.09% of total public spending on basic sanitation - refers to non-onerous resources. In the event of a change in water quality, it should be taken into account that, in the case of wastewater, Loan 1,415,050,018 13.72 OGU 963,910,675 9.35 Total 2,378,960,693 23, 07 Institutional Development Loan 175,720,744 1.70 OGU 9,557,142 0.09 Total 185,277,885 1.80 Other Loans 1,505,903,737 14, 61 OGU 1,903,495,547 18.46 Total 3,409,399,284 33.07 General total 10,310. 526,354 100.00 Source: MCIDADES (2014a) 177. In this way, investments in institutional strengthening actions and combatting losses in the public supply networks continue at a

rate below ideal. With this, the reduction in the average loss rates in the country in recent years has been small. The Institute's study deals with Brazil shows that, between 2004 and 2013, the fall in the turnover loss index was just 0.35 percentage points per year. In this rhythm, it would be possible to reach the average of the developed countries (15%) only in the year 2080 (GO ASSOCIADOS, 2015). 3.3.2.2. Insufficient incentives to induce the rational use of water 178. As we have seen, the National Water Resources Policy adopted the charge for the use of water -an instrument of economic incentive- to induce the rationalization of its use. It happens that, in the model adopted in the country, the users of water resources exert great influence in the definition of the value of the collection. Indeed, according to art. In which users have relevant participation, establish collection mechanisms and suggest the values to be charged in the respective basin. 179. In this way, the values are kept at low levels, insufficient to promote changes in the patterns of use of water resources. With this, the instrument does not fully meet the objectives set forth in art. And in the case of a person who is not of his family, 180. In addition, there are no agile mechanisms in the country to, in periods of drought, readjust the value of the charge for the use of gross water or the tariff of treated water. Regardless if the water conditions are favorable or not, the direct users and the final customers of the public supply system pay a constant value for the volume of water consumed. Israel, on the other hand, applies an extra tariff when it faces severe low water levels, signaling to users the need to save water (MMA, 2015c). 181. The attribution of an adequate price for a natural resource is the great inducer of its rational use and innovation, but it is not the only one. As you can see, Australia has a water efficiency labeling system for items such as showers, faucets and sanitary vessels that guide consumers on the water consumption of each product. The preference of consumers for utensils that use less water creates the incentive for the industry to invest in the development of cheaper products. Brazil has a similar experience with the National Program for the Conservation of Electric Energy (Procel), which, through the Selo Procel, indicates to the consumer the consumption and performance rates of home appliances. However, the country does not adopt a similar system for water efficiency labeling. 182. Regarding solutions for wastewater recycling, Brazil has some experiences already in operation and others in development. Since 2012, the Aquapolo Project, developed by the Basic Sanitation Company of the State of São Paulo (Sabesp) and Odebrecht Ambiental, provides water for reuse for the Petrochemical Complex of ABC Paulista. It is the largest project of that nature in the southern hemisphere, with the capacity to produce up to 1,000 liters per second of reuse water from treated sewage, an amount that would be enough to supply up to 300 thousand people. However, Brazilian legislation does not authorize the use of reuse water for public supply and, due to the lack of industrial customers, the Aquapolo station now works with half of its installed capacity (S. PAULO, 2010, ESTADÃO, 2014). 183. Recently, Sabesp announced the construction of two new reuse water production stations, equipped with state-of-the-art technology in countries such as the United States, Israel and Singapore. The stations must produce 3 thousand liters per second of high quality reuse water, with 99% purity, enough to supply 900 thousand people. However, as the legislation does not authorize direct use, these waters will be released at the Guarapiranga and Insolina dams to be re-

treated, before being distributed to the population (SABESP, 2014, ESTADÃO, 2014). 184. The federal government has been discussing with the states of São Paulo and Rio de Janeiro ways to fill the gaps in the regulations (EBC, 2015). However, another obstacle to the large-scale use of reuse water is the high cost of its production. It is estimated that each cubic meter produced by the two new stations of Sabesp will cost approximately R $ 4, while the same amount of water treated by conventional systems costs up to R $ 2.10 (ESTADÃO, 2014). Obviously, this does not mean that this solution should be discarded automatically, even because policies oriented towards water security are typically based not on a single instrument, but on a set of measures to increase supply and reduce water demand. In any case, each of the sprayed solutions must be analyzed, on a case-by-case basis, in accordance with local conditions and limitations, prioritizing those with the greatest technical and economic feasibility. 185. Finally, it is important to highlight the importance of enforcement actions to stimulate the rational use of water. In fact, the control of water demand depends not only on the establishment of adequate rules, but also on the control of their application. However, the survey carried out by this Court in 2013 found that the ANA has low auditing capacity, with only fourteen prosecutors, who are overcrowded in Brasilia, to carry out inspections throughout the country (TC 012.609 / 2013-7).

According to the head of the Superintendency of Supervision (SFI), the internal regulations of the Agency (Resolution ANA 2.020, of 12/15/2014) has been modified recently so that any ANA server can participate in control actions, increasing the cash available for this activity. Forty technicians have already been trained, but they only act in actions that have the participation of one of the fourteen prosecutors of the SFI. 186. Prolonged drought periods require regulators to adopt stricter measures to contain demand, such as restrictions on volumes granted, rationing decrees and an increase in the price of water. Although most of the population is collaborative at that time, many may try to circumvent the regulations. This is what has been happening in California, where the severe drought and the rationing imposed on the population gave rise to what for them is a new form of crime: theft of water (NESTEL, 2015). In recent years, most countries of the European Union (EU) However, the tightening of regulations may lead to an increase in levels of irregular use. To combat this trend, it is necessary to intensify the control efforts of the water resources management bodies, the basic sanitation operators and the police forces. 3.3.2.3. The federal government can play an important role in promoting the efficient and rational use of water, in accordance with the provisions of arts. 2nd, subsection II and 7, subsection IV, of Law 9,433 / 1997, as well as with arts. 48, clause XII and 49, paragraphs XI and XII, of the law 11.445 / 2007. 188. In this sense, the effort directed to the institutional development of the providers of basic sanitation services must be prioritized, giving special support to the actions aimed at reducing losses. Another front of action is in the development of instruments to encourage the rational use of water resources, mainly through initiatives that fill legislative gaps that inhibit actions such as water efficiency labeling and reuse. Lastly, control mechanisms must be improved, and the federal government must seek ways to cooperate with state water resources bodies. 4. ANALYSIS OF THE COMMENTS OF

THE MANAGERS 189. As pointed out in part 37, a preliminary version of the survey report was sent to the Civil House of the Presidency of the Republic, the Ministry of National Integration and the National Waters with the objective of harvesting their manifestation on the presented information and the proposed recommendation, if they agreed. 190. After the deadline set, only the Civil House of the Presidency of the Republic sent a response. In its file (piece 36), the body states that the formulation and management of the national irrigation policy corresponds to the Ministry of National Integration, with the Civil House / PR being in direct and immediate assistance to the Presidency of the Republic in aspects as the coordination and integration of government actions and the evaluation and monitoring of government action. 191. The institution added that it has acted to improve the management of water crises within its legal attributions, but that the recommendation proposed to the Civil House / PR in the preliminary report, trying to elaborate a national policy of drought based on the risk management, it escapes its competences and invades the legal attribution of the Ministry of National Integration. 192. Despite the considerations of the Civil House / PR, it is considered pertinent to maintain the content of the recommendation. As mentioned in the preliminary report, the elaboration of a national policy on drought should require a broader and more articulated effort on the part of the federal government, encompassing various ministries and bodies in that area of public administration. Such scope and effort extrapolate the area reserved for the Ministry of National Integration in the formulation and conduction of the national policy of irrigation, justly requiring the action of the Civil House / PR in its competence of coordination and integration of government actions. 5. CONCLUSION 193. In recent years, some regions of the country have faced more serious water scarcity scenarios. In 2012 and 2013, the Northeast Semi-arid region experienced droughts with a return period of more than one hundred years, and in various places in the Southeast region, 2014 was the driest year already registered. The average flow of the Cantareira System, at the time the main spring of the Metropolitan Region of São Paulo, was equivalent to 22% of the historical annual average and 40% of the average of 1953, until then the year with the lowest flow and registered (ANA, 2015c). 194. Despite the atypical nature of these events, science warns that we must prepare ourselves to face more intense and frequent climatic extremes. The reports of the Intergovernmental Panel on Climate Change (IPCC) and the Brazilian Panel on Climate Change (PBMC) indicate that there was an increase in the frequency and intensity of extreme rainfall of short duration in the Southeast and South regions of Brazil, interspersed with dry periods more long and warm (piece 21). 195. The way in which the federal government faces drought situations is based on the crisis management model. This strategy focuses on the response to the effects of water scarcity after its occurrence, without a structured approach to increase the resistance of the national water resources management system to deal with future crises. This fact represents a risk in view of the expected increase in the frequency and intensity of droughts, particularly in the Southeast region. 196. According to the information gathered, the actions to structure a possible national strategy for drought are concentrated in the Ministry of National Integration, which has the participation of the ANA in the preparation of the Dry Monitor in the Northeast. However, it is understood

that the elaboration of a national drought policy requires a broader and more articulated effort on the part of the federal government. In particular, it would fit the Civil House of the Presidency of the Republic, within its attribution of coordination and integration of government actions, to mobilize federal bodies and entities whose actions are correlated to the subject. 197. As additional measures that have the potential to confer greater resilience to the management of water resources in the country, this report identified the need to deal with contamination of springs (item 3.2) and an incentive to the efficient use of water (item 3.3) . 198. In Brazil, water pollution is directly related to low levels of wastewater treatment. According to the Water and Sewerage Services Assessment 2013, only 39% of the sewers generated are treated (MCIDADES, 2014c). The high organic load released in rivers located in metropolitan regions, such as in the PCJ, Paraíba del Sur and Alto Tietê basins, affects water quality and increases treatment costs for public supply purposes. 199. The high level of organic contamination of the springs is also associated with the low prioritization of investment in infrastructure in critical fragments, from the point of view of the quantity and quality of water, revealing a possible decrease between sanitation policies and of water resources management. 200. Despite not exercising the ownership of health exhaustion services, the Union has a fundamental role in inducing the development of the sector, through the transfer of financial resources, the encouragement of regulation of services and support for institutional development. and the articulation between entities, bodies and entities of the different spheres of government that have an interface with the subject. 201. The regulatory framework of the sector provides that the Union must adopt water availability as one of the eligibility and priority criteria for the application of resources, in addition to promoting the eligibility and priority criteria for the application of resources, in addition to promoting the institutional development of basic sanitation, stimulating the establishment of adequate regulation of services and encouraging the adoption of planning, regulation and oversight mechanization. However, there is a risk that the application of federal resources in sanitary exhaustion will not adopt criteria that consider the quantitative conditions of water resources. In this way, the federal policy of basic sanitation tends to have limited effects in inducing the increase of water availability and in the improvement of the environment. 202. With regard to efficiency in the use of water, attention is drawn to the high loss rates in distribution networks in most Brazilian municipalities. Cities with a pattern of excellence have rates of less than 15%. In Brazil, the average loss in 2013 was 37%, equivalent to 5.95 billion cubic meters, or almost six times the capacity of the Cantareira System (OLIVEIRA et al., 2015). 203. The classic recipe for loss reduction is the replacement of old networks, sectorization, pressure reduction, improvement of micro and macro metering, update of customer registration and fight against fraud. It is noted that several of these measures have a high cost, require planning and good technical and operational capacity, and most of the providers of sanitation services face serious institutional constraints and depend to a large extent on the transfers from the Union to carry out investments. 204. In 2013, only 1.8% of federal public spending on basic sanitation was allocated to institutional development, a category that includes actions such as the purchase and installation of hydrometers, modernization of the accounting structure and information

