

Annex G.- CASE: RAMON ARREAGA QUINTO.-

The user Ramón Maximiliano Arreaga Quinto, ID N° 090054857-9, domiciled at Portete 5322 and 28th, submitted a complaint on October 20, 2004; both in the Ombudsman's Office and in the Guayas Police Superintendence; where it is recorded that the concessionaire company Interagua was invoicing average consumption costs (between \$6.00 and \$7.00) though there was no meter in the house. After a meter was installed, in June 2004, there was an outrageous increase, damaging for the user's economy, i.e. \$114.62, an inconceivable amount, since neither the family nor their consumption increased.

It is worth pointing out that the user Arreaga Quinto is an elderly person, whose right to pay 50% of the service has not been respected. When Mr. Arreaga submitted his complaint about the unjustified charge, the company arbitrarily cut off the service on September 30, 2004, without considering the Consumer's Defense Law in the following articles:

Art. 77.-

Unjustified suspension of the service.- Whoever suspends, paralyzes or failed to render, without justification or arbitrarily, a previously contracted service for which the right to connection, installation, incorporation, maintenance or tariff has been paid, shall be sanctioned with a fine of one to five thousand US dollars, or its equivalent in legal tender, without prejudice to other relevant actions.

Additionally, the State and autonomous entities and/or the concessionaires of the right to services rendered shall answer at civil courts for the damages caused to residents due to their negligence or carelessness in their attention to the services in their charge and the lack of services that have been paid for.

Art. 78.-

Charge during suspension of service.- The supplier of public or private services may not charge any amount during the period when the service is interrupted, and, in any case, he shall be obliged to make a discount or to refund the consumer for the value of the service that was paid for but not rendered.

Mr. Arreaga justifiably filed a lawsuit at the D.A.'s Office and obtained a resolution from the Guayas General Superintendence of Police in favor of the plaintiff.

However, and in spite of the process in favor of Mr. Arreaga, Interagua has so far not reconnected the service and continues to invoice for a service that the plaintiff does not have.

ULTIMA HORA:

ORDEN DE PRISION PARA GERENTE DE INTERAGUA POR DESACATO:



**FUNCION JUDICIAL
DISTRITO GUAYAS**

recabando tanto los elementos de cargo y descargo que deben ser apreciados en conjunto de acuerdo con las reglas de la sana crítica.- Por lo actuado en la etapa de Instrucción Fiscal, se establece que se ha justificado la existencia material de la infracción, así como participación de los imputados, por cuanto se ha probado que efectivamente existió desacato, ya que de los resultados de la instrucción fiscal se desprenden presunciones graves y fundadas sobre la existencia del delito y sobre la participación de los imputados, especialmente por el oficio GERG AC# 213-2007 del 31 de enero de 2007 suscrito por el Gerente general de ECAPAG Ing. José Luis Santos que obra a fojas 153 de los autos, del que se infiere claramente que los imputados han desacatado la sentencia dictada por el Intendente General de Policía del Guayas, en cuanto al cobro de consumos, restablecer el servicio de agua potable al señor RAMON MAXIMILLIANO ARREAGA QUINTO.- Por lo expuesto, la suscrita. Jueza Duodécima de lo Penal del Guayas, de conformidad con el Art. 232 del Código de Procedimiento Penal, dicta AUTO DE LLAMAMIENTO A JUICIO en contra de GUILLERMO DOMINGO MINGOLLA, con cédula de identidad Ext. No. 092665680-2 de nacionalidad argentina, de 47 años de edad, de profesión ingeniero civil, con domicilio en la Urbanización Laguna Club, casa 68, vía a la Costa e IVON MELLINGER, sin generales de Ley, como presuntos AUTORES, de la infracción tipificada y sancionada en el Art. 234 del Código Penal.- Se dicta auto de prisión preventiva dictado en contra de GUILLERMO DOMINGO MINGOLLA e IVON MELLINGER, por lo que se procederá a enviar oficio para la localización y capturas.- Se dispone la prohibición de enajenar los bienes que tuvieren registrados los acusados, para lo cual se dispone oficiar al señor Registrador de la Propiedad del Cantón Guayaquil para que tome nota en los libros respectivos.- Se suspende la etapa del juicio hasta que los encausados GUILLERMO DOMINGO MINGOLLA e IVON MELLING sean aprehendidos o se presenten voluntariamente.- NOTIFIQUESE por boleta. F) Dra. Guadalupe Manrique Rossi, Jueza Décimo Segundo de lo Penal del Guayas, F) Abg. Sandra Alvarez Barragán, secretaria titular del despacho.- Lo que comunico a usted para los fines de ley.- Guayaquil, 7 de Enero del 2008.



Abg. Sandra Alvarez Barragán
SECRETARIA F. I. A.
Jueza Duodécima de lo Penal del Guayas

Annex H.- CASE: OUTBREAK OF HEPATITIS A IN THE SUBURBS:

The Outbreak of Hepatitis A in the Suburbs of Guayaquil (Text of Chapter 10 of *Agúita Amarilla* by Emily Joiner)

The outbreak of Hepatitis A in the West Suburb of Guayaquil showed the various sanitary deficiencies in the city, especially the serious problems with water and sanitation services. After the public announcement of the disease, in June 2005, a controversy divided health authorities, legal services, the government and the suppliers of water and sanitation services.

Little by little, the number of children affected rose to 85 cases at the end of June. The gradual increase in magnitude brought about the incorporation of several laboratories, national and local politicians and a number of popular leaders and organizations, in search of explanations. In the end, they concluded that the water and sanitation services rendered by Interagua were and are deficient and were to blame, to a great extent, for the unsanitary conditions. The case represents a paradigmatic change in the concession: citizens from all sectors were now aware of the potential grave effects linked to inadequate public services.

Hepatitis A is caused by a virus that destroys liver cells, producing symptoms like jaundice, fatigue, abdominal pain, vomiting, fever, pain in the joints and dark urine. Unfortunately, in low-income sectors, hepatitis is quite common, but it may be confused with influenza if the characteristic jaundice does not appear.⁶⁴ The virus penetrates the body through the digestive apparatus, from the water or food, contaminated by faeces. After the infection, a final diagnosis requires blood and urine tests to confirm the presence of the virus.⁶⁵

The focus of infection was the area of the West Suburb, in the sector known as Pilot Plan. On June 15, *El Universo* announced cases in several schools of that sector: Alberto Perdomo School, with 9 cases; Progress with five and approximately 30 cases in the adjacent areas.⁶⁶ In the case of the Perdomo school the headmistress, Dr. Lilia Ruffini, was informed by the school doctor of 5 suspected cases of hepatitis he had seen in his office.

