



ECOLOGICAL WASTEWATER TREATMENT PLANT, LA VORÁGINE, COLOMBIA

Our newsletter circulates quarterly and provides updates about the progress of our project activities, findings and other relevant information. You will find our contact details on the back of this newsletter.

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Interview: Technology and politics: the challenge of hydroarsenicism in Argentina

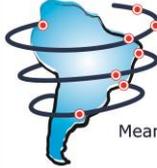
In this issue, we launch a new section featuring interviews with experts and practitioners. We dedicated the first interview to the challenge of providing safe drinking water in areas where the resource presents high levels of naturally occurring arsenic. Damiano Tagliavini interviews Dr Marta Litter, Head of the Contaminant Remediation Division at the National Commission of Atomic Energy (CNEA) in Argentina.

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DESAFIO

Newsletter

Issue 3



DESAFIO
Democratisation of Water
and Sanitation Governance by
Means of Socio-Technical Innovation

January 2014

IN THIS ISSUE

Engagement, Dissemination, Publications

Our team is very active in engaging communities, governments and other relevant actors in connection with our research.



Figure 2. Meeting of our team at the University of El Valle (UNIVALLE) with the local community of La Sirena, Cali, Colombia, December 2013

We also organize and participate in academic and policy-related events at the local, regional, national, and international levels. Our publications plan already include our first book and a Working Papers Series. Read more about DESAFIO's engagement, dissemination, and publications activities ...

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Figure 1. Members of DESAFIO participating at the 2013 International Conference of the WATERLAT Network, Quito, Ecuador, October 2013

The meaning of DESAFIO

DESAFIO literally means “challenge” in Portuguese and Spanish. Our guiding concept is tackling one of the major challenges facing Latin American societies: eradicating structural social inequality in the access to essential water and sanitation services. Our project studies how socio-technical innovations could strengthen the democratisation of the government, management, and access to essential water services. We aim to develop higher levels of understanding of the conditions, factors and processes that facilitate the emergence of these socio-technical innovations, the critical requirements to make successful socio-technical innovations sustainable and replicable, and the obstacles to their sustainability and replication.

Our project involves studying 10 examples of socio-technical innovations implemented to tackle inequality and injustice related to the management of and the access to basic water services in vulnerable communities of South America. These cases include small populations scattered in semi-arid rural areas, shantytowns in large metropolitan cities, and rural and small urban settlements. We have identified 4 examples of “historical” experiences that already have a record of 10-20 years, 3 examples of more recent development (“current” cases), and 3 examples of newly designed interventions under development and about to be implemented. Our aim is to have a range of examples to carry out a systematic comparative analysis of these experiences across time and space. For more details about our methodological approach [click here](#).

The cases under study are located in the states of Ceará, Minas Gerais, Pernambuco, and Rio de Janeiro in Brazil, Santa Fe in Argentina, and the Cauca Valley in Colombia. [Click here](#) to see more information about these cases. In this section, we present highlights of the work done by our teams during the last few months

Figure 3. Community water tap, Jardim das Fontes, Baixada Fluminense, Rio de Janeiro, Brazil



Field Work Highlights

The [Integrated Rural Sanitation System \(SISAR\)](#), Ceará, Brazil

SISAR serves small populations, in some cases composed by just 20-30 families, often scattered over long distances in rural areas of the semi-arid northeastern state of Ceará in Brazil. SISAR is coordinated and funded by the Government of the state of Ceará through its [Water and Sanitation Company \(CAGECE\)](#). We chose the SISAR experience to develop 3 of our 10 cases, which include 1 “[historical case](#)” to assess the political-institutional aspects of the system, 1 “[current case](#)” consisting of an ethnographic study, and 1 “[intervention case](#)” involving the design and implementation of a socio-technical innovation. Our teams in charge of these cases are based at the Federal University of Minas Gerais (UFMG) and at CAGECE-SISAR.

One aspect of our research on SISAR involves the collection of qualitative data to examine the sustainability of its political-institutional structure. We place emphasis on examining the process of community empowerment and

participation in the design, implementation and maintenance of the system. This includes an assessment of SISAR’s operational management, its level of transparency and accountability, and the obstacles and opportunities it faces in delivering the services.



Figure 4. Water tank, Quincas rural community, Ceará, Brazil

The study also seeks to understand the local-to-global social, political and economic context in which the SISAR model emerged. Our team is developing a systematic analysis of materials from formal and informal documentation sources related to SISAR. We are also conducting interviews with residents of 11 of SISAR's participating communities, as well as with staff members of SISAR and CAGECE involved in the management and operation of the system.