technology, and commercial actions for non-compliance In this way, investments in the training of sanitation operators and in actions to combat losses in public supply networks continue at a rate below ideal. 205. In addition, insufficient incentives were found to induce the rational use of water. The collection for the use of water resources was instituted with that objective, but the prices practiced in the country are too low to show the economic value of water and induce changes in the behavior of users. In addition, the country does not adopt a water efficiency labeling system that encourages consumers to buy and the industry to produce products that consume less water, and regulatory gaps inhibit the use of reuse water for non-industrial purposes. 206. Finally, it is highlighted that the bodies that manage water resources have a low fiscal capacity. In this way, there is a risk that they will not be able to detect and inhibit violations to measures of restriction of use decreed to contain the water demand. 207. The federal government can play an important role in promoting the efficient use of water. In this sense, the effort aimed at the institutional development of the providers of basic sanitation services must be prioritized, giving special support to actions aimed at reducing losses. Another front of action is in the development of instruments to encourage the rational use of water resources, mainly through initiatives that fill legislative gaps that inhibit actions such as water efficiency labeling and reuse. Lastly, control mechanisms must be improved, and the federal government must seek ways to cooperate with state water resources bodies. 6. BENEFITS OF EXTERNAL CONTROL ACTIONS 208. Among the benefits of this control, it is possible to mention the one indicated in item 42.5 of the Guidelines for control benefits that appear in the annex of the Ordinance - Segecex 10, of 30/3 / 2012, which refers to the "increase in the economy, efficiency, effectiveness or effectiveness of the government program. "7. PROPOSAL FOR ROUTING 209. In view of the above, the report is submitted to the higher consideration proposing: I) recommend to the Civil House of the Presidency of the Republic that, in coordination with the Ministry of Integration National and the ANA, adopt the necessary measures to enable the development of a national drought policy based on risk management, II) determine the Environmental Sec- rex to evaluate incorporating in the planning of its external control actions the proposals presented in the Appendix 1; In accordance with the provisions of the article of the United Nations Convention on the Law of the United Mexican States, the Committee on the Environment, Defense of the Consumer and Supervision and Control of the Federal Senate, the Committee on the Environment and Sustainable Development of the Chamber of Deputies, the National Council of Water Resources, the Comptroller General of Unió n and the 4th Chamber of the Federal Public Ministry; IV) to route, by electronic means, the integral versions of the problem tree and the timeline of the regulatory actions related to the Cantareira System, to parts 17 and 18, respectively, for the recipients mentioned in the previous section; V) archive the present procedure. 3. In the case of the concluded cases to the Rapporteur, it was identified that, after the conclusion of the aforementioned survey report, Law No. 13,153 of July 30, 2015 was published, which established the National Policy to Combat Desertification and Mitigation of the Effects of Drought, in addition to establishing its instruments and foreseeing the creation of the National Commission to Combat Desertification, so that,

through Dispatch to Part No 40, I determined the restitution of the cars to the Environmental Secex so that it could analyze the repercussion of that norm on the conclusions and the proposal of the technical unit, with the presentation, in its case, of new proposal of fund. 4. Therefore, the federal auditor initiated, in order, his merit instruction to Part No. 41, with the consent of the leaders of the SecexAmbiental (Parts 42 and 43), in the following terms: "(.. .) Law 13.153 / 2015 is derived from Senate Bill No. 70 of 2007, which had the objective of preventing and combating desertification and mitigating the effects of drought in areas susceptible to desertification. Desertification is defined as a process of environmental degradation caused by the inadequate management of natural resources in arid, semi-arid and sub-humid lands, which compromises productive systems, environmental services and the conservation of biodiversity. , in addition to parts of Minas Gerais and the Holy Spirit, in line with the United Nations Convention to Combat Desertification and Mitigate the Effects of Sec (UNCCD), of which Brazil is a signatory and which deals with the problem specifically in drylands, the focus of the bill was the protection of the Brazilian semi-arid. 4. With the advent of the water crisis, the bill was amended by the replacement of the Chamber of Deputies No. 1, incorporating some broader objectives, such as prevention, adaptation and mitigation of the effects of drought in all the national territory (Article 3, paragraph II). However, the focus of the law remains on the protection of areas susceptible to desertification, as can be seen from the principles established in art. 4th and the instruments provided in art. 6th: 'Art. 4. The National Policy to Combat Desertification and Mitigate the Effects of Drought must comply with the following principles: I - integrated and participatory management of federated entities and communities located in areas susceptible to desertification in the process of development and implementation of actions to combat desertification and land degradation; II democratization of knowledge on the subject of combating desertification, particularly in terms of access to natural resources; III - incorporation and valorization of traditional knowledge on the sustainable management and use of natural resources; IV - articulation and harmonization with public policies thematically related to the purposes of combating desertification, especially those dedicated to the eradication of poverty, agrarian reform, the promotion of conservation and the sustainable use of natural resources; V - promotion of synergy and harmonization between the United Nations Convention to Combat Desertification and mitigate the effects of drought, the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change. (...) Art. 6º They are instruments of the National Policy to Combat Desertification and Mitigate the Effects of Drought, particularly those resulting from compliance with art. 4th of this Law e: I - the Brazilian Action Plan to Combat Desertification and Mitigation of the Effects of Drought, aligned with the guidelines of the United Nations Convention to Combat Desertification and Mitigate the Effects of Dry - UNCCD; II - the State Action Plans to Combat Desertification and Mitigate the Effects of Drought; III - the Annual Implementation Report of the UNCCD in Brazil, containing: a) the evaluation and monitoring of the Brazilian Action Plan to Combat Desertification and Mitigate the Effects of Drought; b) the state of the affected areas; c) the state, quality of life and socioeconomic conditions

of the affected population; d) the state of the art of the plans, programs, objectives, initiatives, projects and actions underway in the affected areas; IV - plans, programs, objectives, initiatives, projects and actions aimed at the recovery of degraded areas; V - sustainable forest management plans; VI - the early warning system of drought and desertification; VII - Economic ecological zoning - EEZ; VIII - the creation of conservation units; IX - Plans of Prevention and Control of deforestation (taps in the original). 5. For treating only generically the mitigation of the effects of drought, Law 13.153 / 2015 did not bring an integrated vision of risk management in the model of the guidelines indicated in the document National Drought Management Policy Guidelines . As seen in the relay, the document elaborated by the program of the United Nations Organization for Integrated Drought Management (IDMP), points to the need for a change in the paradigm of confronting droughts and details the process of construction of drought. a national strategy focused on the identification and systemic treatment of the risks inherent in water scarcity, through preparedness and adaptation actions aimed at reducing the impacts of its effects. 6. In fact, the ten steps suggested by the National Drought Management Policy Guidelines document for the construction of a national drought policy (see paragraph 3.2.1 of the survey report, part 38, page 24-25) are not addressed by the Law 13.153 / 2015. The first of these steps is the creation of a commission to manage the national drought policy. The National Commission to Combat Desertification (CNCD), provided in art. 7 of the referred norm, already exists in the scope of the MMA, being created by Presidential Decree of 21/7/2008. However, neither the law nor the decree attributes to the aforementioned commission, which has a restricted focus on areas susceptible to desertification, to coordinate inter-ministerial actions necessary for prevention and response to regional droughts. Therefore, this commission does not replace the one recommended by the IDMP. 7. It is concluded, therefore, that the publication of Law 13.153 / 2015 does not affect the conclusions and the routing proposal of the present uprising. This understanding is corroborated by the fact that the Civil House has not made reference to that norm in its manifestation, on the occasion of the comments of the managers in response to the issues indicated in the preliminary report. 8. In view of the foregoing, the documents are submitted to the higher consideration, proposing to maintain the proposal for the report to be routed to part 38. "This is the report, which is a survey on the federal management of the water crisis, in compliance with the determination of the TCU, with the objective of "identifying, above all, the preventive measures and the contingency plans that have been or should have already been adopted to avoid or even to reduce the effects of the current water crisis that is ravaging the country" (Piece No. 1) In the Communication to the Plenary that resulted in the aforementioned determination of the TCU, I warned about the risk to the water supply in the Southeast region, highlighting the predominantly national interest, guided by the occurrence of longer dry spells and exhaustion of water resources in more than one unit of the federation, with the consequent fixing of the competence of the Union, as the main actor, for the management of the a water crisis, especially in light of the powers of the Ministry of the Environment (MMA) and the National Water Agency (ANA) National Water Resources Policy (PNRH). The PNRH, instituted by Law nº 9.433, of January 8, 1997 (known as

the Water Law), aims to: (i) ensure the availability of quality water to present and future generations; (ii) promote the rational and integrated use of water resources, with a view to sustainable development; and (iii) prevent and defend society against critical hydrological events (droughts and floods), with natural origins or derived from the misuse of natural resources. Despite this, the present study contemplated the vision of managers not only of the MMA and the ANA, but also of the Ministry of National Integration (MI), of the Ministry of Science, Technology and Innovation (MCTI), of the Ministry of Cities (MCidades) and the Civil House of the Presidency of the Republic, as well as state managers and specialists involved in the water issue. As it has been seen, the report prepared by the inspection team of the Secretariat of External Control of Agriculture and Environment (SecexAmbiental) pointed out as the main causes of the water crisis the insufficient supply and the high demand, whose imbalance provokes shortages, economic losses , loss of biodiversity and even an increase in water pollution (see problem tree, to Pieza nº 17). In the case of Brazil, the largest reserve of fresh water in the world (12% of the total), but this availability is unequally distributed in the territory, with about 80% concentrated in the Amazon, a place of low population density, while the regions more in the Southeast and in the Northeast face variable degrees of water insecurity, especially since 2012, with the intense reduction of rainfall, directly affecting the levels of the deposits and the various water uses, especially the human supply, irrigation and irrigation the production of electrical energy. While the deposits of the Northeast fell from 61.7% to 25.3% in 3 years, the year 2014 marked the Southeast with an extreme drought, so that the contribution basins of the main reservoirs of urban supply in the region, System Cantareira (in SP) and the systems of the Paraíba del Sur (in the RJ), had precipitations close to the lowest those already registered. The consequences of the water crisis pose an even greater concern when it is observed that science draws a more serious horizon, with the expectation of an increase in the frequency, severity and duration of droughts, as a result of climate change, dramatically affecting the supply of water, while it is estimated that water demand should increase by 55% by 2050.