She responded to that information by calling a meeting with the parents, where they decided to suspend the classes to avoid more contagion.⁶⁷ In other schools there were also sick pupil; while the disease spread and the awareness of parents grew, more families took their sick children to have blood and urine

tests. By June 21, five schools and three more colleges confirmed the presence of the virus among the pupils to the newspaper *Expreso*.⁶⁸

By the end of June, provincial authorities reported 85 cases (39 confirmed and 49 suspected) of Hepatitis A and according to the doctor at the Dispensary of the Perdomo school there was a total of 158 cases.⁶⁹ Moreover, there were some cases of typhoid fever and at least one confirmed case of leptospirosis.⁷⁰ The discrepancies in the records of the authorities are due to the fact that not all the sick children had the resources to have the necessary tests for a final diagnosis.

The fear of imminent contagion compelled residents and authorities to improve sanitary conditions in schools and in the city. The provincial director of education committed himself on June 17 to require community cleaning work and disinfection of cisterns and toilets in the schools.⁷¹ The parents took action, organizing community work in the school Shyri Cacha, among others.⁷² However, the epidemic nature of the outbreak caused much fear of contagion. Deputies from Pichihcha, Cotopaxi and Esmeraldas asked the National Congress and the President of the Republic “to declare a SANITARY EMERGENCY at once, for the west suburb of this city, and that relevant measures be implemented to eliminate the causes of this outbreak of Hepatitis A.”⁷³

President Alfredo Palacio denied the request the same day, attributing the outbreak to a localized incident due to unsanitary conditions and bad maintenance of the school cisterns.⁷⁴ In spite of the decision made by Palacio, the incidence of Hepatitis created a situation of high risk for all residents. As to the epidemic being caused by the quality of the service, the adult residents, as well as the children, were running high risks by drinking water, supposedly potable, supplied by Interagua.

Hepatitis A is caused mainly by consuming food or water contaminated with *fæces*. This may happen when people forget to wash their hands before cooking.⁷⁵ The opinion about the outbreak being caused by the contamination of food and water has generated much controversy as to the source of contamination. The residents of the Plan Piloto sector say that the water provided by Interagua through the network is of very poor quality. A survey conducted on June 26 in that sector revealed that 76% of the residents characterize their water as muddy and smelling bad.⁷⁶ In another study, made by the Defensoría Adjunta Segunda in July, 2005, 45% of the residents classified the water as yellow or dark, and 74% identified the smell of *fæces*. Some testimonies and anecdotes confirm these assertions.

For example, Sonia Cherrez Macías a resident of Plan Piloto, told the Defensoría Adjunta Segunda del Litoral and Galápagos that “the water has been running with a fetid smell for three weeks. When I boil water, dirt remains at the bottom of the pot.” The headmistress of the Perdomo school also testified that some parents delivered water samples from their homes to the Municipality and that the results indicated that the water did not contain chlorine but did have fæces.⁷⁷ Moreover, it must be considered that residents receive water within a limited schedule, during approximately 3 hours in the morning and three in the afternoon.

When there is water, the low pressure requires that 67% of users use a suction pump to obtain it. This lack of continuity and pressure increases the risk of contamination throughout the network of drinking water. This is further complicated by the use of pumps, a necessary technique for supply, but one that introduces pollutants directly into the network.⁷⁸ These circumstances point at a high risk of contamination in any section of the network, which the residents say they experience daily. Meanwhile, the Lab at the Catholic University Santiago de Guayaquil examined samples from schools of the sector and concluded that the water was not fit for human consumption in any of them.⁷⁹ However, Interagua held that their service was not deficient and the water supplied was truly potable, referring to the samples tested at their own lab and indicating 100% compliance with contractual norms.⁸⁰ The implication in that statement is that water contamination occurs in the hands of the consumer, and that the company bears no responsibility for the water, after delivery to homes or schools. Of course, the water at the homes and schools was not fit for human consumption. But the controversy on the point of contamination and those to blame continued to grow, in spite of Interagua’s assertions.

While water quality was being investigated, some questioning of the sector infrastructure also called people’s attention. In terms of sanitary sewers, there was a network built over ten years before, but the system did not work properly anymore. According to the testimony of Antonio Ricaurte, a leader of the group CUBE in one neighborhood, during those ten years the sewers had never worked adequately, so people had to build septic tanks or cesspools.⁸¹ The decrepit condition of pipelines was known by ECAPAG, which communicated these deficiencies to Interagua in July 2004. In fact, ECAPAG requested the replacement of “ the entire infrastructure comprised within their working area, as it was a system of obsolete networks with considerable damage; then users should not have to pay for the service.” Interagua acknowledged this information and offered to build a new network, but never set a definite date for the project.⁸²

The consequences of the inadequate sanitary sewers and the lack of rainwater sewers cause mainly “the contamination of the soil with sewage water coming

from latrines or septic cesspools, as well as the overflowing of the existing network.” Furthermore, soil contamination and floods of sewage are the main cause of contamination of the drinking water system.⁸³ Considering this argument, the bad condition of sewers would contribute directly to a deficiency in the quality of potable water that reaches the homes.

It cannot be denied that schools lacked sufficient sanitary structure. During a visit by representatives of the National Institute of Hygiene and Tropical Medicine (INHMT) they found a total lack of hygiene and sanitary systems. In the cisterns they found “muddy water” and rusty lids.

Toilettes are not enough for the number of students, and they were dirty, sometimes covered by excrement.⁸⁴ Upon recognizing the danger at the schools their children attended, some parents themselves organized community cleaning work and threw out street vendors that sold questionable food. These actions would lower the risk of disease due to lack of proper cleaning at the schools themselves. Thus the families assume their responsibilities and expected Interagua’s authorities to do likewise.

However, the situation was increasingly complicated, the relation between water quality and the lack of sanitation in schools had not yet been determined. Incomplete results or discrepancies made it impossible to blame the water supplied by Interagua as the only element. It seemed that school infrastructure, the weakness of sanitary sewers and the inadequate quality of the water had all contributed to the outbreak of Hepatitis.

The reactions of regulating, political, health authorities and neighborhood leaders have been diverse. As early as June 23, the Guayaquil council-man Leonidas Plaza Verduga asked the Municipality to sanction Interagua for the outbreak and to exercise “drastic control” on Interagua.⁸⁵ Actually, this complaint was just another step in the controversy.