Figure 6. Animal-powered water delivery, Ceará, Brazil

Also, our research activities have centred on understanding the socio-political and cultural and the political-institutional contexts in which SISAR operates and the particularities of rural sanitation in Northeast Brazil. This has taken the form of visits to an important number of communities in the state of Ceará that have adopted, or are planning to adopt, the SISAR system. We are complementing this with a thorough review of DESAFIO's theoretical and methodological foundations to adopt appropriate ethnographic techniques in light of the project's research questions and analytical dimensions.



Figure 8. Domestic system for water reuse, Ceará

Figure 5. Participatory mapping, Cascavél, Ceará



Figure 7. Participatory mapping, Cascavél, Ceará



Figure 9 Participatory mapping, Cascavél, Ceará

We are currently developing a preliminary ethnographic study focusing on community participation in the municipality of Cascavél, where we will build a new water and sanitation system as part of our intervention case study. We are working on the design and implementation of the intervention with the active engagement of the beneficiaries in all stages of the process: before, during and after the introduction of the system. DESAFIO's team has established a direct dialogue with the community. We have also followed closely the process of allocation of resources for the construction of the system by the state government. In addition, in one of the multiple visits to the community, we employed a participatory mapping technique where the residents mapped their homes, routes of access to water and sanitation, and features of the community's ecological-environmental surroundings. We placed the emphasis on identifying the extent of and the forms in which the process of design, implementation, and management of the socio-technical innovation promotes the meaningful participation and the empowerment of the community and facilitates their appropriation of the system.

We complemented these fieldwork activities with the design of a questionnaire for the collection of information to assess the impact of the intervention on the living conditions of the community. We also conduct a comprehensive literature review on the local and regional context of the study.



Figure 10. Rainwater cistern, Cascavél, Ceará

The experience of Mustardinha Community in the Metropolitan Area of Recife, Pernambuco, Brazil

Recife is the fifth largest state capital in Brazil, with slightly under 3.7 million people living in its Metropolitan Area composed of 14 municipalities. The municipality of Recife has over 1.5 million people. Recife is a beautiful city on the Atlantic coast, sometimes termed the "Brazilian Venice" owing to its rivers and numerous canals and bridges.

framework, which has been praised by institutions like the World Bank, the Inter-American Development Bank, and the United Nations Development Programme (UNDP) as a model for effective participatory policy to deliver basic water services in poor communities. Our team places the emphasis on rescuing the historical process of the system's implementation and its multidimensional impact on the participating communities.



Figure 11. Recife, capital of Pernambuco, Brazil, on the confluence of the Beberibe and Capibaribe rivers with the Atlantic Ocean



Figure 12. Images of private water vending in Recife

Our research seeks to understand the historical process of the system's implementation and its impact on local living conditions. To this end, we work on the collection of primary and secondary data, and conduct participatory research involving community leaders in Mustardinha. We also organize regular consultation meetings, workshops, and in-depth interviews with experts, practitioners, and public authorities, who have been directly involved in designing and implementing the innovations.

However, around 50% of the Recife's households are located in shantytowns (*favelas*), often lacking the most essential public services. In the last two decades, there have been different initiatives to tackle the situation of inequality and injustice generated by this situation. Our project has chosen the community of Mustardinha for 2 of the case studies. One is a ["historical" case](#) focused on the implementation of the "condominial" sanitation system since the late 1980s, and the other looks at the more recent experience with the ["integrated sanitation" system](#) introduced since 2001. Our local team at the Federal University of Pernambuco (UFPE) is in charge of the case studies.

The condominial system was implemented in Mustardinha community since the 1990s. Our activities focus on examining the condominial system's institutional



Figure 13. Images from a workshop on the condominial system held with experts and community leaders, Recife, August 2013

These meetings involved, among others, Eng. Jose Carlos Melo, a native from Recife who designed the condominial model in the late 1980s and contributed to its implementation in the city, other parts of the country, and eventually to its worldwide diffusion. See, for instance, [World Bank-UNDP publications](#) by Eng. Melo; see also his intervention in [DESAFIO's Working Paper 1](#), where you can also read about an ongoing debate in Brazil about the pros and cons of the condominial model. We also interviewed Eng. César Augusto Rissoli, from the [Environmental Sanitation Company of Brasilia \(CAESB\)](#). Brasilia's is an important case because, being the country's capital with a population of over 2.5 million people, it has implemented the condominial system across the city, for rich and poor alike (the condominial system was originally designed for poor communities). We are currently working on the publication of findings emerging from the workshops and interviews in the form of a [Working Paper](#).