This concern has been scored in the "High Level Meeting on National Policies for Drought", promoted in March 2013 by various world organizations, the UN, whose focus was the reduction of social vulnerabilities (for communities and sectors), when it was concluded by the need for change in the paradigm of confronting droughts. In fact, there is a certain consensus that situations of water insecurity require adequate confrontation by governments and society, and that the current climate situation on the planet does not allow only reactive and emergency measures (crisis management).), practiced under the effect of scarcity, so that the resilience of the water resources management systems becomes urgent, through previous mitigation actions (risk management), preparing for the crisis situation. While crisis management tries to recover the conditions in force before the drought, risk management identifies existing vulnerabilities (sectors, regions, communities or risk groups), treating the risks systematically, with actions of preparation and adaptation, to reduce the effects of future droughts, within a more complete vision of protection of water resources. The main

finding of the present audit is the verification that the management model used in Brazil to deal with situations of water scarcity is not adequate, since, historically, the government has adopted the crisis management model, for face situations of drought, traced mainly in reactive actions (triggered after the occurrence of a disaster). In the Northeast region, for example, the drought has been confronted basically with emergency actions that involve the operation of pipe cars, the construction of cisterns, the drilling and recovery of wells, the sale of corn for the feeding of herds and even the aid to the farmers of municipalities in emergency situation or of public calamity (Bag of Estiaje), standing out that the actions of infrastructure (construction of systems adductores and dams, among others) have shown insufficient and even inadequate to avoid episodes more acute water scarcity. On the other hand, this model of crisis management was also verified in the present survey, as can be seen from the chronology of measures adopted by the various government actors in relation to the low flows of the Cantareira system, between January 2014 and May 2105 (v. Timeline relating the reservoir level with regulatory actions and other events, to Piece No. 18). The Cantareira, by the way, is the largest water producing system in the Metropolitan Region of São Paulo and, at the beginning of the severe drought, it responded by supplying nearly 9 million people, highlighting that, in 2014, the system had the month of January (normally the rainiest period) as the driest of the historical series, so that the average flow affluent to the system in that year registered the value corresponding to about 22% of the historical annual average and of the 40% the average flow of the year 1953, until then the lowest average annual flow. Among the various actors involved in this crisis, the performance of the ANA is highlighted, which, from a meeting between the Governor of São Paulo and the Minister of State for the Environment, on 2/2/2014, created, technical group to accompany daily the data of the reservoir and its structures, recommending measures of restriction or suspension of water uses to users under the influence of the system. In this regard, on 5/16/2014, the ANA and the DAEE authorized the use of Technical Reserve I (Dead Volume I), increasing the availability of the system, but on 11/17/2014 it was necessary to authorize the use of the Reservation And in the case of a change in the quality of health services, it should be taken into account that, in most cases, the alert states and conditions of restriction of use for the capture of water in the basins of the rivers Jaguari, Camanducaia and Atibaia, with the reduction of 20% in the daily volume granted for human consumption and animal drying, and 30 % for industrial use and for irrigation, being able to reach the paralysis of other uses. In the Paraíba del Sur basin, which supplies the Metropolitan Region of Rio de Janeiro, the action of the ANA occurred in conjunction with the National System Operator (ONS), or

which is responsible for the coordination and control of the operation of the electric power generation and transmission facilities, since that basin is also important for the generation of electric power, so that the ONS operated the hydroelectric power plants deposits, obeying the minimum agreed flow rates ANA. In the framework of the global economic crisis, most countries in Latin America and the Caribbean have become one of the largest companies in the construction sector, increasing consumption (see page

18). It will be noted that, at the end of 2014, after the meeting between the governors of the region with the President of the Republic, the Civil House began to act, through the Sub-School of Articulation and Monitoring (SAM), and that resulted in the determination to the Ministry of Cities and the Ministry of Planning, Budget and Management (MP) to prioritize, even in 2015, works projects aimed at increasing water supply in the region, so that the SAM has been accompanying the issue ever since Regular meetings with the representatives of various ministries related to the matter. This articulation reaches, for example, the National Secretariat for Civil Defense and Defense (Sedec / MI), responsible for the coordination of civil defense actions throughout the country, which, however, take place after the state decree. of emergency, highlighting - that no state government decreed the emergency in the Southeast region and only the Municipality of Tambaú / SP adopted that measure, so that the civil defense system was only activated for that case. In the framework of the global economic crisis, there has been an increase in the prices of raw materials and prices of raw materials. and in particular, on the Cantareira system, with the installation of thirty rain gauges to collect data in the headwaters of the tributaries of the dams of the system, which made it possible to send weekly reports to the Civil House of the Presidency of the Republic. June 2014, which are being published by Cemadem on the internet, since January of that year. As can be seen, the initiatives reported by SecexAmbiental to face the drought are much more framed in the crisis management model, enhanced by the difficulties of integration and coordination of actions, as well as a non-existent structured approach to increase resilience of the national water resources management system to deal with future crises, which represents a high risk in view of the increase in extreme events. This finding was corroborated by the secretary of Regional Development of the MI, in whose unit the new strategy based on the experience of other countries, such as the United States, Spain and Australia, would be initiated, so that this new strategy of confronting the drought would have support in three pillars: (a) monitoring for early warning and for subsidizing decision making; (b) mapping of vulnerabilities and evaluation of impacts; and (c) planning and preparation. In this way, the MI would be developing, in the first pillar, the Dry Monitor tool, with the aim of integrating information produced by several federal and state institutions, whose forecast for the completion of the pilot project is one year, allowing, then, , the mapping of the risks for the Northeast region, in up to three years, and for the Southeast, in up to four years. Along these lines, there would also be two other relevant actions in the field of the MMA and the MI, namely: the National Adaptation Plan (PNA) and the National Water Security Plan (PNSH). The NAP, under construction in the scope of the Interministerial Committee on Climate Change (Decree No. 6,263 of 2007), with the aim of structuring government measures to adapt to climate change in various sectors and activities, is being subsidized by the studies carried out by the Water Network, created with representatives of government and society, highlighting that these studies indicate that water resources management must incorporate a context of growing uncertainties, adapting its institutional organization and its instruments, for example contingency plans with alert levels, harm reduction measures and institutional arrangement to implement the aforementioned measures. The PNSH, jointly drafted by

the MI and the ANA, with a deadline of two years, aims to define the main structuring interventions to guarantee the supply of water for human supply and for other uses throughout the country, such as such as dams, adducer systems, channels and integration axes, in order to reduce the risks associated with critical events (droughts and floods), with the following critical areas: Northeast of the city of Buenos Aires and the Buenos aires city. It is important to note that the governments of SP, MG and RJ closed at the end of 2015, with the intervention of the ANA and the Supreme Federal Court, the shared management agreement of the Paraíba del Sur river, establishing minimum flows for deposits and changing the priority of the generation of electric power for human supply, highlighting that this agreement will also allow the interconnection with the Cantareira system (the work should be ready only in February 2017) and the transposition of river waters to serve the Greater São Paulo. It is also worth noting the recent edition of Law No. 13,153 of July 30, 2015, which establishes the "National Policy to Combat Desertification and Mitigation of the Effects of Drought", which also does not show enough to change the country according to the analysis promoted by SecexAmbiental (v. Piece nº 41), since it focuses on the protection of areas susceptible to desertification (in the Northeast and in the States of MG and ES), of luck that the policy, even to treat generically the mitigation of the effects of the drought, does not establish the process of construction of the integrated strategy for risk management, with a focus on the identification and systemic treatment of the risks inherent in the shortage water throughout the national territory. In fact, despite the fact that there are actions with a proactive approach, as verified in the present audit, which is the result of learning from the crisis, there are still obstacles to be overcome, starting with the understanding that the lack of a specific national policy for the drought or integrated strategy to manage the growing risks of water scarcity throughout the country consists of serious failure, deserving the urgent prioritization and effective collaboration of several federal, state and municipal bodies and entities, since the current legal framework foresees decentralized management and, at the same time, competitor of water resources. In this line, to identify the potential of the aforementioned policy in conferring greater resilience to the water resources management system, to better prepare it for future crises, this study addressed two sets of relevant risk events, whose main conclusions are summarized in the following sections, namely: (i) the effects of organic pollution on water availability (on the supply side); and (ii) the promotion of the efficient use of water resources (on the demand side). In Brazil, water pollution is directly related to low levels of wastewater collection and treatment (according to the diagnosis made by MCIAS in 2013, only 39% of the sewers generated are treated), as such Thus, the high organic load released in rivers, particularly in the metropolitan areas of SP and RJ, as verified in this survey, affects the availability and quality of water, in addition to raising the costs of treatment and public supply. Despite not exercising the ownership of sewerage services, the Union has a fundamental role in inducing the development of the sector, through the transfer of financial resources, the encouragement of regulation of services and support for institutional development, as well as as well as the articulation between bodies and entities of the different spheres of government that have an interface with the subject,

even because the sanitation sector has a complex and fragmented arrangement, with emphasis on the role of the municipalities, as a planner, regulator and oversight. At the federal level, sanitation actions are carried out by several bodies and entities, with emphasis on MCidades, MI and the Ministry of Health (MOH), in the context of Law No. 11.445 (National Basic Sanitation Law - LNSB), 2007, and (Basic Sanitation Plan (Plansab), highlighting that the MCIAS is developing the National Information System on Basic Sanitation (SIS) to replace the current system (SNIS), implemented in 1996 and containing data reported by the providers of water and sewage services and solid waste management The Union budget for basic sanitation reached the amount of R $ 14.4 billion in 2013, underlining that 42% was allocated to supply and less than 12% to the component of sanitary exhaustion, which explains, in a certain way, 84% of households served in the country with a water network against only 56% with a wastewater collection network (data from 2015, to Piece No. 23), remembering, in addition, s, that relationship gets much worse in the North (58% versus 13%) and Northeast (78% vs. 35%). The regulatory framework of the sector provides that the Union must adopt water availability as one of the eligibility and priority criteria for the application of federal resources, in addition to promoting the institutional development of basic sanitation, encouraging the establishment of adequate regulation of services and encourage the adoption of planning, regulation and oversight mechanisms. The audit conducted by the TCU in 2014 (Sentence 593/2015-Plenary) already corroborated what was identified in the present survey, in the sense that the main causes for the low rate of collection and treatment of wastewater consist of: (i) insufficient infrastructure, determined by reduced investments, failed projects and undersized rates; and (ii) deficiencies in the institutional capacity of the states and municipalities, reflected in failures in the management of the resources reviewed by the Union, especially in the preparation of plans, diagnoses and projects, as well as in the execution and supervision of the works . It is observed that, although the increase of the infrastructure involves the improvement of the management capacity of the subnational entities, it was observed in the aforementioned inspection that the Union disbursed in 2013 only 1.8% of the total disbursement in basic sanitation in the modalities "Institutional Development" and "Studies and Projects", which correspond to approximately R $ 211 million. On the side of the implementers of the sanitation policy, it was verified that the current tariff levels are insufficient for the investment needs of the sector (13 of the 28 service providers have expenditures greater than revenues), affecting the quality of the services and the willingness of the population to connect to sewer networks, even when they are available. It is observed that the level of organic contamination of the springs is also associated with the low prioritization of investments in infrastructure in critical fragments, revealing a possible descasamiento between sanitation policies and those of water resources management, especially in the stretches of rivers under water in the Union, whose capacity is exhausted for new grants of launches, for the contribution of poor quality waters from rivers of state dominance, highlighting that, although the ANA acts in the regulation and in the development of studies to subsidize health the application of resources, for example the Atlas of Health Depletion, the leaders claim that the agency would have limited capacity of influence with the other sectors of the