At the end of June, 2005, the entity responsible for the regulation of Interagua, ECAPAG, published the results of twelve water samples, tested by the Laboratory of the Catholic University Santiago de Guayaquil in their “Aide Memoire.” The document declared that the water in the public network of the sector, outside the schools, complied with all the norms of total residual chlorine and coliform fæces imposed by INEN. Their report concluded that owing to these results, they ruled out that “the outbreak of Hepatitis A submitted had been due to the bad quality of the water in the public network.” They observed the deficient internal infrastructure in these schools, whether in the pipelines of drinking water, cisterns, sanitary appliances, etc.⁸⁶ At the end of that month, ECAPAG defended itself in a Hearing Act, together with Interagua. Their representative testified that “...whenever the technical team points out any

deficiency, we shall oblige the concessionaire to take relevant corrective action immediately.”⁸⁷ This attitude was the subject of an article, published in the newspaper *Expreso*, saying that ECAPAG “confronts accusations and defends, documents in hand, their concessionaire.”⁸⁸ The support given by ECAPAG to Interagua should have generated confidence among the users, but it had the opposite effect. According to the City Observatory of Public Services, “it is observed that the quality of the drinking water services, such as pressure, continuity and quality in the sector, has not been duly controlled by ECAPAG.”⁸⁹ The people cannot believe that a service is of quality when the controlling agent does not seem to seriously consider the consequences of the services described and felt by them.

All this controversy gave way to investigations of two civic organizations, the Commission of Civic Control of Corruption and the Ombudsman’s Office. CCCC’s investigation incorporated information and reports of different authorities, including ECAPAG, Interagua, the Guayas Provincial Director of Health, the Ombudsman, the INHMT, the Ministry of Urban Development and Housing, the Guayaquil Municipality and the City Observatory of Public Services. In relation with the quality of the water supplied by Interagua, it was concluded that in the concession contract, the norm about residual chlorine required by INEN must be urgently corrected. This decision was generally accepted by all the authorities involved. The concession contract had to agree with Ecuadorean laws, which require that all technical norms be established by INEN.

Subsequent tests by CCCC on the quality of the water found that Interagua was responsible, thus strengthening previous complaints. CCCC concluded that the presence of coliform faeces in the distribution network definitely determined the bad quality of the service rendered by Interagua. In the end, they stated that the water was not fit for human consumption. In other words, although the samples taken by the company do not indicate that the water is contaminated at the distribution source, the high possibility of contamination due to the poor condition of pipes, low pressure and discontinuity of the service constituted non-compliance, on the part of Interagua, with the concession contract and a violation of article 32 of the Organic Law of Consumer Defense, and the article 87 of ECAPAG’s Regulations for the Supply of Potable Water.

They added that the fact that the concessionaire did not take alternative measures to compensate for the inadequate pipes “represents a lack of foresight, a grave infraction in rendering the service.” Besides, they agreed on the MIDUVI report, in that hepatitis A may be originated also “in the deficit of sanitary structure, poor disposal of excrement and lack of sewers in educational centers”. These conclusions accused the education authorities as well as

Interagua, duly dividing the responsibility between the two principal actors in the spreading of the epidemic. In the final document, signed on October 3, 2005, the organization requested a fine to be imposed on Interagua, according with the Penal Code, for the damages caused by improperly rendered services.⁹⁰

The Ombudsman's Office also decided against Interagua in October, in what was considered a "historical and exemplifying resolution on the application of human and citizen rights and defense of users and consumers." First and foremost, it proclaimed that Interagua does not supply water fit for human consumption and that proves ECAPAG has not complied with its regulatory function. The document was based on consumer's rights, defining the lack of quality water, coverage and sanitation, a violation of those rights. Compensation was requested for all the victims of the outbreak and also that the D.A. and international courts should begin legal action against Interagua as a violator of rights.⁹¹

The cumulative effect of these resolutions from organizations with credibility and legal substance was the fine imposed on Interagua by the General Police Superintendence of Guayas. The decision to issue a fine was signed by lawyer Roberto Mosquera Tayne, the Secretary. In essence, they considered CCCC's resolution, from the different sources included in that study. The Superintendence did not find any information to contradict the validity of the fine requested, and decided to impose a fine of \$1,000 owing to the violation of INEN's norm on water quality.⁹²

It is no wonder that the fine called Interagua's attention and produced a defensive response. On December 2, the General Manager of Interagua, Guillermo Domingo Mingolla, sent a letter to the Superintendence of Police, rejecting the validity of the fine. His argument was basically the fact that in the year the contract was signed, the quality standard for water that was used, though lower than the INEN norm, was considered valid by the MIDUVI; that the Ecuadorean government, by signing the concession contract, confirmed the validity of that standard and therefore they were not to blame for any subsequent discrepancy. Mingolla thought that it was negligent that the Superintendence would agree with just one element of the CCCC Report, without replying to the rest of the issues.⁹³ However, the fine represented a final resolution, and it was the conclusion of a long process of investigation and debate.

The outbreak of hepatitis is an event of paramount importance in the evaluation of the concession. Its importance derives from the gravity of its implications: Hepatitis A made water a matter of life or death. Subsequent investigations found Interagua responsible for a lack of tests and action in the network of

sanitary sewers. Interagua, fully informed of the problems with the existing network, was negligent in its reaction and chose not to improve the system.

The exhaustive investigation of the water quality brought to light the deficient norm included in the contract. How many more errors will be found, that damage people's health? It also revealed Interagua's practice of charging for a service, in this case sanitary sewage, even though ECAPAG warned them that it was not working and therefore there should be no charge. In the end, it was concluded that Interagua's services contribute to bring about death. The impact of this message spread through society with understandable force, leaving deep marks in the confidence that Interagua might supply high quality services. Political consequences also question the wisdom of incorporating the private sector to the provision of a public service that is desperately vital for the people's welfare.

Annex I.- CASE: REPORT ON CONTAMINATION AND DISCHARGE OF
CONTAMINATING WASTE IN THE RIVERS AND MARSHES OF GUAYAQUIL
(Public complaint submitted by the City Observatory of Public Services)

Guayaquil, July 17, 2007

IRRESPONSIBILITY AND LACK OF CONTROL CAUSE THE
CONTAMINATION OF THE SALADO MARSH AND THE RIVERS DAULE AND
GUAYAS

Company irresponsibility and lack of control of the relevant authorities have permitted hundreds of industries to discharge their industrial waste directly into the sanitary and rainwater sewers. From the study by Espey Houston-Copade and information from ECAPAG and the MUNICIPALITY OF GUAYAQUIL we see that "in the Pascuales industrial area (Area 6), comprised of 68 industries, waste is discharged through two marshes that come together a short distance of their confluence with the Daule river. In this river, through the canal that goes to Las Orquídeas neighborhood, are discharged the liquid residues from the industrial sector Inmaconsa (Area 5), where there are 125 industries, the greatest concentration of industries in the city.

The flow of waste discharged from the industrial area Mapasingue-Prosperina (Area 4) is collected in several canals that finally come together in the Urdesa-Miraflores arm of the Salado Marsh. The residual waters of the industrial area Juan Tanca Marengo (Area 3) are discharged into the arm of the Salado Marsh in Urdenor quarter, passing through Alborada Tenth and Sixth neighborhood. There is a point of convergence between the residual waters of this industrial sector and the sewage water coming from the Sixth Stage of Alborada and the first of Urdenor, from where the waters mix and run to the above mentioned arm.