Figure 15. Interview with Eng. César Augusto Rissoli (CAESB), August 2013

We are carrying similar activities in relation to the second case study, that focuses on the integrated sanitation system that was implemented in Recife since 2001. This initiative was aimed at building on the success of the condominial system that had already been implemented in the city, but introducing significant modifications to correct problems and shortcomings. Here too we are carrying out a comprehensive survey of official documents, audiovisual material, articles, academic reports and other documentation available in public and private institutions related to the implementation of the systems under study, not just in Recife but also in other parts of Brazil and abroad. We concentrate on the

case of Mustardinha community, where local people have a historical memory of the processes involved in the implementation of both systems. Most of the community leaders we are working with have been involved in these processes for well over 20 years now, which provides us with an excellent ground to develop our case studies. We endeavour to strengthen the relationship with the members of the community, and this has proven to be invaluable for our research given the rich experience of the local actors in terms of their social, political, and even technical-managerial involvement in the process, and their generosity in sharing that experience with us.



Figure 14. Meeting at Mustardinha Community Centre, Recife, February 2013

Community-led water provision in Queimados, Baixada Fluminense, Rio de Janeiro, Brazil

Our team at the Federal University of Rio de Janeiro (UFRJ) is in charge of this case study, which focuses on the case of Queimados community. In this stage, the research has been centred on the collection of primary and secondary data and in establishing institutional alliances with key actors. We focused the data collection on gathering information about the conditions, requirements and possibilities of people-led and low-cost solutions for the delivery of safe water services in vulnerable communities.



Figure 16. Community water tap, Queimados, Baixada Fluminense, Rio de Janeiro, Brazil



Figure 17. Multiple uses of the community water taps. A mother washing her child, Queimados, Baixada Fluminense, Rio de Janeiro

We have been collecting secondary qualitative and quantitative data from municipal and provincial sources. The work also included the design and application of a short exploratory questionnaire in the community. The information collected has provided us a better understanding of the wide range of social, economic and cultural aspects that characterize the grassroots socio-technical innovations employed by this community to solve their problem of lack of water for domestic consumption.



Figure 18. Carrying water from the community tap, Queimados, Baixada Fluminense, Rio de Janeiro

Working closely with the local community and with relevant social and public organizations is a fundamental component of our methodological approach. We established alliances with local key actors such as the Guandu River Basin Committee (which serves Queimados), the Municipal



Figure 19. Members of DESAFIO's UFRJ team at a meeting with the Guandu River Basin Committee, Baixada Fluminense, Rio de Janeiro, September 2013

Secretariat of the Environment, and the local branch of Brazil's [National Health Foundation \(FUNASA\)](#). These alliances have been key to develop our understanding of the broader context of the dynamics of community-led water management in Queimados.

We complement our work in this case study with an interdisciplinary literature review on DESAFIO's key concepts about the democratisation of water and sanitation services, vulnerability, socio-technical innovations, and social participation.

Experiences of community empowerment, resilience and sustainability in the Cauca Valley, Colombia

Our research team at the University of El Valle (UNIVALLE) in Cali is in charge of two case studies. The first study is a ["historical case"](#) looking at the peri-urban community of La Vorágine, while the second relates to an [ongoing experience](#) in the rural community of Mondomo.



Figure 20. Visit to the Potable Water Treatment Plant, La Vorágine, Colombia, July 2013

La Vorágine is a small peri-urban community on the bank of the river Pance, near Cali. Since 1997, the community, through their Water and Sanitation Users Association (ASOVORÁGINE), has been responsible for the operation and maintenance of an ecological water and sanitation system. The process involved the mobilization and empowerment of the community, in close partnership with public local actors including the region's water utility and relevant authorities in the areas of environment and health.



Figure 21. Workshop with AQUACOL members, La Vorágine, Colombia, November 2013

We employ a range of research methods such as Participatory Action Research (PAR) and Participatory Rural Appraisal (PRA) to capture the interactions between the social and ecological systems, and the relationship between the vulnerability and the adaptive social capacity (resilience) of the communities in the face of external pressures driven by the activities of interest groups operating in the region.