federal government and the units of the federation . In this way, there is a risk that the application of federal resources in sanitary exhaustion is not being guided by criteria that consider the adequate conditions of water resources, quantitatively and qualitatively, in such a way that the federal policy of basic sanitation tends to have limited effects in the induction of increased water availability, even more so because there are no permanent forums for intersectoral discussions that can align the most relevant strategic plans, such as PNRH and Plansab. It is noted, therefore, that the reduction of pollution in springs and rivers can increase the supply of water for various uses, contributing to reduce the effects of drought, notwithstanding highlighting that the operational audit is already under way , (in the framework of the TC 017.507 / 2015-4, having the reference panel was carried out on 12/10/2015), with the objective of evaluating the federal actions related to sanitary sewer services, whose results may subsidize the policy drought and contribute to the more efficient management of water resources. - III - Promotion of the efficient use of water resources In relation to the efficiency in the use of water, the survey draws attention to the high rates of losses in the distribution networks in most Brazilian municipalities, since in the country, the average loss, which has become one of the most important in the construction sector, in the construction sector, and that the Amazon has the worst index, with 77% of the water available lost in the distribution, before reaching consumers. It is observed that the reduction in the average loss rates in recent years has been small, as seen in the present audit, highlighting that, between 2004 and 2013, the fall in the turnover loss index was just 0.35 % (in the year 2080). The losses are divided into: (i) real, also known as physical losses, and refer to all water available for distribution that is not reached by consumers, due to leaks in adductors, networks, extensions, connections, reservoirs and other operating units of the system; and (ii) apparent or non-physical, related to the volume of water that was actually consumed by the end users, but that for some reason was not accounted for (measurement error, clandestine connections, etc.), generating a loss of billing for the service provider services. The classic solution for loss reduction consists of the subsection of old networks, sectorization, pressure reduction, improvement in measurement, update of customer registration and fight against fraud, but several of these measures have high costs, demanding planning and good technical and operational capacity, and most sanitation service providers face serious institutional constraints, depending heavily on transfers from the Union to make investments. Countries that face water scarcity have adopted several solutions to promote the efficient use of water resources, among them, they highlight: the adoption of economic incentive instruments for the control of demand; the creation of water efficiency labeling systems; the granting of subsidies for the adoption of rational water use practices in the urban sector, industry and irrigation; the realization of awareness campaigns for the population; the use of reuse water; and the fight against losses in the supply network. It is observed that, as seen in the previous section, the federal expenditure for institutional development, a category that includes actions for the purchase and installation of hydrometers, modernization of the accounting structure and reduction of delinquency, was rather timid (only 1 , 8% of the total in 2013), so that investments in the training of sanitation operators and in actions to combat losses in the

public supply networks continue at a rate below the ideal, even because the improvement in infrastructure it consists of obligation of the holder of the service, not of the Union. In addition, the insufficiency of incentives to induce the rational use of water was found, since the prices practiced in the country would be low to the point of not showing the economic value of water and not inducing changes in user behavior, since Brazil does not adopt the water efficiency labeling system to encourage consumers to buy (and the ap industry (in the case of a change in the quality of food), the products that consume less water, in addition that the current regulations present gaps that inhibit the use of water for reuse (recycling) for public supply, while there is no agile mechanism to readjust the value charged for water (raw and treated) in periods of drought. Water resources management bodies have presented low auditing capacity to stimulate the rational use of water, so there is a risk that they will not be able to and detect and inhibit violations to measures of restriction of use decreed to contain the demand (the ANA, for example, has 14 prosecutors in Brasilia to oversee the entire country). As can be seen, the federal government can and should play an important role in promoting the efficient use of water, directing its efforts for the institutional development of service providers and supporting actions aimed at reducing losses, creating of instruments to encourage rational use, mainly through initiatives that fill legislative gaps that allow the labeling of water efficiency and reuse for other purposes than not only the industrial one, standing out, moreover, that it corresponds to the federal government to seek forms of cooperation with the organs and state entities with a view to the effective control of water resources. In short, water is a limited natural resource, essential to life, and endowed with economic value, so it must be used in a sustainable manner, requiring the effective action of governments, as verified in this survey not only in the increase of water supply, but also in the sense of managing demand, stimulating rational use and combating waste. Despite the atypical nature of extreme drought, science warns that countries must prepare decisively to face more intense and more frequent climate events (see Reports of the Intergovernmental Panel on Climate Change - IPCC and the Brazilian Panel on Climate Change). - PBMC), as the increase in the occurrence of torrential rains of short duration, interspersed with longer and warmer dry periods. The present study showed that the country is not yet prepared to deal with this new climate and with the consequent water scarcity, although important initiatives have been identified (PNRH, PNA, PNSH, Plansab, Sinisa, Atlas of Health Depletion, products of the Red Water and the Cemadem, as well as the recent policy of prevention and combating desertification), which, however, are still disjointed and focus more on the effects than on the causes, even because there is still no policy or a structured national strategy to increase the resilience or capacity of the water resources management system to prevent and mitigate crises, anticipating increasing adversity through preparation and adaptation constant. It is noted that, from international studies and experiences, the UN coordinated the preparation of the National Dr Guidelines should management policy, suggesting 10 steps for the development of national policy for drought, namely: (1) create committee of policy management; (2) define goals and objectives based on risk assessment; (3) seek the participation of the stakeholders and resolve conflicts between user sectors, considering the cross-border implications; (4)

catalog the available data and financial resources and identify the groups at risk; (5) make explicit the key points of the national policy and of the preparedness plans, including monitoring and forecasting, prior warning, impact and risk assessment, mitigation and response; (6) identify research needs and fill the institutional gaps; (7) integrate political and scientific aspects of drought management; (8) publicize the national drought policy and preparation plans, promoting social awareness; (9) develop educational programs for all ages and user groups; and (10) evaluate and revise the national policy, supporting drought preparedness plans. This guide, published in 2014 by the program of the United Nations Organization dedicated to integrated drought management (IDMP), provides the model for action for formulators and public policy makers to build a national strategy to manage causes of water scarcity and to mitigate its effects, so that Brazil would have actively participated in this global effort, through representatives led by the Minister of National Integration, since the high-level meeting held in Geneva in Switzerland in March 2013 , until the workshop held in Fortaleza / CE, in December 2013, aimed at supporting and committing the countries of Latin America and the Caribbean in the planning of national policies for drought, in accordance with the process suggested in the aforementioned guide. On that occasion, the Brazilian government announced several actions to change the paradigm in the management of water scarcity, including the organization of a formal process for the discussion and preparation of the national policy for drought, involving the various spheres of government, which would represent a unique opportunity for the country to achieve significant progress in preparing for the drought and building resistance to deal with extreme situations over the next few years. As can be seen, the first challenge for the adoption of this risk-based action model is the articulation and coordination of the various actors involved in order to elaborate a comprehensive plan, not only with the indication of those responsible and the measures to be taken in the imminence of certain critical events or in situations where there is still time to avoid major damage, but also with the integration of initiatives already under development and of others necessary for the protection of national water resources, prioritizing the most significant, even more because the actors involved face constant material and budgetary limitations. According to the information gathered by SecexAmbiental, the actions to structure the national strategy for drought are concentrated in the IF and in the MMA (including the ANA), but the elaboration and implementation of that policy would require a broader effort and articulated by the government in a way that encompasses the performance of other actors and guarantees more consistent results, in such a way that, in this institutional arrangement, it would fit the Civil House of the Presidency of the Republic, within its attribution of coordination of the interministerial actions and integration of central government policies, mobilize bodies and entities of government and society whose performance is correlated to the confrontation of water scarcity, for the realization of this plan. In this way, the recommendation proposed by the SecexAmbiental

it is relevant, considering that multiple actors, in various spheres of government, should foresee coordinated forms of action, so that the Civil House would be entitled to adopt the necessary measures to make the implementation of it viable. the national policy for

drought, based on risk management, articulating and coordinating efforts of federal bodies and entities involved in water resources management (not only MMA, MI, MCIAS and MCTI, but also other ministries, such as: Agriculture, Livestock and Livestock, with the capacity to mobilize the participation of the federation units and representatives of civil society, which have relevant interests and responsibilities (direct and indirect) in relation to the protection of water resources. In case there is a change in working conditions, it should be taken into account that, it will compete advising the Presidency of the Republic in the coordination and evaluation of the actions of the elaboration of a national policy of drought based on risks. It is seen, however, that the intervention of that governing body would not invade the competences of the other federal authorities, even because the Union's action on water scarcity would not be restricted to this or that body or entity, noting that "the process of building this type of national strategy requires the political will at the highest level for coordination and the supervision of the other levels of government and the mobilization of other stakeholders, with effort, at least, to the same degree of relevance of priority government programs, such as the Growth Acceleration Program (PAC), or same degree of articulation for the realization of major sporting events based in the country, such as the 2014 FIFA Cup and the 2016 Olympic Games. It is recorded, however, that the public policy to be developed, as a national strategy to deal with the unavailability water, must consider measures to act in the causes of the crisis, for example, the effects of organic pollution and the prom of the efficient use of water resources, with a view to mitigating the deleterious effects of the drought that already threaten the populations and the economy of the country, in such a way that this national strategy tends to impact other public policies (such as: solid waste ; sanitation; civil defense, etc.), with evident reflections in the performance of federated entities, as well as economic agents interested in the various uses of water. On the other hand, the disaster occurred in Mariana / MG, on 11/5/2015, with the breaking of the mining waste dam that buried two villages in mud and contaminated almost all of the Dulce River (important basin in the east of the country). , showed dramatically the high cost of low investment in risk management and prevention, since, on the same occasion (12/11/2015), the Institute of Socioeconomic Studies (Inesc) identified that there would have been retraction of more than 50% of the resources applied by the Department (DNPM) in the control program of mining activities (from January to October 2015, in relation to the same period of 2014), so there would have been a contingency of 43% in the program budget of risk management and, response to disasters, by the MI. I emphasize, then, that the situation is serious and urgent. The Northeast region experiences the worst drought in more than 50 years. Where previously there was a little water, now it completely disappeared, also reaching other states. Recent studies suggest that almost 5% of the 11 affected states (about 70 thousand km2, equivalent to 3 times the size of Sergipe) have desert characteristics and that area can increase even more, since 16% of the national territory is susceptible to desertification. The Southeast, the most populated and industrialized region, despite the current improvement in hydrological conditions, also began to feel the effects of scarcity water, as seen in this survey, revealing the lack of effective strategies for the management of water scarcity risks, as an example of the causes

associated with the contamination of rivers and reservoirs and the inefficient use of water. In spite of the heavy rains of the first quarter of this year, which removed the Cantareira from the dead volume and brought encouragement to some of the semi-arid municipalities, the situation should inspire due concern, even more so because the El Niño phenomenon will continue to influence the country's climate in the next months, according to the Working Group on Seasonal Climate Forecast of the MCTI, with forecast of decrease of rains in the North and Northeast and the increase of rains in the South. According to the researcher Paulo Nobre, of the National Institute of Space Research (Inpe), the El, El Niño that is happening now is similar to the phenomenon that occurred in 1997 and 1998, when there was a great drought in the Northeast region, so that the The possibility of an expressive decrease in total rainfall, irregular distribution and periods between broader rains indicates the need for urgent preparatory actions to reduce the impact of the drought. For all this, accompany the proposal of the specialized technical unit, without prejudice to highlight in the operative part of the present deliberation some essential aspects that delineate the construction of the national policy or strategy for drought, based on the philosophy of reducing risks, according to the excellent diagnosis presented in the present audit of the TCU. Otherwise, it is opportune to send a copy of the present deliberation and of the Parts on the 17th and 18th to the addressees indicated in the proposal of the technical unit, at the time in which I praise the brilliant survey work conducted by the federal auditors of La SecexAmbiental (Bruno Oliveira Tavares de Lyra, Carlos Rafael Menin Simões, Marcelo Cardoso Soares and Marcos Rezende de Campos Souza), under the coordination of the Director Fernando Antônio Dorna Magalhães and the supervision of the Secretary Junnius Arifa. Given the above, propose that the sentence that is submitted to the College be prohibited. Within the framework of the United Nations Conference on Climate Change.