The industrial area Vía a la Costa (Area 7) discharges its waste to the Salado Marsh through various canals, among them the Javier-Salitral of the sanitary sewage system, which collects discharges, mainly from the Nestlé plant, and runs to an arm of the Plano Seco marsh and the stretch of the Salado Marsh. Between Puerto Azul and the entrance to Chongón there are several production centers, like chicken feed plants, shrimp packers, calcareous and quarries. These facilities do not usually discharge a high volume of liquids, though the canals of natural drainage in winter carry the wash waters up to the ditches on the edge of the Guayaquil-Salinas highway, from where they are finally discharged in the Salado Marsh.

In the South industrial sector (Area 2) the liquid discharges from each industry are sent directly to the Guayas river or to the collectors White, Salem and Argentina of the sewer system in that area. Sewage water of the area are directed to the pumping station at Guasmo, from where they are discharged, without any treatment, in the Guayas river (around 80,000 m³/d).

Likewise, the liquid discharges of the sector Cobina-Muerto (Area 1) are sent directly to the marshes Cobina and Del Muerto, without any treatment.

SANCTIONS ESTABLISHED IN THE PENAL CODE:

In the Penal Code, Chapter XA (X.1) ON ENVIRONMENTAL CRIMES, art. 437-B provides: "Whoever infringes norms on environmental protection, discharging waste of any nature over the limits established by the Law, if such an action should cause or might cause damage or alterations in the flora, fauna, genetic potential hydro-biological resources or biodiversity, he shall be sent to prison for one to three years, unless the deed constitutes a more severely punishable crime."

It is important that authorities, in this case the Municipality of Guayaquil that assumed all the environmental responsibilities, proceed according to the law and to environmental regulations, and take all urgent corrective measures to prevent, not only the violation of the law, but the destruction of the ecosystem and of the rivers and marshes surrounding Guayaquil, which are a Patrimony of all.

Anexo J.- DISTRIBUTION OF WATER NOT FIT FOR HUMAN CONSUMPTION

At the verbal request of users, the City Observatory of Public Services conducted a test, in October 2007, of the water running directly from the pipes provided by Interagua. The lab technical report determined, in 100% of the samples from family homes of 3 Cooperatives in Guasmo Sur, that “the water is not fit for human consumption.”⁹⁴

Annex K.- INTERAGUA FINED FOR NOT COMPLYING WITH GOALS OF CONCESSION CONTRACT ⁹⁵

Cuantioso castigo a Interagua de \$ 1'500.000 por incumplir contrato

Julio 28, 2007

Concesionaria dice que incumplimiento de metas es por deudas del Gobierno.

La Empresa Cantonal de Agua Potable y Alcantarillado de Guayaquil (Ecapag) penalizó a Interagua con 9.892 conexiones de alcantarillado sanitario adicionales, que deberá ejecutar hasta el 9 de julio del próximo año, por haber incumplido las metas del primer quinquenio.

Interagua debió entregar 55.238 conexiones en agosto del año pasado, pero solo concretó 27.740. Ecapag, ente regulador, no la sancionó en esa época y le concedió además un año de prórroga que volvió a incumplir.

La reunión de los funcionarios se efectuó una vez que se les entregó los resultados de las inspecciones realizadas por JVP Consultores y la firma extranjera de Auditoría Técnica Externa de la Concesión.

“La concesionaria solo cumplió con 19.255 conexiones de las 27.740 que debía entregar”, señaló José Luis Santos, gerente general de Ecapag.

Santos dio a conocer que para determinar la sanción a Interagua se sumarán a las conexiones realizadas hasta el 9 de agosto del 2006 y las que se concluyó el pasado 9 de julio. Lo que da un total de 46.995 redes de alcantarillado sanitario.

“Ellos cumplieron con más del 85% y como determina el contrato se los penalizó con más obras. Ahora no solo deben realizar 8.234 conexiones que han dejado pendientes sino también 1.649 redes que pertenecen al 20% con lo que hemos sancionado a la concesionaria”, manifestó.

Mientras que la subgerenta de comunicación de Interagua, Ilfn Florsheim, señaló que Ecapag se saltó un paso del contrato. “Ellos debieron enviarnos una notificación y después de ello nosotros teníamos quince días para presentar



ANGEL AGUIRRE

En el Guasmo sur se encuentra una caja domiciliaria en mal estado. Este es uno de los trabajos inconclusos de Interagua.



pruebas de descargo. Si después de ese periodo Ecapag seguía insistiendo con la sanción, Interagua tenía 20 días adicionales para determinar el tema de la infracción.

Después de ello, el ente regulador tiene un plazo de diez días para decidir la penalización que impondrá, pero ellos no hicieron esto”, resaltó.

Asimismo expresó que como el Estado es la parte contractual y ellos le deben a Interagua “no existe sanción ya que si el Gobierno no paga, la concesionaria no tiene cómo financiar los trabajos”.

Monto

Interagua tendrá que invertir cerca de \$ 1'500.000 por la sanción que se le impuso debido al incumplimiento de las metas del primer quinquenio. Según el gerente general de Ecapag, José Luis Santos, la concesionaria deberá cancelar el dinero de su cuenta y costo, y esto no tendrá incidencia en la tarifa y en los usuarios.

Annex L.- SUMMARY OF INDEPENDENT COMPARATIVE STUDY BY THE FARO GROUP, CONTRACTED BY THE IDB, CONCLUDES THAT THE POOR WILL NOT HAVE ACCESS TO WATER IN GUAYAQUIL

“In this study we have investigated how the privatization of Guayaquil’s water system has impacted those living in its poorest communities. We have run a comparative study between Ecuador’s two largest cities, Quito and Guayaquil, to compare how public versus private water provision systems have delivered in the areas of price, coverage and quality of water over time. In addition, we have conducted an institutional analysis of the two entities that provide water – Interagua with ECAPAG as a regulator in Guayaquil and EMAAP-Q in Quito – to measure both the external factors as well as internal management factors that have influenced, and indeed help to explain, the results obtained in the statistical analysis.

Results of our quantitative analysis show that the poor in Guayaquil continue to be worse off than the poor in Quito in terms of both coverage and price. Our analysis of Guayaquil before and after the concession shows there are not significant changes in the probability of having water services in these two time periods; in fact, there is actually evidence that poor people have a lower chance of having access to water. However, our difference in difference analysis between the two cities showed that while on average there is an overall lesser chance of having water services in the period after privatization, poor homes increased their likelihood of having access to water in Guayaquil relative to Quito for this period. It is important to emphasize that the poor in both cities have less access to water than they did 10 years ago; however, in the period following the concession, the decrease is significantly less in Guayaquil than in Quito. In terms of price, water continues to be more expensive in Guayaquil than in Quito.