Figure 22. Meeting with manager of the public water company EMQUILICHAO, Santander de Quilichao, Colombia, December 2013

Mondomo is a rural community in the municipality of Santander de Quilichao. The

community has a drinking water treatment plant that was built through an alliance between the public and private sectors and the community.



Figure 23. Visit with national authorities to Mondomo's Water Treatment Plant, Santander de Quilichao, Colombia, December 2013

The plant has supplied potable water 24 hours a day for the past 15 years. The management of the system is the responsibility of Mondomo's Association of Water Users. This association has played a critical role in the creation of [AQUACOL](#), the Colombian Association of Community-Based Water Services Providers and has had a prominent role as a Community Learning Centre for Water.



Figure 24. Workshop with AQUACOL members, Santander de Quilichao, Colombia, December 2013

Our team at UNIVALLE has developed a long-term partnership with both communities and with the relevant authorities, and this relationship is being reinforced in the context of the research.



Figure 25. Land regularization event for Quilombola communities, Bom Jardim da Prata, Minas Gerais, Brazil, September 2013

Tackling extreme vulnerability in a rural community in Brazil's semi-arid region

This is an ["intervention" case study](#) looking at the experience of the Quilombola community of Lagedo, in the state of Minas Gerais. Lagedo is a small rural community originally composed by freed slaves who escaped from their owners. These communities are known in Brazil as Quilombolas. The intervention will consist in the design, implementation and capacity building for the management of a water treatment system in Lagedo. To carry out this study we have established partnerships with Brazil's [National Health Foundation \(FUNASA\)](#), the [National Institute of Colonisation and Agrarian Reform \(INCRA\)](#), and with civil society organisations representing Quilombola communities such as the [Federation of Quilombola Communities in Minas Gerais \(N'Golo\)](#).



Figure 26. Land regularization event for Quilombola communities, Bom Jardim da Prata, Minas Gerais, Brazil, September 2013

In the first stages of the research we carried out a diagnosis using Participatory Rural Appraisal (PRA) techniques with the community. We also engaged an interdisciplinary group of students previously trained in participatory research techniques such as participatory mapping, daily routines and transversal walks, which we conduct with members of the community. The activities have also involved planning meetings and joint actions such as the elaboration and application of an initial survey of the community's socioeconomic situation and of their access to basic water and sanitation.



Figure 27. Transversal walks during the diagnosis of the local situation, Lagedo, Minas Gerais, Brazil July 2013

In addition, DESAFIO's team has participated in all the important events that have taken place in the Quilombo since the project started. This included the presentation of the anthropological report that provided the basis for the community's land regularization process with the federal government. We complement these fieldwork activities with laboratory tests to examine the process of filtration of water with different levels of turbidity to design a water treatment system that is adequate to the local conditions.



Figure 29. The UNR team training local schoolteachers and children, San Francisco, Santa Fe, May 2013

Capacity building to monitor water quality in Argentina

This is also an ["intervention" case study](#). It is centred on developing local capacities by working with schools in the communities of Coronda, La Chispa, and San Francisco, province of Santa Fe. We work jointly with teachers, schoolchildren and their families in the diagnosis of the population's exposure to low-quality water resulting from high levels of naturally occurring arsenic and fluoride in the groundwater. Our activities include knowledge exchange between local community members and experts, mapping the geographical, physical-chemical, and sociocultural characteristics of the region's water basins, and the collection and analysis of water samples to test the quality of the surrounding sources.



Figure 28. Water treatment plant with reverse osmosis technology for arsenic removal, San Francisco, October 2013

We are training schoolchildren to take samples of the water wells in their homes, to record their residential water usage and local rainfall levels, and to construct databases on the characteristics of their local water and sanitation services. We also designed, jointly with teachers and students, a preliminary questionnaire to define the baseline indicators for assessing the impact of the capacity-building intervention. We also conduct interviews with members of the three communities and other important local stakeholders such as the Ministry of Education of Santa Fe, the local water cooperatives, and the Sanitation Regulatory Agency of Santa Fe (ENRESS). Students, teachers and DESAFIO researchers are now developing educational materials on the use of technological tools to improve the value of the data collected.

The Interview

In this issue, we introduce a new section in our Newsletter, The Interview. The section will feature short interviews with experts, practitioners and other relevant actors who have made significant contributions in some area connected with our research project. In this case, we have dedicated the section to the pollution of water sources by naturally occurring arsenic, which is a major problem in many countries. Water-related diseases connected with the ingestion of arsenic can be fatal, and we have dedicated [DESAFIO's case study](#) in Argentina to this topic. A member of our local team in charge of the study has carried out the interview with an international expert in this topic. Good reading!