THE REPUBLIC OF CHILE

Supreme Court Judgment, May 22, 2018

Author: Pilar Moraga Sariego, Associate Professor, Faculty of Law of the University of Chile, Center for Environmental Law

Author: Verónica Delgado Schneider, Associate Professor, Faculty of Legal and Social Sciences, Universidad de Concepción

Author: Laura Farias. Full Professor, Faculty of the Faculty of Natural and Oceanographic Resources, Department of Oceanography, University of Concepción

Source: Supreme Court Judgment No. 34.594-2017

Key issues: Protection action, prevention and precaution principle, effect on the constitutional guarantee to live in a pollution-free environment; environmental damage

Summary:

A group of fishermen present constitutional protection action, alleging illegality and arbitrariness of the act consisting in the authorization of dumping of 9,000 tons of dead and advanced decomposition salmon into the ocean, granted by the General Directorate of the Maritime Territory and Merchant Marine of Chile (DIRECTEMAR) through two resolutions, Resolution Ord. No. 12,600 / 05/114 / VRS and its supplement No. 12,600 / 05/124 of March 4 and 14, 2016; This decision was also attended by the National Fisheries and Aquaculture Service (SERNAPESCA), which issued a favorable technical report on March 4, 2016. The activity materialized on March 11, 2016, which would have been carried out without the proper control of the health authority (Regional Ministry of Health of the Los Lagos Region) as the environmental one (Ministry of the Environment and Superintendence).

The main questions raised to these authorities (maritime, fishery, health and environmental), relate to the lack of technical grounds to resolve as they did, and the failure to comply with their legal and regulatory obligations to control polluting activities and risky for human and animal health, and for the environment.

The Supreme Court accepts the action and argues that the actions of the respondents deviates from the environmental and health legal regulations and therefore, undermines the constitutional guarantee of Article 19 n ° 8 that enshrines the right to live in a pollution-free environment . It is ordered the adoption of preventive, corrective and coordination measures of the procedures by which each should be governed, within two months, providing a timely and effective reaction to avoid risks to the health of the population and damage to the environment, which will be reported to the Court, and should, in any case, continue scientific and administrative investigations that contribute to the establishment of measures that tend to prevent the repetition of what happened

We emphasize the following recitals:

Third: That, among the grounds of the resolution appealed, are those issued by Sernapesca, Exempt Resolutions No. 1,340 and No. 1,359, of February 29 and March 1, 2016, issued on the basis of having filed a situation of FAN or harmful algal blooms that caused a great mortality of salmon in 45 culture centers, with an approximate biomass of 12,700 tons, as a result of having decreased the oxygen in the water due to the indirect effect of the explosive increase and senescence of microalgae, stating that It dealt with a case of force majeure and authorized the adoption of exceptional measures for the disposal of dead fish since the salmon companies had reported such an emergency stating that the situation exceeded the ordinary regulatory framework. Then, also at the request of four companies of the sector, the appealed resolution of Directemar was issued, based on the merit of the Technical Report evacuated by Sernapesca, which had been requested by the maritime authority the previous day, and the dumping of the Decomposing biomass in the way indicated in point 2 of the resolution under analysis.

Fourth: That the said Ordinary Technical Report No. 08746 lacks antecedents - because there is no mention of them - that allow us to conclude why it was estimated that 9,000

tons of biomass was the acceptable amount to be discharged into the sea, and not in 5,000 tons, as proposed by the appellant, in a purely exemplary manner, (...).

Fifth: (...) Ordinary No. 08746, consigned among his background that since February 22 of that year, it was known that Reloncaví Seno was observed favorable climatic conditions contributing to the excessive production of microalgae of the genus Chatonella, which caused the salmon to suffocate. However, the same institution, in its Inspection Report of Resolution D.G.T.M. and M.M. Ord. No. 12,600 / 05/114 / RSV, of the Maritime Authority Relating to Salmon Shedding, stated that it was aware of the increase in sea temperature in the area since the month of January and that this created oceanographic conditions favorable to the emergence of the phenomenon so that, when it occurred, "activated its contingency protocols in order to ensure the rapid elimination of mortalities in conditions of maximum biosafety and streamline emergency movements "Of biomass. Consequently, it can be concluded that although there was knowledge of the risk implied by the climatic condition described in the reports, nothing was done to try to reduce its impact on the mortality rate of salmonids, adopting some preventive measure and limiting the aforementioned distribution to provide what is necessary to deal with the health emergency once it has been produced and for the sole purpose of giving final destination to the dead fish.

Sixth: That the same can be said about the actions of the Superintendency of the Environment, which stated in its report that it had not interfered in the granting of the impugned dumping authorization, nevertheless acknowledged having the power to conduct inspections of the centers of salmon farming, adding to his report records of the environmental summaries he instructed (...).

Eighth: That way it is appreciated that the institutions involved omitted to deploy any activity that would lessen the effects that this climatic condition, which was known in advance, could produce on the aquaculture crops, as indeed it happened, and in such a great magnitude.

Twelfth: That, considering the above, it can not but conclude that recital 8 of Resolution Ord. N ° 12.600 / 05/114 / VRS of March 4, 2016 of DIRECTEMAR, which states "that the technical report cited in number 6, indicates that the fish waste is organic and its chemical, physical and biological properties do not affect the aquatic ecosystem, human life in the sea, navigation routes, or the activities of other maritime users ", was unfounded, since the Ordinary Technical Report No. 08746, Request for Shedding to the Sea Salmonchile AG, evacuated by Sernapesca, lacked of any concrete antecedent that would allow reaching that conclusion.

On the contrary, it only expressed that "according to the inspections of the National Fisheries and Aquaculture Service carried out to date, the treatment of mortality has not been investigated. Notwithstanding the foregoing, Sernapesca will verify the non-use of chemical substances in the biomass to be poured. "

That is to say, that there was no certainty about the presence of harmful chemicals in the biomass that had to be discarded, since the studies necessary for this had not been completed, as it flows from the text of the report itself. The same can be said of the procedure of the Ministry of the Environment, also appealed, which alleged lack of competence to intervene, being of the case point that on this authority weighs the duty imposed by Article 70 of Law N ° 19.300 on Bases of the Environment, of ensure compliance with international conventions in which Chile is a party in environmental matters, as occurs in the species, so that it can not be excused from lack of powers to understand preventively in this kind of situations, since it has a legal obligation to do so . The Ministerial Regional Health Secretariat of the Los Lagos Region, in turn, reported that it limited itself to requesting statistical information from industrial landfills in the region and instructing measures for the final destination of the biomass. However, in Resolution Ord. No. 12,600 / 05/114 / VRS of March 4, 2016 and in the Ordinary Technical Report No. 08746 Application for Shedding to the Sea Salmonchile AG, from Sernapesca, clearly states that, on the one hand, it must be proved that the substances that would be discharged should not be dangerous for human life at sea and, on the other hand, that it was a situation of those that qualify to authorize such dumping according to the Convention on the Prevention of Marine Pollution, whose most important requirement is to prove that the waste is more dangerous for human life being on land than at sea; and that it was a public and notorious fact, according to the press information added to the cause, that the decomposing biomass could release gases and acids harmful to human health, in such a way that it was a duty of that service to exercise its powers of control and control at least in respect of the people who were operating the dangerous products in the salmon producing plants and in the ports, but did nothing, according to their own words.

Thirteenth: That, when the dumping by Directemar was authorized, the provisions of article V of Decree No. 476/1977, Ministry of Foreign Affairs, which promulgates the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other matters, were violated. since the maritime authority did not previously verify on the other, that it was a situation of those that authorize such dumping in accordance with the Convention on the Prevention of Marine Pollution, whose most important requirement is to prove that the waste is more dangerous for human life being on land before at sea; and that it was a public and notorious fact, according to the press information added to the cause, that the decomposing biomass could release gases and acids harmful to human health, in such a way that it was a duty of that service to exercise its powers of control and control at least in respect of the people who were operating the dangerous products in the salmon producing plants and in the ports, but did nothing, according to their own words.

Thirteenth: That, when the dumping by Directemar was authorized, the provisions of article V of Decree No. 476/1977, Ministry of Foreign Affairs, which promulgates the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other matters, were violated. since the maritime authority did not previously verify the

concurrence of the requirements demanded by said regulations, thereby violating the precautionary principle that must govern any decision that risks an impact on the life and health of people and animals , or the environment, same infraction in which Sernapesca incurred when issuing the report favorable to the dumping that has been dealt with.

Fourteenth: That, attentive to the above reasoned, it can be concluded that the action of the respondents has departed so much from the legal regulations that regulate sectorial environmental and health emergencies, as well as that which is directly oriented to the protection of the environment, injuring with this conduct the right of the appellants guaranteed by our Fundamental Charter in article 19, No. 8, that is, to live in a pollution-free environment, so that the remedy of protection interposed must be accepted.

Comments from the authors:

The recent ruling by the Supreme Court is related to a phenomenon that caused great commotion at the national level, because although episodes of red tide are a known phenomenon in the Island of Chiloé, its recurrence and impacts are exacerbated by the current climate forcing nowadays.

In this context, it is worth mentioning the need to impregnate the actions of the State administration with a preventive approach, as highlighted by the Supreme Court in the aforementioned decision, but also to question the role of the specialized judiciary in this case, as well as the place of science in decision making.

In relation to the duty of the State bodies to act in a preventive manner in the event of an event that could affect the life and health of people and animals and / or the environment, the Court criticizes DIRECTEMAR and SERNAPESCA for their late intervention, only once the emergency has occurred. This occurs even though the authority was aware of the flowering of microalgae and the increase in sea temperature in the area of Reloncaví, all conditions that favored the massive death of fish, which should have been judgment of the highest Court, object of greater control on the part of the authority.

In this regard, the Court also criticizes the omissions of certain State bodies, particularly the Ministry of the Environment, regarding its legal obligation to ensure compliance with international treaties, which prevents it from excusing its actions in this case. , because the application of the Convention on the Prevention of Marine Pollution is at stake. It also maintains that the Superintendence should have exercised its powers to make inspective visits in the framework of summaries submitted to aquaculture companies.

Furthermore, the highest judicature argues that the health and environmental emergency may even require that the authority adopt measures that do not affect the life, health of

humans and animals, or the environment, in light of the precautionary principle, thus raising the standard of prevention.