Our institutional analysis shows that it is clear that current water provision in Guayaquil has been shaped by challenges presented by the external factors of high poverty levels and geographic misfortune; factors which were further complicated by its clientelistic political environment and corresponding lack of leadership in planning for and responding to these very problems. On the other hand, Quito (and EMAAP-Q) has seemed to benefit from the graces of historical demographics and good geographic location, factors which perhaps facilitated its ability to establish a solid public water company that has been able to keep up with the challenges it faces.

EMAAP-Q, as a public company, continues to out-perform Guayaquil in terms of the absolute price, coverage and quality of its **water**.¹ Given this

success, it is logical to question whether it was necessary to privatize Guayaquil's water provision system in the first place and to ask whether its previous public companies could have been sufficiently restructured to replicate the Quito model. This is by no means a simple question to answer, and is in fact one that will be more deeply explored in the policy recommendations section of this study. However, for the purposes of our immediate conclusions we operate from the premise that privatization of the Guayaquil system was inevitable given that 1) there was a crisis in the state of operations of the pre-privatization water and sewerage system; 2) the majority of attempts to reform the previous public water companies failed; 3) the level of needed infrastructure investment was too large to come from local sources alone; and 4) international lenders were no longer willing to lend without private sector involvement.

Although Guayaquil has not yet been able to reach Quito's completion level in the areas of price, coverage and quality, despite the private concession of its water services, it should be recognized that when Interagua assumed operations in 2001 it inherited a majority of the historical problems and challenges of the Guayaquil water network. Many of such problems take years of infrastructure investment and expansion to correct and massive change cannot be expected to occur overnight.

Our institutional analysis shows that Interagua appears to be making strides in increasing operational efficiency, an area which when combined with the completion of contract goals in coverage expansion, continuity and pressure should translate to positive improvements in service quality and coverage for marginal communities. As more poor communities become connected to the network (with individual water meters) and technical failures in the system become addressed with water continuity increasing throughout the municipality, we should expect to see positive impacts on the current price paid for water by poor communities. This of course will depend upon both the percentage of the poor population that is able to count on water from the public network for all of their needs, therefore eliminating the purchasing of the more expensive tanquero water, and on the future adjustments made to the tariff structure.²

A challenge in private sector operations, however, is that an increase in efficiency can either result in a corresponding increase in the funds available for investment in infrastructure development and expansion of coverage or an increase in profit for company shareholders. Unfortunately, the fact that so little budget data has been made available by Interagua, makes it difficult to thoroughly measure the impacts of these efficiency gains. In addition, the fact that Interagua is just beginning its fifth contract year makes it still too soon to

measure the real repercussions on Guayaquil's poor or the absolute success or failure of the privatization endeavor.

While it appears that water provision for poor communities is improving in Guayaquil, especially when compared to the services that were provided by the public companies prior to ECAPAG, the current system is not without its faults. While price, coverage and quality are all important indicators that impact marginal communities in numerous ways, community participation and accountability in the provision of public goods and services are also key elements that are all too often forgotten.

The fact that water is a public good, whether it is publicly or privately provided, means that the ability of poor communities to participate in and impact the important decisions that surround the provision of water services to their areas is critical. Mechanisms for true public/citizen accountability must exist for both private providers of water services and their regulators. Unfortunately this is an area in which both Interagua and ECAPAG have thus far failed miserably. In order for the experiment in water privatization in Guayaquil to be truly considered a success for its poorest communities, it must not only meet its obligations to expand coverage, improve quality and control price but it must also find a meaningful way to include "public sector accountability" in its operations.

The continued success of EMAAP-Q, in achieving high standards in price, coverage and quality in the provision of its water services in Quito, raises an important issue for the ultimate conclusions of this study. The Quito-Guayaquil comparison shows us that the issue may not so much be whether a public or private system of water provision ultimately provides the most benefits for the poorest sectors of a community. Rather what matters most is that the company, in whichever sector, is well-run, with high levels of management capacity and oversight. As was seen in the case of Guayaquil, fixing the failures of decades of mismanagement did not come from simply opening the sector up to concession.

Pre-privatization ECAPAG, a public not private entity, must also be recognized for having laid the groundwork that was necessary for the fundamental changes in service provision to occur. In other words, if the ultimate goal is to ensure that poor communities are able to have fair access to their entitled portion of a public good, such as water, less emphasis needs to be placed on whether the provider of that good is public or private and more emphasis needs to be directed at improving their institutional capacity to provide those services in an efficient, transparent and accountable manner."

Annex M.- NUMEROUS PROBLEMS OMISSIONS AND DISAPPOINTMENTS
FOUND IN INTERAGUA'S MASTERPLAN, CONDEMNING THE CITY TO
INADEQUATE SERVICES FOR THE DURATION OF THE CONCESSION

30 Years of Improvements and Disappointments:
Analysis of Interagua's Masterplan
(text of Chap. 12 of *Agüita Amarilla* by Emily Joiner)

At the beginning of 2005, Interagua gave ECAPAG a document with hundreds of pages, with maps, charts etc. It contains all of Interagua's plans for the 30-year concession of water and sanitation. It was designed to comply with a contract requisite whereby Interagua was committed to design an Investment Masterplan before the end of the third year of the concession.

ECAPAG approved the plan without almost any consultation with the citizens about the works and investments included. This fact is rather preoccupying for Guayaquileans, who will have to live daily through the effects of the plan. But even more difficult to accept are the many problems, omissions or lack of adequate technical investigation arising from a diligent study of the document.

According to the concession contract, the Masterplan is a "long-term plan, aimed to determine the main strategic lines planned for the evolution of Potable Water and Sanitation Services."

Specifically, its contents comprise various elements: an "exhaustive diagnosis" of each service, an evaluation of alternative plans for each service, justifications for the chosen strategy, "descriptive memoires" of the main works, an estimated annual budget and a chronogram of annual investments.⁹⁸ Before the formal concession of services, ECAPAG estimated that a \$520 million investment will be needed during the second quinquennium and onwards.⁹⁹

This investment amount was not made a requisite for the concession; Interagua kept the agency waiting for a decision on the investment amount and schedule. However, the estimation presses the company to make substantial investments throughout the concession. To create the Masterplan properly, Interagua should have investigated the condition of each one of the services, in order to plan for these investments. In other words, a really thorough investigation would have been required, of the true condition of services and the possible solutions of current problems, to create a valid document.