Technology and Politics: the challenge of hydroarsenicism in Argentina

1) How is it that you became interested in studying the problem of arsenic in water?

It has been a little winding path. I actually work on aspects related to advanced technologies to treat water, air, and soil. For example, catalysis, new technologies that use light, and in recent times, I have worked especially on iron nanoparticles. We started about 10 years ago with a project from the Organization of American States (OAS) to develop water treatment technologies for remote areas in Latin America. It was then that we realised that we were working with technologies that could be used to remove arsenic from water. A few years later, I coordinated the [IBEROARSEN Network](#) funded by the [Iberian-American Programme for Science, Technology and Development \(CYTED\)](#), on the issue of arsenic in the region. The programme was jointly funded by the Spanish government and Latin American scientific institutions. The network included research and development groups in 17 Latin American countries, all with experience in the field of arsenic, but it only included researchers from the hard sciences such as geologists, chemists and engineers. Around that time, we had not yet included researchers from the health or social sciences. In terms of the treatment and removal of arsenic from water, we are working on advanced, innovative and low-cost technologies that can be used in remote areas, both rural and peri-urban.

2) Do you believe that current progress in technology development is sufficient to solve the problem of arsenic in drinking water?

No, technical solutions at the level of the laboratory exist, but arsenic is very complicated and therefore there is not one single technology that can be used in all circumstances. You need to conduct specific tests with water from each site to develop technologies appropriate for each situation and context.



An Interview with Dr Marta I. Litter*

By Damiano Tagliavini**

* Marta Irene Litter holds a PhD in Chemistry from the University of Buenos Aires and Postdoctoral Studies from the University of Arizona, United States. She is the Head of the Contaminant Remediation Division of Argentina's National Atomic Energy Commission (CNEA), Senior Researcher at the National Council for Scientific and Technical Research (CONICET) and Professor at the University of General San Martín, in Buenos Aires. Dr Litter has published over 180 scientific papers, is the coordinator of the [CYTED IBEROARSEN Network](#), and has a long trajectory as coordinator of water treatment projects, mainly in the area of advanced oxidation technologies. She won the [MERCOSUR Award for Science and Technology](#) in 2006 and 2011, and the [Innovation Award](#) from Argentina's Ministry of Science, Technology, and Productive Innovation in 2009. She is President of the Local Organising Committee of the [5th International Congress on Arsenic in the Environment](#) to be held in Buenos Aires from 11th to 16th May 2014.

** Damiano Tagliavini works at the National Water Institute (INA) in Buenos Aires, and is a member of DESAFIO's research team at the National University of Rosario (UNR), Santa Fe.

3) Do you think that there is a need for more fieldwork research?

Yes, we should do more fieldwork. We are right now doing a very small project consisting of a pilot study in the rural areas of the Province of Santiago del Estero. The idea is to choose 4 or 5 settlements, take water samples and test our technologies for arsenic removal. In parallel, given that this project also involves social aspects, a group of sociologists and anthropologists will carry out surveys to improve our understanding of the local conditions regarding the access to water and the relationships between these populations and the resource.



Figure 30. Campaign advert reading: "Arsenic-free water is a right", Chivilcoy, Buenos Aires, Argentina

4) Do you think that research on water issues must be interdisciplinary? How does your research group address this matter, and what benefits or difficulties has it produced?

Yes, definitely. It is necessary that experts from different areas do collaborative work. At first, we thought we could do it all, but really, as experts in the hard sciences, we just do not have the knowledge to tackle the social aspects, which is so essential in this area. In addition, this problem can only be solved with the intervention of local, provincial, and national governments, which need to take on this issue as a State policy.

5) You talked about the case of the province of Santiago del Estero. In the DESAFIO project, we are working with cases in the western part of the province of Santa Fe, but have also taken notice of other cases in the provinces of Buenos Aires and La Pampa. Do you think that there is reliable information on the magnitude of the problem in the country and about the number of people that may be affected?

Yes, there is knowledge, although it is still precarious, in the sense that there are unexplored areas and the results are quite dissimilar for each place. For example, in the province of Santa Fe, as far as I know, arsenic levels in the water are not as high as in other places such as the provinces of Santiago del Estero, Cordoba, and La Pampa. The water in Santa Fe has arsenic, but the levels are not as high, which does not mean that you can stop worrying, because in fact the level of arsenic in drinking water should be zero.