In relation to the second issue raised above, it seems pertinent to question the role of the specialized judiciary that met the demand for environmental damage caused by the dumping of dead fish in Reloncaví. Indeed, in a judgment of December 20, 2017, the environmental damage lawsuit filed by the Municipality of Ancud before the 3rd Environmental Court of Valdivia, was dismissed because insufficient proof was given of the existence or probability of the existence of a damage. environmental on the coasts of Ancud, derived from the flowering of harmful algae or red tide. What is interesting in the analysis is the divergence between the argumentative development of specialized justice and the highest Court, in relation to compliance or non-compliance with the London Protocol, since both reach diametrically opposed conclusions. The matter is relevant because it depended on the application of the presumption of responsibility for environmental damage foreseen in article 52 of Law 19,300 that comes in case of violation of environmental regulations (such as the Convention on the Prevention of Marine Pollution) and in otherwise, the need to accredit it. In this case, the Environmental Court of Valdivia, appreciating the evidence, noted that "regarding the action of the authority against international obligations arising from the" Convention on the Prevention of Marine Pollution ", there are" indications "of having made the consultation to IMO as required by art. 8 No. 2 of the London Protocol, for polluting spills in emergency situations ". However, it did not deepen -as the Supreme Court did- the quality of the information provided, which, in the opinion of the Supreme Court, was not sufficient to make the decision to shed dead fish, as required by the London Protocol. In this sense, the Court defines the standard of analysis that deserves the determination of compliance with international treaties by the organs of the State. The latter challenges the specialized judiciary to improve the argumentative technique in the light of respect for the right to live in a pollution-free environment of article 19 n ° 8 of the Political Constitution of the Republic and in order to guarantee the protection of the good Legal protected: the environment.

Finally, the failure in comment referred to the dumping of dead fish in the heart of Reloncaví and the violation of the constitutional guarantee of living in a pollution-free environment, made it clear that climatic forcing, as in this case the flowering of algae, is a context that must be taken into account by the authority when making decisions that may put at risk the balance of the environment. For this it is necessary that these be based on the available scientific knowledge and be adopted in light of the precautionary principle. This is affirmed by the Supreme Court and omitted by the Environmental Tribunal on the basis of a testimonial test that gives an account of the Report of the Red Tide Commission, which argues, for example, that there is no evidence in the sector of Chiloé until mid-April, in contrast to the conclusions of the Supreme Court, which states that the authority was in knowledge at least from February 2016. Such report was prepared by a committee of scientific experts convened by the Ministry of Economy, after the events occurred and triggered the stoppages and obstruction of transport

between the Island of Chiloé and the continent. Although this group could not establish a causal relationship between the shedding and the events of massive blooms of microalgae in the early autumn on the western coasts of the Island of Chiloé; if he gave arguments that this dumping does cause environmental impact and that it is not a recommended practice in any case. In fact, it is known that the flowering of algae (toxic and non-toxic) are natural phenomena that increase with certain conditions associated with climate change, such as, for example, the increase in water temperature, greater solar radiation, and an increase in favorable winds. to coastal outcrops; among others. Added to these climatic factors are anthropic causes such as the well-known eutrophication of channels and fjords in Patagonia due to the sustained increase -for decades- of salmon farming, an activity that involves the entry of organic matter and nutrients that seem to be surpassing the load capacity of these systems.

Such a situation requires at least two essential questions: that there are adequate ways for scientific information to be available in a short time to the authority and citizens so that preventive plans can be adopted (as we do not know if these episodes will be rather permanent) and not only "emergencies") and, in addition, in the Environmental Impact Assessment System (SEIA) they are required to compulsorily assess aspects related to climate variability and synergistic effects in the environment that cause the existence of so many installed aquaculture projects next to each other. It is also essential to "review" those approvals that were dictated by considering different environmental variables and that did not take measures to deal with the new and changing reality of our oceans.

REPUBLIC OF PERU

Sentence of the Supreme Court of Justice - Transitory Civil Chamber of October 20, 2008 (File: 003814-2007)

CASATION PROCEDURE

Compensation for Damages The Parties Agreed to Quantify the Health Damages Produced as a Result of the Mercury Spill. You can not Transfer on Extramarital Rights

Supreme Court of Justice of the Republic

Transitory Civil Room

CASATION 3814-2007

CAJAMARCA

Lima, October 20th

Of the year two thousand eight.-

THE TRANSITORY CIVIL ROOM OF THE SUPREME COURT OF JUSTICE OF THE REPUBLIC; hearing the case number three thousand eight hundred fourteen - two thousand seven, at the Public Hearing of the date, and after the vote was held in

accordance with the law, in accordance with the opinion of the Supreme Public Prosecutor in Civil Matters, issues the following judgment ;

MATERIAL OF THE RESOURCE

It is the cassation appeal filed by Santos Eufemia García Díaz and Antolín Calixto Gutiérrez Saavedra in writing of one thousand two hundred and sixty-seven, against the hearing issued by the Civil Chamber of the Superior Court of Justice of Cajamarca, of sheet one thousand two hundred fifty, its date twenty-eight of May of the year two thousand and seven, which confirmed in part the resolution issued in the Hearing on Procedural Sanitation carried out on March twenty-third of the year two thousand and four, as soon as it declares founded the exception of conclusion of the process by transaction regarding the minor claimant Fanny Jhanett Gutiérrez García deducted by Minera Yanacocha Limited Liability Company, Ransa Comercial Sociedad Anónima and Esteban Arturo Blanco Bar; unfounded exception of conclusion of the process by transaction regarding the minor claimant Carlos Alberto Chávez García deducted by Minera Yanacocha Limited Liability Company, Ransa Comercial Sociedad Anónima and Esteban Arturo Blanco Bar; unfounded the exception of lack of legitimacy to act passive deduced by Minera Yanacocha Limited Liability Company and Commercial Ransa Sociedad Anónima; The exception to the statute of limitations for the action filed by Ransa Comercial Sociedad Anónima and Esteban Arturo Blanco Bar is unfounded; unfounded the exception of lack of legitimacy to act of the claimants Antolín Calixto Gutiérrez Saavedra and Santos Eufemia García Díaz deduced by Ransa Comercial Sociedad Anónima; founded the exception of lack of legitimacy to act of the plaintiffs with respect to the indemnification claim for environmental damage, deduced by Esteban Arturo Blanco Bar, as well as the end that declares the process sanitized;

FOUNDATIONS OF THE RESOURCE

That the appeal was declared admissible by resolution of November 6 of the year two thousand and seven, for the reasons provided in the second and third paragraphs of article three hundred and eighty-six of the Civil Procedure Code, by virtue of which the appellants denounce :

I.-

The non-application of material right norms. Articles five thousand three hundred and five of the Civil Code, since it has compromised on damage to the health of the minor applicant old Fanny Jhanett Gutiérrez García as a result of spilled mercury, which affects their physical integrity and even their lives, and that because they are very personal and extra-patrimonial rights, they are inalienable and can not be transferred or transferred; however, the Superior Court gave value to transactions that have dealt with such rights, although violated the rules denounced and the legal system, being clear that transactions are null and can not serve as support to the objections raised; II.-

The contravention of the rules that guarantee the right to due process, since:

In attention to article four hundred forty-six tenth paragraph of the Civil Procedure Code, only proceeds protect the exception of completion of the process by transaction where the parties have entered into a previous transaction to end a judicial process, so much so that according to articles four hundred fifty-two and four hundred fifty-three fourth paragraph of bounded Procedure Code, the existence of two identical processes requires the existence of a process that has been compromised with respect to the conflict of interests of the parties to be indispensable, and in this case there is no previous or identical process that has culminated with the presented transaction; b.- in accordance with the provisions of article eighty-two of the Civil Procedure Code, the people directly affected by the damage to the environment are originally entitled to act, regardless of the institutions that can promote or intervene in this process, because the aforementioned rule does not grant them exclusivity but only a power, and the jurisprudence of the Constitutional Court must be applied to the File number two hundred and twenty one - ninety seven - AA TC; III.-

The infringement of the essential forms for the effectiveness and validity of the procedural acts, since the tenth subparagraph of article four hundred and forty six of the Civil Procedure Code establishes a mandatory formality, according to which only the exception can be used as a basis for this exception. transaction with which another process has been concluded; likewise, there is another formality that prescribes the fourth paragraph of article four hundred and fifty-three of the aforementioned Procedural Code, under whose virtue the exception of conclusion of the process per transaction will only be founded when a process identical to another in which the parties compromised is initiated, being that in the present case there is no previous process that has culminated with the transactions presented by the defendant when formulating its exception. In addition, the Superior Court has ruled against the jurisprudential criterion of mandatory compliance established by the Transitory Civil Chamber of the Supreme Court of Justice, in the Cassation number seven hundred and thirty-two thousand five (Cajamarca), also followed against Minera Yanacocha, in the which the Supreme Court has established that the exception of conclusion of the process per transaction, will only be covered if a transaction is presented by which an identical previous process has been terminated; Y,

CONSIDERING

First

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That, existing denouncements for defects in iudicando and in proceeding, it is necessary to verify first whether or not this last causal has been configured, because if it is estimated, the referral of the case would be arranged at the corresponding procedural stage, preventing the analysis from being feasible of the material norms on which the resolution appealed is sustained or should have been sustained;

Second

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That, as follows from the review of the proceedings, in the process followed by Santos Eufemia García Díaz (in his own right and on behalf of his minor children Carlos Alberto Chávez García and Fanny Jhanett Gutiérrez García) and Antolin Calixto Gutiérrez Saavedra (for his own right and on behalf of his daughter Fanny Jhanett Gutiérrez García) on compensation for damages, which occurred on the occasion of the spill of mercury in the department of Cajamarca, the defendant Minera Yanacocha Limited Liability Company formulated -among others- the exception of conclusion of the process by transaction with respect to the minors Carlos Alberto Chávez García and Fanny Jhanett Gutiérrez García, indicating having subscribed with their respective parents and representatives, extrajudicial transactions in order to put an end to any conflict that arises with respect to the indemnification right that could be claiming minors in the future, being Stas:

I.-

Individual Extrajudicial Transaction celebrated on the twenty-fourth of November of the year two thousand with the minor Fanny Jhanett Gutiérrez García, represented by her parents Antolín Calixto Gutiérrez Saavedra and Santos Eufemia García Díaz, who was given the sum of twelve thousand five hundred nuevos soles (pages two hundred and nineteen). Said transaction was authorized by resolution of the eleventh of July of the year two thousand and one, issued by the Second Specialized Family Court of Cajamarca (pages two hundred and twenty-three); II.-

Individual Extrajudicial Transaction held on the twenty-fourth of November of the year two thousand with the minor Carlos Alberto Chávez García, represented by his mother Santos Eufemia García Díaz, who was given the sum of four thousand five hundred nuevos soles (pages two hundred and twenty seven). Both the denounced civilian Ransa Comercial Sociedad Anónima and the liant necessary liant Esteban Arturo Blanco Bar also formulated -among others- the aforementioned exception of conclusion of the process by transaction, based on the subscription of the documents described above;

Third

That, on the other hand, Esteban Arturo Blanco Bar deduced, also, the exception of lack of legitimacy to act of the plaintiffs with respect to the indemnification claim for environmental damage, since it maintains that in the case of sponsorship of diffuse interests, they are only legitimized to promote the demand the institutions referred to in article eighty-two of the Civil Procedure Code;