The Civil Engineering School of the Lay University, in an evaluation of the final proposal, indicates that the Masterplan covers a broad scope. According to their opinion, the plan should not be detailed in its contents. On the contrary, it

should be considered as “a basic primary element for Planning.” Furthermore, it says that the plans are “technically feasible,” aimed at benefiting a great part of society. It also asserts that Interagua has made the right use of legal norms, which the concession contract did not achieve. Finally, it points out that the inclusion of plans for the first quinquennium, within long-term planning, allows for the evaluation of Interagua’s compliance with their plan up to the present time.¹⁰⁰ In these basic terms, the plans included in the Masterplan constitute an important and fundamental work. Interagua is complying with their responsibility to publish a strategic plan, assuring ECAPAG that the company has a strategy to guide the 30-year concession.

In spite of these perceived achievements, other organizations observe the document with a more critical look, questioning the absence of concrete dates for the projects, as negligence on the part of the company and its regulator, ECAPAG.¹⁰¹ Even the representative of the Lay University admits that the lack of a chronogram for the works makes monitoring and follow-up difficult for ECAPAG.¹⁰²

This complaint arose also in connection with the concession contract; it exemplifies a typical element of the concession: the company determines its actions and SCAPAG does not have the authority to demand changes. The silent approval of the Masterplan by ECAPAG has allowed for future abuse on the environment, dangers to public health and non-compliance with the contract. The incapacity of the regulating entity to protect users from these effects confirms the need for citizen participation in Interagua’s planning.

The Masterplan disappointed several sectors of society, for various reasons. In the case of sanitary sewers, with a current service of around 50% of the city, depending on the source, the plans do not totally overlook the current needs of Guayaquil. In fact, the Masterplan promotes the efficiency of sanitary sewage services; it includes the increase of pumping plants and the construction of a new plant for primary treatment. However, planning is not enough to comply with the concession contract. It is deficient because it does not include the construction of a secondary treatment system or the substantial expansion of the sewage networks, which would prevent additional contamination of Guayaquil’s ecosystem.¹⁰³

Most important of all: the plan is not duly based on technical investigations of the environmental effects of the planned works. In some areas, the connections to potable water networks will precede the installation of sanitary sewers by five to ten years.¹⁰⁴ This period implies an increase of the damages caused by discharges of waste waters without sewage systems. These effects are not only the obvious contamination of the soil, threatening people’s health in these sectors, but also the corroding action of waste waters

running without control, an issue the Masterplan does not analyze.¹⁰⁵ Also, the lack of specific plans for the rehabilitation of the existing systems does not take into account the useful life of pipes. It simply indicates the need to rehabilitate the pipelines that are not working properly, to reduce contamination between sewage and potable water. Now then, the concrete planning for that project was postponed for after the Masterplan.¹⁰⁶ While Interagua delays the planning for necessary works, the soil will continue to be contaminated and the potable water networks will be at high risk.

What Interagua does recognize is the importance of sanitary sewers in the reduction of environmental contamination and of the sources of drinkable water. For this purpose they establish a goal: the installation of 133,200 connections to the networks for the period 2006-2021. However, the expansion of service's coverage is limited to 80% of the population for the year 2030, which contradicts the goal agreed on in the concession contract: 90% coverage for the year 2010.¹⁰⁷ In other words, the Masterplan does not contain sufficient plans to eliminate contamination of the urban environment with waste water, or to comply with their contractual commitments.

Whilst denying the construction of new sewage networks, Interagua recognizes the damaging effects of well known industrial and domestic contamination of the rainwater canal Las Orquídeas, which discharges directly into the estuary Daule-Guayas, without any treatment.¹⁰⁸ Likewise, the Mongollón, El Muerto, Cobina and Salado marshes receive discharges without treatment, because supposedly the pipelines ending there are exclusively for rain water.¹⁰⁹ The lack of specific connections and networks for sewage causes this contamination, since families and stores do not have an alternative way of disposal for sewage. Considering these environmental effects, the absence of Interagua's plans is not just non-compliance with the contract, but negligence on the part of the company.

Finally, and in connection with the above, the system of sewage discharge will not undergo any change. It means that after 30 years of this concession, sewage water will continue to be discharged to rivers and estuaries around Guayaquil without any substantial disinfection. Interagua has chosen to explore the possibility to implement a secondary treatment plan in Vía a la Costa, but the city itself will not benefit directly from the project. On the contrary, the only treatment contemplated for Guayaquil is basic, consisting only in beating the water and extracting solid waste.¹¹⁰

Fernando Torres, director of the Environment Center of the Littoral Polytechnic School, says that "the lack of a secondary treatment plant in Guayaquil, that includes disinfecting the water before it reaches the river, generates

contamination.” Interagua has not contemplated the construction of such a plant or investigated the capacities of the existing plants for primary treatment.¹¹¹ The lack of a more sophisticated strategy of sewage treatment seriously jeopardizes the ecosystem adjacent to Guayaquil, because the capacity of the rivers and estuaries to receive discharges is simply not adequate to the task.

The Plan also designs some improvements involving the sewer systems for rainwater and sanitation in an unhealthful, damaging way for the environment. In some sectors, they contemplate the double use of collectors and pipelines for sanitary and rain sewer, without considering the effects of this practice on the environment or on people’s health. Among the works considered are Las Orquídeas collector and others in Inmaconsa and Vía a Daule.¹¹²

These collectors will get just a lining of the pipes, which does not eliminate the risk of contamination of the adjacent ecosystem. Nor do they explain the kind of treatment those mixed discharges will receive, when the waters of the contaminated canal do not pass through any treatment system. Worse still, the rainwater drains are prone to overflow during the rains season. In the case of combined collectors, the flood results in the spill of sewage on the same environment where people live.¹¹³

Never the less, the Masterplan does not take into account, when considering the environmental effects of this work, the people’s need for public health. No sanitation has been carried out when sewage remains in the same districts that dispose of them and the combined collectors cannot guarantee its efficient evacuation.

As to rain drains many marginal sectors do not have the benefit of any system for the canalization of rain or sewage waters. Among these zones are Mapasingue, Bastión Popular, Flor de Bastión and Prosperina. The lack of sewers contributes to the erosion of the soil, soil contamination, danger for public health and economic losses of property or the capacity to work. All these effects are suffered directly by the residents. Interagua plans to invest some \$32 Million in the rainwater drain system, but the Masterplan does not contemplate the construction of any new network for rainwater drains.¹¹⁴ On the contrary, the projects selected by Interagua include the conversion of rainwater drains canals to combined collectors, the creation of pools to store rainwater and improvements of the existing canals.¹¹⁵

Moreover, the technical considerations of the company are based on a return of rains of only five years, which does not prepare the city adequately for possible rains and their effects. Interagua does not, however, recognize this fact.¹¹⁶ Inadequate pipelines will not be replaced, and no piping will be installed

in sectors that have now no service. In the case of Guasmo, the works of rehabilitation of rainwater drains will be postponed for 20 years.