"THIS PROBLEM CAN ONLY BE SOLVED WITH THE INTERVENTION OF LOCAL, PROVINCIAL, AND NATIONAL GOVERNMENTS, WHICH NEED TO TAKE ON THIS ISSUE AS A STATE POLICY"

6) There is a dispute about the practical implications of meeting the recommendations of the World Health Organization (WHO) in terms of the maximum concentration of arsenic that should be allowed in drinking water.¹ Some believe that water suppliers could not afford the costs that must be incurred to reach the required level of purification. In this sense, how affordable are the technologies that your group is developing?

We work on low-cost technologies that can be used in poor areas without access to piped water.

7) Can these technologies be applied on a small scale?

Exactly. Now, there are also large-scale technologies. I think the issue is more political than economic; it has to do with making the decision to use these technologies. Because we have technologies such as treatment plants, reverse osmosis systems, coagulation, adsorption, etc. There are also filters. People with a higher socioeconomic status can buy filters and that is it, issue solved. However, arsenic is complicated, firstly because it is ignored, people are not aware that they are drinking water with arsenic because it is colourless and odourless. Secondly, because the authorities in general do not act to solve the problem. Thirdly, the research groups working on issues related to arsenic in our country are very disconnected. It seems to me that there is a need to do more collaborative work between the research groups.

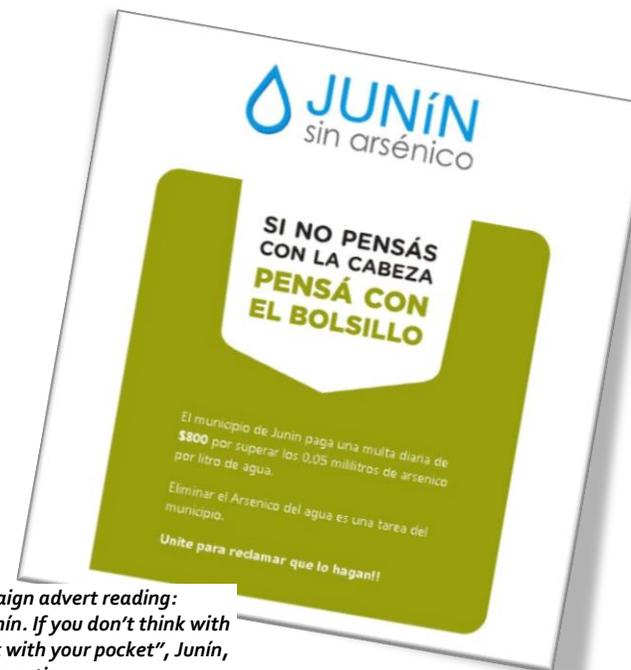


Figure 31. Campaign advert reading: "Arsenic-free Junin. If you don't think with your brain, think with your pocket", Junin, Buenos Aires, Argentina

About the problem of Environmental Hydroarsenicism (HACRE, by its Spanish acronym) in Argentina

8) A few articles published by "The Arena"², a newspaper from La Pampa, criticised a decision by the Supreme Court of Justice requiring a water company in the province of Buenos Aires to deliver water containing less than 0.01 milligrams of arsenic per litre, as recommended by the WHO. The articles argued that technologies to reduce arsenic levels were not widely available, and that adopting the Court's decision would mean having to disrupt the water supply in much of the country. The articles also cited a research paper that argues that there is no evidence of a correlation between the presence of high levels of arsenic in the water of La Pampa and the high incidence of malignant tumours detected in the population. Do you believe that there is a direct relationship between the consumption of water with arsenic and cancer?

I would not be so emphatic. But it is not for nothing that the Secretariat of Water Resources and the Ministry of Health are conducting a joint study on hydroarsenicism.³ What I do think is that something must be done. Because if we spend our time just discussing whether or not it is possible to comply with the regulations and meanwhile we do nothing, we are wrong. The question of regulation is an issue that we prefer not to engage with, because I have been in meetings to discuss the subject and these have been quite unproductive.

9) **Do you agree that raising awareness about the health consequences of prolonged consumption of water with arsenic is a priority? Have we made progress in terms of building awareness?**

Of course, it is a priority. I do not know how much progress there is, but I hope that we are making progress. For example, this year we are organising an international conference on the subject in Buenos Aires, but that is not enough. I personally plan to continue working in my lab, but I am not a political entity that can make decisions. At most, I can disseminate the results of my research. It seems to me that the actors who have a greater say in the country should make a significant effort to tackle the problem, we the researchers do not have much say. It is urgent to take practical action.