Fourth

That, in resolving the exceptions, the Judge of the case has declared unfounded the exception of conclusion of the process by transaction with respect to the minor claimant Carlos Alberto Chávez García, and founded the same exception regarding the minor claimant Fanny Jhanett Gutiérrez García , annulling everything that has been done in

that regard, as well as stating the grounds for the plea of lack of legitimacy for action by the plaintiffs with respect to the claim for compensation for environmental damage, and also annulling everything that has been done in that regard. Regarding the exception to the conclusion of the process per transaction, the A quo states that with the minor Carlos Alberto Chávez García a transaction has been carried out without having the judicial authorization provided for in the third paragraph of article four hundred and forty eight of the Civil Code; However, with respect to the second minor, this one has had the respective judicial authorization, according to a judgment that works on page two hundred and twenty-three, which gives it full value and makes the exception in this regard compatible. Regarding the exception of lack of legitimacy to act of the plaintiffs regarding the claim for compensation for environmental damage, the A quo noted that in application of the provisions of Article eighty-two of the Civil Procedure Code, the only beneficiaries would be the Municipality Provincial or District in whose territory the damage was caused, since in the final part of the aforementioned rule it is established that the amount set for compensation must be delivered to these entities. Once this decision was appealed, the Superior Court has confirmed in all its extremes the decision of the Judge of the case with respect to the aforementioned exceptions; being that the plaintiff parents appeal in cassation only with respect to the exception of conclusion of the process by transaction that they celebrated by their minor daughter Fanny Jhanett Gutiérrez García, and with respect to the exception of lack of legitimacy to act of the plaintiffs, for the indemnification claim for environmental damage;

Fifth

That, by majority decision issued on the twenty-second of January of the year two thousand and eight in the First Full Civil Casatorio, relapsed in the Cassation number one thousand four hundred sixty-five - two thousand seven, in the process followed by Giovanna Angelica Quiróz Villaty against Minera Yanacocha Limited Liability Company and Others on compensation for damages, also as a result of the spill of mercury occurred on June 2 of the year June of the year two thousand in the department of Cajamarca, the Plenary Chamber of the Supreme Court of Justice of the Republic has established jurisprudential doctrine regarding the exception of the conclusion of the process by transaction, noting as binding precedent the following:

"The Extrajudicial Transaction not judicially approved may be opposed as a procedural exception pursuant to the provisions of subsection ten of article four hundred and forty-six and subsection four of article four hundred and fifty-three of the Civil Procedure Code, by systematic interpretation of said norms with which contains the Civil Code on the Transaction. ";

Sixth

That, in point VI of the aforementioned judgment in majority issued by the First Civil Casatorio Plenary, the Full Chamber of the Supreme Court has estimated that it has no ex tunc effects, but on the contrary has effects ex nunc, reason why which the processes resolved prior to this decision under different criteria maintain full force to be protected

within the framework of the authority of the Court, while the present case [referring to the Cassation number one thousand four hundred sixty three - two thousand seven matter of the Plenary], as well as the rest that are pending to be resolved by both Supreme Civil Chambers, where equal facts and equal reasons are being discussed, must comply with the binding precedent outlined in this judgment, in virtue of the provisions of article four hundred of the Civil Procedure Code;

Seventh

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That, the binding precedents of the Courts of Justice in a Constitutional State are those decisions that, while resolving a specific case, at the same time contain a legal rule that will be of obligatory observance for the same court (precedent binding horizontal), as well as for all lower judges and courts, in all those cases that are substantially the same (vertical binding precedent). (Cfr .:

Adrián Coripuna, Javier. The binding jurisprudence of the high courts as a limit to the principle of judicial independence. In:

Studies to the Constitutional precedent. Lima, Palestra Editores, two thousand and seven, pages one hundred nineteen and one hundred and thirty three);

Eighth

That, the use of a binding precedent is subject to two conditions:

the first, referring to the relationship that must exist between the case and the precedent that is used for the solution of the case raised (must be substantially the same), and the second, that such precedent is a decision that considers the character of res judicata, that is, that has ended a process. In addition, the application of the precedent should not affect legal situations that already enjoy a final judgment and, therefore, can not affect what has been decided or resolved prior to its issuance;

Nineth

That, in the specific case, there is a relationship between this process and the one that motivated the call to the First Full Court, since in both cases Minera Yanacocha Limited Liability Company, Ransa Comercial Sociedad Anónima and Esteban Arturo Blanco Bar have made the exception for the conclusion of the process by transaction based on similar material legal relationship and procedural legal relationship, presenting for this the extrajudicial transaction that was concluded with the minor claimant Fanny Jhanett Gutiérrez García, even though said transaction was not presented or approved in a two thousand in the department of Cajamarca, the Full Chamber of the Supreme Court Previous process. The judgment issued in majority by the First House of Cassation is res judicata, because it definitively resolved the cause that motivated it, its effects being applicable to this process that is pending resolution; in this sense, applying the binding

jurisprudential doctrine to the present case, followed by Santos Eufemia García Díaz and Others, it must be concluded that the exception to the conclusion of the process by transaction can be validly alleged either by sustaining itself in the previous celebration of a non-approved extrajudicial transaction as in a judicial transaction, this is in virtue, as the aforementioned Casatorio Plenary has established, to the systematic interpretation of articles three hundred thirty-seven, three hundred and thirty-eight, four hundred and forty-six, four hundred and fifty-two and four hundred. fifty-three subsection four of the Civil Procedure Code with articles one thousand three hundred two and one thousand three hundred three of the Civil Code; consequently, there is no violation of the norms that guarantee the right to a due process, and the essential forms for the effectiveness and validity of the procedural acts are not violated, as the appellants are claiming in their appeal (point II.-

section a, and point III.-

); consequently, the contested decision is in accordance with the law, and particularly with the binding jurisprudence noted, which is of strict and obligatory observance in accordance with the provisions of article four hundred of the Civil Procedure Code;

Tenth

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That, regarding the exception of lack of legitimacy to act of the plaintiffs with respect to the indemnification claim for environmental damage, the aforementioned House of Cassation resolved unanimously that natural persons are not entitled by law to request this type of indemnification claims, but only those institutions indicated in article eighty-two of the Civil Procedure Code; In this sense, the contravention of the norms that guarantee the right to a due process, as the casenans refer in the pertinent end of their impugnant appeal, is not configured (point II, section b). Regarding the allusion made by the plaintiffs with respect to the jurisprudence of the Constitutional Court, relapsed in File number zero two hundred and twenty-one thousand and nine hundred and ninety seven - AA TC (which was also cited as the defense argument of the plaintiff in the Cassation number one thousand four hundred and sixty-five - two thousand and seven), where it is mentioned that the legitimacy in the defense of diffuse interests also reaches natural persons, the sentence issued by the Casatorio Plenary precise in its foundation number sixty-four, that both Article twenty-six of Law number twenty-three thousand five hundred and six, like Article Forty of the Constitutional Procedural Code, grant legitimacy to any person to file an application for amparo, which must be understood to be for purposes of requesting that constitutional guarantee in defense of interests diffuse, but this can not lead us to infer that, as well as in the amparo, also in the ordinary way, the legitimation is unrestricted for the defense of diffuse interests; therefore, the exercise of an amparo process must be differentiated from an ordinary process, since in both cases different and totally different aims are pursued; consequently, the allegations of the appellants lack legal support, and the decision of the Civil Chamber of Cajamarca is correct when confirming the order appealed, which

declares the proposed exception on this matter of standing to defend the diffuse interests to be well founded; reason why it will correspond next to pronounce on the alleged material cause; Eleventh

That, the cause of non-application of a material right standard is configured when the following assumptions concur:

The Judge, by means of a joint and reasoned evaluation of the evidence, establishes as proven certain facts alleged by the parties and relevant to the litigation; II.-

That these facts are related to identity with certain factual assumptions of a material legal norm; III.-

That notwithstanding this relationship of identity (relevance of the rule), the Judge does not apply this rule (specifically, the legal consequence) but a different one, resolving the conflict of interests in a manner contrary to the values and purposes of the law and, in particular, injuring the value of justice;

Twelfth

That, by sustaining this end of the resource (point I.-

) The plaintiffs argue that the provisions of articles five and one thousand three hundred and five of the Civil Code have not been taken into account, particularly because they have compromised on health damages, personal and extra-personal right that can not be waived and can not be compromised some, being clear that the transactions are null and can not serve the exceptions raised. On this point, following the tonic already established by binding jurisprudential doctrine relapsed in the Cassation number one thousand four hundred sixty-five - two thousand seven, it is noted that - on the same grounds supported by the same facts - the Full Chamber of the Supreme Court has established by majority that the aspects traded by the parties were not about the right to health, but about the damage that was caused to health as a result of exposure and manipulation of mercury suffered by the participants and their minor children. When it is mentioned that an injury is compensated, what is being done is to patrimonialize it, be it of a personal, material or moral nature, for which the article thousand three hundred and five of the Civil Code, when indicating that one can not trade on extra-marital rights , refers to all those rights that can not be valued or valued in money, but has not been traded on health itself, because the parties have not agreed that one of them has the right to harm the other, but that It has been agreed to repair that damage caused through a monetary amount. From the foregoing, any violation of articles five and one thousand three hundred and five of the Civil Code is ruled out, and therefore, the transaction entered into by the minor Fanny Jhanett Gutiérrez García is fully valid, since it is not noted that the plaintiff has renounced any of their fundamental rights referred to life, physical integrity, freedom, honor and other inherent in the human person;

Thirteenth

That, in the specific case (as in the preceding binding) in the transaction from page two hundred nineteen to two hundred twenty two, the parties agreed to quantify the health damage caused as a result of the spill of mercury occurred on June 2 of the year two thousand, according to the amount that was already specified in the numeral I.-

of the second recital of the present resolution, not containing such transaction agreements through which the right to health itself is available, so it is impertinent the application of articles five and one thousand three hundred and five of the Civil Code to elucidate the present case ; reason why the alleged material cause must also be dismissed;

Tenth Fourth That, in conclusion, as the grounds for non-application of material rules, contravention of the rules guaranteeing the right to due process, or the infringement of the essential forms for the effectiveness and validity of procedural acts, the appeal is not set it becomes unfounded, and the provisions of articles three hundred and ninety seven and three hundred and ninety eight of the Civil Procedure Code must be followed;

RESOLUTION

declared the appeal filed by Santos Eufemia García Díaz and Antolín Calixto Gutiérrez Saavedra INFRINGED by a writ of pages one thousand two hundred and sixty seven; consequently, they did not marry the car of sight of pages one thousand two hundred and fifty, its date twenty-eight of May of the year two thousand and seven; THE APPLICANTS EXEMPTED from the payment of the fine, as well as from the costs and costs derived from the processing of this appeal, for having been granted the benefit of judicial assistance; THE DISPUTE was published in the Official Gazette "El Peruano"; in those followed by Santos Eufemia García Díaz and Others against Minera Yanacocha Limited Liability Company and Others; on Compensation for Damages and Damages; and they returned them; intervening as Speaker Speaker Mr. Ticona Postigo.-

H.H.

TICONA POSTIGO

SOLÍS ESPINOZA

PALOMINO GARCÍA

CASTANEDA SERRANO

MIRANDA MOLINA

COMPENSATION FOR DAMAGES

EASTERN REPUBLIC OF URUGUAY

Final Judgment No. 441/2017 of the Supreme Court of Justice, May 8, 2017

Supreme Court of Justice

JUDGES Dra. Elena MARTINEZ ROSSO, Dr. Felipe Javier HOUNIE SANCHEZ, Dra. Beatriz Dora VENTURINI CAMEJO, Dr. Ricardo Cesar PEREZ MANRIQUE, Dr. Gustavo Orlando NICASTRO SEOANE, Dra. Marta GOMEZ HAEDO ALONSO

Constitutional right

The Corporation dismisses the appeal filed. In the case, owners of affected properties initiate lawsuit against M.S.P., M.T.O.P., C.A.R.U. and the Mixed Technical Commission of Salto Grande. Claims for damages for environmental pollution arising from the use of wastewater and effluent landfill ...