There will be only rehabilitation work on the existing canals and the ditches will remain open. This will extend the effects of the infection focus, namely the ditches, into the future. In the end, then, the areas without rain drains will continue to suffer the effects of the lack of drains, and the whole city will have to bear the consequences of heavy rains that overflow the inadequate systems during 20 to 25 years more.¹¹⁷

This policy of minimal works in the area of rain drains is particularly disappointing for the residents of a city that has suffered, since its foundation, the combined effects of a rainy climate and low, marshy land. As to potable water, it is known that the losses of unaccounted for water are very high, up to 68% of potabilized water.¹¹⁸ The Masterplan designs a “Shock Plan”, aimed at the reduction of unaccounted for waters. However, that project is focused on the reduction of clandestine connections and meter problems; it is not specified when Interagua will rehabilitate the pipelines that are no longer useful and contribute to water being wasted.

Three downtown areas will receive rehabilitations, but the damages to the pipes will continue to exist along the networks.¹¹⁹ Nevertheless, these problems will not be solved. In addition to the problems of contamination through infiltration in the pipe, water leaks affect the pressure of the water that reaches the homes. Low water pressure compels people to use suction pumps in their homes, thus facilitating the introduction of contaminants in the networks. Besides, the significant waste of water proves the bad condition of the networks.

Through holes in the pipes, any contaminating organism can enter the network, and where there is not enough pressure the storing techniques increase this risk. Interagua says that they will work on the question of network rehabilitation and the elimination of leaks, but there are no chronograms to deal with this problem.¹²⁰ The lack of specificity prevents the development of any monitoring system by ECAPAG. Therefore, ECAPAG’s capacities are further narrowed, more than by a limitation to contractual obligations. Without a chronogram, there is no legal basis to regulate Interagua’s works.

The lack of specific chronograms is mentioned also in the criticism of the Lay University. In the case of improvements on the supply of potable water, they say that “clear and final decisions must be made with respect to the consequences of pressure levels, in the context of the plan”, so that the

necessary levels can be achieved to eliminate the storing of water in the homes.¹²¹

The Masterplan contemplates the increase of pressure through the construction of elevated tanks in the south, the installation of an express line between the treatment plant, and the southern districts and the implementation of matrix lines throughout the city. The express line is planned for the first quinquennium, but the other works will not be started until the fourth year of the concession.¹²² More specific dates simply do not exist, which is for ECAPAG another obstacle to achieve the effective regulation of Interagua.

Water pressure is a quality standard that should be complied with to avoid the contamination of potable water networks. The lack of plans for this issue threatens the health of users because it does not contemplate the fact that, though water may be clean at the reservoirs, it does not necessarily reach homes in the same condition.

Upon the outbreak of Hepatitis A in June, 2005, a request was made for a system of water rechlorination, to avoid the same type of contamination. However, the final proposal of the Masterplan does not include these requests nor the final reviews of the document, it does not incorporate them either. The chemical and infectious condition of the water is fundamental for people's health and may have grave consequences in their lives. From this point of view, it is a matter of great concern that Interagua has not planned any strategies to ensure, beyond all doubt, that the water drunk in Guayaquil is not only clean and apt for consumption as it leaves the treatment plants, but also arrives equally healthful to the consumer.

Furthermore, Interagua does not consider the risk of contamination at the source basin, caused by industrial effluents and the various agricultural contaminants found along the Daule river, among them fertilizers, heavy metals, sewage waters and sediments from various dams.¹²³ The Masterplan identifies the possible sources of these contaminants, but says that these discharges have only little deteriorating effect on the water quality.¹²⁴ It has to be acknowledged that this contamination affects not only the quality of the water, but also the environment of the river basin. The presence of these contaminants will have an impact on the future resources of water for Guayaquil; this consideration that has been forgotten by Interagua.

In the economic-financial aspect, the Masterplan omits explaining how they plan to recover the investment in works of infrastructure. The plans estimate current costs of all the works to be constructed and the document includes an interest rate of 9%, designed to show the effects of inflation on

investment values. This rate is not realistic. It gives the impression that Interagua has planned for more substantial investments than they will really accomplish. We are also concerned that no cost is assigned to environmental costs caused by the constructions and new works through five quinquenniums. If a concession has been granted for water and sanitation services, then it has been decided that natural resources have commercial value. Omitting costs related to the environment contradicts this policy and increases the risk of catastrophic damage to the ecosystem around Guayaquil.

Interagua has designed the Masterplan with the idea that third parties will help in the construction of connections for sanitary sewers and potable water. In fact, the company expects to build a smaller percentage of connections each year, as compared with the contributions of the third parties.¹²⁵ Interagua also says that the construction of combined collectors in the North of the city will occur through negotiations with the Municipality and taxes on the telephone service.¹²⁶ The plan mentions areas like Flor de Bastión, where any construction program will occur through a combination of funds from Interagua, the community and third parties **127**, but they do not explain how these third parties will be contracted or the nature of their negotiations with the Municipality.

In effect, Interagua is refusing the responsibility to invest in the entire geographic area of the concession. So far, Interagua has not cooperated with any third party in the expansion of sanitary sewers networks, except for the Mayor of Guayaquil. In that case, the area that was treated did not belong to the area of the concession. So then, while the company blows up the costs directly incurred by Interagua through the construction projects, the necessary expenses to avoid the wasting of resources, such as the environment, have not been considered. Besides, there will be no budget to plan the works financed by third parties, required by Interagua's plans, making any collaboration difficult.

In the end, no one knows how the company can maintain its economic efficiency, except for the rates charged directly to consumers.¹²⁸ In this way, by requesting the cooperation of third parties, neglecting the environment and depending on tariffs charged on the consumers, the company can avoid to a great extent the search for foreign financing that would be sufficient to respond to the city's needs.

As to regulation and monitoring, the concession contract defines that ECAPAG is responsible, not only for the approval of the Masterplan, but also for the quinquennial re-evaluations of relevant achievements, challenges and needs. As from the completion of the plan in 2004 and its approval by ECAPAG, the concessionaire is obliged to comply with the designed plans. Then, at the end of each quinquennium, the investments and work plans shall be reviewed for the next five years. In the first phase of the review, ECAPAG must examine the

achievements of the past quinquennium, analyzing the works to be completed so far, in order to attain the long-term goals. Having evaluated the needs and submitted them to Interagua in the “terms of reference”, ECAPAG must also determine the relation between the planned works and the necessary tariff level to achieve them.¹²⁹

Meanwhile, Interagua would elaborate the Quinquennial Investment Plan. The Masterplan does not include any systematic monitoring of the fulfillment of the plan during the quinquennia. Many of the chronograms of selected projects identify only the projects to be developed during a quinquennium or a period of several years. This means that when ECAPAG examines, through an intermediary, the standards of quality and completion of the works, their conclusions cannot change Interagua’s plans radically until the end of the quinquennium.