10) **Do you think that it is necessary to redirect investments in water and sanitation? Some have argued that given the high costs, it is not possible to invest simultaneously in improving the quality of drinking water and to expand access to water services. Is it?**

True, I have heard these arguments. I think that in places where arsenic is a problem you have to deal directly with the arsenic problem, without neglecting the others.



"I AM NOT A POLITICAL ENTITY THAT CAN MAKE DECISIONS. AT MOST, I CAN DISSEMINATE THE RESULTS OF MY RESEARCH. IT SEEMS TO ME THAT THE ACTORS WHO HAVE A GREATER SAY IN THE COUNTRY SHOULD MAKE A SIGNIFICANT EFFORT TO TACKLE THE PROBLEM, WE THE RESEARCHERS DO NOT HAVE MUCH SAY. IT IS URGENT TO TAKE PRACTICAL ACTION."

12) **Tell us a bit more about the upcoming Congress in Buenos Aires.**

This is the [5th International Congress on Arsenic in the Environment](#), and will take place at the Faculty of Economics, University of Buenos Aires (UBA), on 11-16 May 2014. We have over 300 registered participants and a wide-ranging agenda. The topics include the origin and occurrence of arsenic around the world, the relationship between consumption of water with arsenic and health, the presence of arsenic in food (which for our country is tremendously important given the presence of arsenic in rice and cereals, and the fact that people generally do not realise that they can ingest arsenic through food), to analytical tools and technologies for the removal of arsenic and mitigation policies. There will be renowned scientists in the lectures and round tables addressing these matters. To learn more people can visit our [Congress's website](#).

Notes:

1. The WHO's recommendation is a maximum concentration of 0.01 milligrams per litre (mg/L) (WHO, 2011: 178).

2. http://www.laarena.com.ar/opinion-arsenico_un_toque_de_cordura-107567-111.html
http://www.laarena.com.ar/la_ciudad-el_arsenico_en_el_agua_no_es_causa_de_cancer_en_la_pampa-107379-115.html
http://www.laarena.com.ar/opinion-arsenico_polemico_fallo_de_la_corte-106981-111.html

3. The research project is entitled "Hydroarsenicism and basic sanitation in Argentina: Basic studies for the establishment of criteria and health priorities in supply and quality of water". The project promotes cooperation between national and provincial governments for detecting arsenic in water and estimating the consequences of the consumption of water with arsenic on public health. Articles 982 and 983 of Argentina's Food Code, which set the limit of arsenic in drinking water at 0.01 mg/L, have been suspended pending the results of this project.

References

World Health Organisation (WHO) (2011), [Guidelines for Drinking Water Quality](#), Geneva.

Engagement, Dissemination, Publications

DESAFIO has a Strategic Plan for engagement and dissemination activities that includes the organization of and participation in events at the local, regional, national, and international levels. DESAFIO emerged from the work of the research network WATERLAT, which is a key instrument for the dissemination of DESAFIO's findings. We have recently launched the DESAFIO Series within WATERLAT's Working Papers (see below under Publications). We provide below information about our activities between July and December 2013.

EVENTS

II Regional Governments' Meeting, National Programme for Rural Sanitation, Lima, Peru, 16-17 July 2013

Helder Cortez (CAGECE) was invited to participate in this international meeting financed by Peru's Ministry of Housing, Construction, and Sanitation, and co-financed by the Swiss Agency for Development and Cooperation (SDC). One of the meeting's main objectives was to exchange knowledge on international experiences in the management of rural water and sanitation systems and identify strengths that may be applicable to Peru's regions. Cortez presented the SISAR Model of Rural Sanitation, which has been internationally recognised as a success story in terms of its participatory approach to the provision of WSS in rural communities and is the focus of three of DESAFIO's [case studies](#).

Figure 32. Banner of the DESAFIO workshop on the condominial system, Recife, 15 August 2013



Workshop on "The Condominial Sanitation System", Recife, Brazil, 15 August 2013

Hermelinda Ferreira and Alexandre Ramos (UFPE) organised this event in Recife, where we have 2 of the project's [case studies](#). The workshop took place at the [Joaquim Nabuco Foundation](#), which generously offered the venue. It had the participation of DESAFIO's Scientific Coordinator, José Esteban Castro (Newcastle), and representatives of the [Local Advisory Committee](#) from Pernambuco's State Forum for Urban Reform (FERU) and from the Federation of Entities for Social and Educational Assistance (FASE). The event featured presentations by experts, academics, city managers, and leaders from the communities of Mustardinha, João de Barros, and Coelhos on the city's experience with the condominial sanitation system. We are producing [DESAFIO's Working Paper 2](#) based on the proceedings of this workshop.