The Supreme Court of Justice dismissed the request for the execution of a foreign judgment.

Montevideo, May 8, two thousand and seventeen

SEEN:

For final judgment these cars entitled: "ILLIA ZALACAIN, PEDRO AND OTHERS C / O.S.E. AND OTHER - DAMAGES - CASACION "individualized with the SUI: 304-337 / 2002, come to the knowledge of the Supreme Court of Justice by virtue of the appeal of cassation filed against the judgment of the 2nd Civil Court of Appeals. Turn, SEF 0005-00017 / 2016, of 2/3/2016.

RESULTING:

1) By Final Judgment of First Instance No. 15/2015, of March 27, 2015, the Judge Judge of First Instance of Paysandú de 5o. Turn, Dr. Natalia Gallardo, resolved:

"Accepting the exception of incompetence by reason of matter, partially the exceptions of lack of active legitimacy and dismissing the claim in all its terms (...)" (pp. 2323-2338 vto.).

2) By Final Judgment of Second Instance SEF 0005-00017 / 2016, of March 2, 2016, the Court of Civil Appeals of 2o. Shift, composed of Drs. John Pérez Brignani, Graciela Gatti and Alvaro França, failed:

"The defendant partially rejoined in the defense of the exception of the lack of active legitimation of the co-actor Pedro Illia and confirmed it as soon as he dismissed the claim in all its terms" (pages 2457-2473).

In this pronouncement the Minister Dr. Tabaré Sosa extended discord (pages 2473-2480).

3) Against this decision, Mr. Pedro Illia filed the cassation appeal under study (pages 2489-2496) and expressed, in summary, the following grievances:

a) The Court violated the rules of admissibility and evaluation of the evidence.

It considers that the rules of evaluation of the test require a special consideration in the matter of Environmental Law.

He argues that the environmental contamination produced by the landfill, in which sewage is deposited throughout the city of Paysandú, has a well-known and evident nature, since it constitutes a contaminating activity per se and, therefore, such an extreme is I found it free of evidence.

b) Without prejudice to the fact that these were notorious facts, in the case of the work, the added material is probatory material that leads to the protection of his claim.

The Judge personally perceived the existence of contamination in the judicial inspection carried out as preparatory diligence in the IUE files: 304-201 / 2001.

In this opportunity, it was possible to confirm: existence of sewage, decomposed material, nauseating odor, exit of channel that invades surrounding properties, existence of large wells and waste of leather and garbage in the place.

These same facts arise from various documents, technical reports, press clippings and recognitions by the opposite party of the existence of pollution.

Also, it understands that in the case the diligence was denied admissible evidence and then it was argued that the party did not meet its burden. c) Estimates that the judiciary is losing the opportunity to take an active role in environmental protection, which transgresses the provisions of articles 47 of the Charter, 42 of the General Code of the Process and 6 of Law No. 17.283.d) The damage has the note of continued, which, at the appellant's discretion, makes it unnecessary to prove that the landfill contaminates the environment according to the state of scientific and technical knowledge at the time the activity occurred. e) The Departmental Intendency of Paysandú recognized the dumping of barometric on the property generating the damage, which, at the discretion of the appellant, leads to conclude that There is contamination because it is a consequence derived from experience. An analysis was presented that resulted in the presence of 200 fecal coliforms per 100 milliliters of water.Also, they add In the cars, agreements to improve the management of effluents held between: PAYCUEROS S.A., PAYLANA S.A., the Departmental Intendancy of Paysandú, O.S.E., the Ministry of Housing, Territorial Planning and the Environment and CYPAY S.A.

On the other hand, according to the report of Engineer Nogueira, there are emanations of hydrogen sulfide gas from the wastewater that compromises the concrete of the collector.

Of all these elements, the appellant seeks to derive, by way of deduction, a kind of judicial presumption favorable to its interest.

In conclusion, it requests that the defendant be revoked and, in its place, that his indemnification claim be accepted.

4) Once conferred transfer to the defendants, it was evacuated by: a) PAYCUEROS S.A. (pages 2508-2516); b) the State - Ministry of Public Health (pages 2518-2524); c) Sanitary Works of the State (O.S.E.) (pages 2525-2544); d) the State - Ministry of Transport and Public Works (pages 2545-2549); e) the Departmental Intendency of Paysandú (pp. 2553-2561); f) the State - Ministry of Livestock, Agriculture and Fisheries (pages 2563-2565 vto.).

All the defendants briefed for the dismissing solution.

5) In view of the inhibition of office of the Minister Dr. Jorge Chediak and the subsequent dismissal of the Minister Dr. Jorge Larrieux in his position, the Body was integrated with the Dras. Marta Gómez Haedo and Beatriz Venturini (pages 2583, 2629 and 2642).

6) Once the respective study was concluded, it was agreed to issue a ruling on the date of the date.

CONSIDERING:

I) The Supreme Court of Justice, duly integrated and by legal majority, will proceed to reject the appeal of cassation deduced, in attention to the following foundations.

II) As a preliminary matter, it is appropriate to state that the grounds for inadmissibility denounced by the co-defendant Sanitary Works of the State (O.S.E.) in its brief for the evacuation of the cassation appeal of the plaintiff are not set out in the record.

The amount of the matter greatly exceeds the minimum qualifying amount for the admissibility of the resource, as it arises from the demand (6000 Resettable Units).

III) In the case, the claim was made (in what is relevant at this stage) that the necessary measures were put in place to enforce the civil liability of those involved in the environmental pollution denounced and that the defendants were ordered to fully repair the damage caused, returning the area to its previous state. It was also requested that the current appellant be compensated for all the material damages (loss of property value "of the area", loss of profitability) and moral damages suffered (page 286).

The plaintiff based its claim on the following facts:

He owns a fifth part of several registers (which identifies fs. 266 vto.) That make up a property. A fraction of said property, composed of 2 hectares and 7843 meters, was sold to the State on April 26, 1924, for the realization of the sanitation work of the city of Paysandú. Since then and up to the date of filing the lawsuit, the plan did not comply with the provisions and did not cover the existing ditch in the properties, which caused the registers to be unproductive and terribly affected by pollution "several years ago" (fs. 269).

Two collectors (industrial and rainwater), in addition to the collector of O.S.E. In this way, organic and inorganic waste is poured into the Uruguay River.

In addition, there is a nailed property (about 7 hectares.), Which is not owned by the current appellant, in which are deposited "for more than 35 years" huge volumes of leather waste containing chemicals that pollute continuously and permanently air, water and water table, so it is impossible to have drinking water, suitable for human and animal consumption.

Finally it is invoked, that in the discovered trench a dam was built that increases the level of water flowing through it, preventing the visibility of the mouths of the other collectors, causing contaminated waters to flow over adjacent lands covering everything with a kind of odor nauseating.

The bodies of merit affirm that the plaintiff party did not fulfill the burden of proving the facts constituting its claim.

Conclusion

The evidence of pollution in the Mercosur Region is overwhelming. In the case of Argentina, plastics in the Río de la Plata and its tributaries generate a source of pollution that affects human health as well as marine fauna.

On the other hand, urban centers present environmental problems typical of the concentration of population and activity in small spaces, the continuous population growth, brings with it a greater generation of waste

Water studies and analyzes were carried out, which produced a high percentage of plastic waste. The rivers of the hydrographic basins of the Metropolitan Region of Buenos Aires, are characterized by being typical watercourses of plain area, with little slope and of a flat and uniform topography. The three main basins, Río Luján, Reconquista and Matanza Riachuelo, cross the most densely populated region of the country, are easily contaminated by sewage, industrial and domestic waste, discharging into the Rio de la Plata all the pollution flow.

With regard to the legal framework, at the local level the regulations that directly address the problem of pollution by "marine debris" are not so extensive, being circumscribed to the regulation of waste management on board all types of vessels and in sectors port At the same time, indirectly there is a wide regulatory framework in Argentina at the national, provincial and municipal levels, oriented mainly to the integral management of urban solid waste, among other laws and provisions whose implementation would indirectly avoid or minimize the entry of waste into water courses, preventing river and marine pollution with garbage.

The Civil Liability for Pollution Policy covers the Insured's liability, up to the amount of the insured capital, for the damages caused to third parties by the environmental pollution caused by their activity. This instrument enables third-party claims for damages attributable to the insured's activity as a result of accidents contemplated in the policy and that have occurred accidentally.

In Brazil, the country with the greatest biodiversity on the planet, in 2015, there was a breakdown of the containment dams of iron extraction waste from the company Samarco, in Mariana, which caused the contamination of its waters. In terms of environmental management, Brazil is one of the few countries that started early in Develop specific environmental policies. The Civil Code contains several articles related to the relationship of the individual with environmental aspects.

Brazil has laws that make mention of environmental insurance as economic instruments within the Federative Republic of Brazil legislation.

As far as Chile is concerned, the capital city of Santiago is considered one of the most polluted cities in the world. Air quality is also a serious problem in several urban centers of the country, but especially in Greater Santiago, where the magnitude and size of the affected population leaves the penumbra.

Pollution has caused the state to enact environmental preemergence. The Ministry of the Interior created the Special Decontamination Commission of the Metropolitan Region, an interministerial entity whose main function is the formulation of plans for the decontamination of said region and is composed of a Committee of Ministers, an Operating Committee and a Technical and Administrative Secretariat .

The Commission proposed a Decontamination Plan for the Metropolitan Region that compromises the political activities of the Transport, Health, Housing and Urban Planning, Public Works, Industry and Energy sectors, and coordinates its activities with Conama.

On the other hand, the CHUBB insurer covers the environmental risk as a result of a gradual and sudden and accidental contamination event.

On the other hand, in Peru, artisanal mining, ancestral activity, has caused soil contamination with mercury, affecting the health of the population and marine fauna.

The health situation of the population of Choropampa continues to be seriously affected by the mercury spill that occurred in 2000. In this context, the need to implement actions must be taken into account:

a) Investigate the responsibilities of the authorities that contributed interestedly to a mishandling of the crisis to overcome the impunity that opens the doors so that similar situations can be repeated

b) Strengthen the institutional capacity of health services for the management of cases of environmental contamination and damage to health due to the effect of chemical substances used in mining.

c) Carrying out an independent evaluation on the current health status of the population and studying the possibility of evacuating the affected population with a fair compensation program.

In the insurance market, it has a General Civil Liability Policy: it covers damages to third parties, whether material and / or personal, derived from the operation of the mine. Environmental pollution is covered only if it is caused accidentally.

In Uruguay, in the coastal zone as well as the lakes for recreation, heavy metals have been detected, a phosphorus record above the standard values, which generates eutrophic state of the bodies of water.

The Civil Liability Insurance, in accordance with the law, guarantees coverage for damages caused to third parties, exclusively as a consequence of the events or circumstances provided and expressly detailed in the Particular Conditions.

Main solutions to the problem of environmental pollution:

Reduce the use of circulating cars in the streets.

Take measures to reduce the emission of industrial pollutants.

Create green parks in cities.

Recycle the garbage to avoid the emission of harmful gases.

Do not waste water.

Do not abuse air conditioning.

Reduce the use of electric power.

In the field of the insurance market, environmental insurance is the tool of environmental management that enables States to guarantee society the right to a healthy, balanced and suitable environment for human development.

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Ficha: Análisis Calidad de Agua en Uruguay vida silvestre uruguay

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