It is assumed that quinquennial evaluation offers all the necessary opportunities to evaluate those aspects and change plans according to results. This strategy worries us, owing to the implication that precious time will be lost in meeting quality goals, without systematic changes in the provision of services, particularly those of supply of potable water, which are only requested and made every five years. From this point of view, the document does not deserve the name of Masterplan, because the plans are not specific enough to allow for the necessary follow-up and compliance monitoring.

The elaboration of the Masterplan took place without any consultation with the citizens of Guayaquil. Therefore, obtaining copies of the document before its approval became a struggle for independent organizations, which is a violation of the Environmental Action Law, that requires citizens’ participation.¹³⁰ Moreover, not publishing the document keeps the users in the dark as to Interagua’s plans. The absence of information has perhaps simplified the elaboration of the document for Interagua, because it lessened the effect of popular pressure on the priorities determined. A potentially valuable contribution has been lost in not including the citizens. For example, once the document was obtained by social organizations, at least some alteration of the plans was achieved. On December 8, the City Observatory of Public Services and Mayor Jaime Nebot Saadi came to a verbal agreement to eliminate the use of combined collectors in the North of the city, owing to the insanitariness of that practice. This proves the power, by a positive impact, that citizen participation can have. It also exemplifies the successful strategy of organizing ideas across social levels, to foster positive changes.

In October 2005, the opinion about the Master Plan was requested from professionals from the University of Guayaquil. They replied that they could hardly contribute any concrete opinions, owing to the nature of the document

being not only technical and legal, but also political. They are right about that, the Masterplan was not elaborated in an without inhabitants, quite the contrary, Guayaquil has a complex urban landscape, built little by little, but never enough to provide services for all citizens.

Without underestimating the current obstacles in Guayaquil to obtain water and sanitation, we must consider that, in the last reckoning, the document simply does not take into account all the relevant factors. The plans do not meet the goals yearned by the citizens before the concession was assigned, neither those in the contract itself.

The lack of sufficient coverage and continuity of the three services amount to a contractual non-compliance that deserve a sanction from ECAPAG, but seemingly will never get it. At the end of the 30-year concession, the city will still find itself without adequate services and with substantial damage to the environment. According to the words of the Headmaster of the Guayaquil University, “the subject should generate scientific and technical opinions on the part of all the organisms involved, but it is necessary to start creating specific scenarios.”¹³¹

Unfortunately, this kind of public analysis at all levels of society never took place, to the detriment of all. The only option remaining for the citizens is to complain and exercise pressure for changes in the plans and for an organism that may defend their interests in the future.

Annex N.- CASE: LACK OF CONSTRUCTION OF A SANITARY SEWERS SYSTEM IN THE MAPASINGUE SECTOR

Lack of Sanitary Sewers in Mapasingue (text of Chapter. 15 of *Agüita Amarilla* by Emily Joiner)

The Mapasingue sector is located North of the city of Guayaquil, up the sides of a high hill that offers a panoramic view of the city. The geography of the sector is totally linked to the only challenges posed for the provision of water and sanitation. Interagua's authorities have tried to help the sector by including it in the quinquennial expansion plans.

However, these plans expose the lack of competent technical studies on the negative environmental effects caused by the services. Unfortunately for the residents of Mapasingue, the installation of the sanitary sewers service will come approximately 5 years after the provision of a potable water network for homes. This circumstance may end up being catastrophic for the residents, owing to the potential landslides.

The soil of the Mapasingue hill is composed mainly of hard rock. During the 35 years that have resided there, the inhabitants have been obliged to build latrines under their houses, to hold the sewage water. Meanwhile, the high cost of drilling through hard rock has prevented families from constructing adequate latrines. The rock has another disadvantage in the case of sanitation, as it does not absorb water.

After some time, the small latrine, without any absorption capacity is filled, flooding the houses and causing unsanitary conditions for the families. The viruses contaminating the soil as a consequence of the latrines or floods can survive for six months in the mud, bringing about all kinds of diseases. At the same time, grey waters (from laundry or kitchen) fall on the rock, disintegrating it until it can be better described as a soft soil, prone to landslides. At this point, one talks not only about diseases, but also loss of property.¹³²

In the year 2001, Mapasingue obtained water from community pools, installed by the Mapasingue East Association of Users and Consumers (AUCME), instead of networks. According to information submitted by the Federation of Social Organizations of Mapasingue East (FORSA), water consumption from pools is an average of 6.75 cubic meters monthly, 80% of which gets to the latrines as sewage. Considering the lack of an existing domestic network at Mapasingue, Interagua included it in its "Expansion Plan for Potable Water, First Quinquennium 2001-2006." As part of this plan, Mapasingue was programmed to receive 12,000 new connections of potable water through the

network, in 2006.¹³³ The installation of these connections will raise water consumption to 20.25 cubic meters monthly – a difference of 178,000 cubic meters for the 12,000 families affected.¹³⁴

This enormous quantity of sewage disposed of threatens the rocky soil of Mapasingue hill, causing erosion and landslides. However, Interagua is not planning to start the construction of sanitary sewers in the sector until 2010 or 2011.¹³⁵ In October 2005, AUCME and FORSA were founded, in a bid to self-manage the services lacking in their sector. Having found a foundation willing to finance the construction of the necessary sewage infrastructure, they asked Interagua for the relevant studies and technical plans and for a study of the soil, in order to understand the areas in greater danger of landslides. Interagua did not have plans at that time and refused to support the efforts of the community organizations to conduct the necessary study.¹³⁶

Later on, FORSA and AUCME submitted another proposal to Interagua, for the provision of a service of “hydrocleaners” to clean the latrines of the sector when the accessibility to water decreases, the time necessary for filling them. The cost of the service would be \$11.20 per visit, but the same hydrocleaner could be employed by several homes in order to divide the cost among the families. The proposal was rejected.

This decision of Interagua reveals some aspects of their management and consideration of their responsibilities as a concessionaire. In the first place, the non-parallel expansion projects indicate the lack of motivation in complying with the requisites of the concession, which demand extensive coverage for the two services: water and sanitation. The corresponding lack of technical studies for a project included in the Masterplan is a form of negligence. How can projects be designed without adequate plans on the physical and financial aspects? How indeed can someone justify the absence of attention to a very negative environmental impact, such as the possible landslides which would drag down houses and property? Finally, it is shocking that Interagua should reject the proposal for community self-management efforts, from the worried residents of a sector.

In committing themselves “to cooperate with Interagua, so that 100% of the connections of the Masterplan would be linked to the potable water network and the sanitary sewers, seeking alternatives for financing at multilateral organisms or local banks,” the organization could have significantly alleviated the investments required by Interagua.¹³⁷ However, the company remained inactive, according to their precedents of doing the least possible in any case. The construction of a network for potable water will be to everyone’s benefit, but it will bring about its own challenges, while the residents of Mapasingue seek ways to avoid disaster at the hands of Interagua.