10th International Water Association (IWA) Specialist Group Conference: Advances and Innovations in Pond Treatment Technology, Cartagena, Colombia, 19-22 August 2013

Miguel Peña (UNIVALLE) and Cesar Mota (UFMG) participated in this event organised by the CINARA Institute. Both Peña and Mota acted as discussants throughout the conference and presented their most recent work on the conference's central theme. They also took this opportunity to discuss DESAFIO's ongoing research activities and to introduce the project to other colleagues and students participating in the conference. During the event, Peña was elected President of the [IWA's Specialist Group on Wastewater Pond Technology](#). This group specialises in the study of stabilisation ponds and its related systems, which are key for a future sustainable management of wastewater. Peña sees this important new role as an opportunity to generate spaces for the dissemination of the region's scientific work in the area of water and sanitation.

27th Brazilian Congress of Sanitary and Environmental Engineering (ABES), "Sanitation, Environment, and Society: between Management, Politics, and Technology", Goiânia, Brazil, 15-19 September 2013

Léo Heller (UFMG) participated in several sessions and panels of the congress. Jointly with José Esteban Castro (Newcastle), they presented and signed copies of the Portuguese version of their edited book [Water and Sanitation Services. Public Policy and Management](#).

Seminar: Information and Communication Technologies Applied to Problem Solving in Biomedicine, Rosario, Argentina, September 2013

This seminar was organised by Argentina's Society for Clinical Research. Alfredo Rigalli (UNR) presented his work on the links between naturally occurring arsenic and fluoride in water and disease, especially diabetes.

XXIX Congress of the Latin American Sociological Association, "Crisis and Social Emergencies in Latin America", Santiago de Chile, 30 September - 4 October 2013

José Esteban Castro (Newcastle) participated as speaker and panel organizer in several sessions. These included a special panel on "Water, Power and Territory, where he gave a speech containing references to the work being carried out in DESAFIO.

V International Meeting of Researchers, Water Justice Network, Quito, Ecuador, 10-14 October 2014

José Esteban Castro (Newcastle) was invited to participate in this event as panel commentator and discussant. He provided information about the work being carried out in DESAFIO.



Figure 33. Images of Léo Heller and José Esteban Castro, ABES Conference, Goiânia, Brazil, September 2013



Figure 34. International participants at the 2013 WATERLAT Conference, Quito, Ecuador

V International Meeting of the WATERLAT Network, "Is Latin America moving towards a 'post-neoliberal' water politics?", Quito, Ecuador, 14-18 October 2013

The WATERLAT network has an annual meeting, which in 2013 was hosted by Ecuador's [Institute of Higher National Studies \(IAEN\)](#) in Quito. Several members of DESAFIO participated in the event: Ana Lucia Britto and Suyá Quintslr (both from UFRJ), Hermelinda Ferreira and Anna Alencar (UFPE), Javier Gonzaga, the Colombian representative in our [Strategic Advisory Committee](#), and José Esteban Castro (Newcastle), who also coordinates the WATERLAT Network. In addition to the dissemination of the project's work by different means, we organized a special workshop to discuss DESAFIO's progress and another on the "Contradictions, obstacles and opportunities facing the implementation of the human right to water in Latin America". We are developing [WATERLAT's Working Paper 4](#) based on these workshops.

CINARA Institute's International Conference: AGUA 2013, Cali, Colombia, 15-18 October 2013

DESAFIO's team members at the CINARA Institute (UNIVALLE) collaborated in the organisation of the 9th edition of this international event. More than 300 people from 14 Latin American and European countries participated, among them scientists, academics, environmental groups, community leaders, and governmental and non-governmental actors. The event's central themes were 'Risk in Water Management', 'Managing Risk in the Water Cycle', as well as, 'Water Quality: Challenges in the Face of Environmental Risks' and 'Environmental



Figure 35. A participant at the 2013 WATERLAT Conference enjoying a panoramic view of Quito from the [Yaku Water Museum](#), where some of the activities took place.

Justice and Water Conflicts'. CINARA's members participated by presenting their pioneering work in the development of appropriate technologies for water supply and sanitation for vulnerable populations in the Andean Region.

Meeting of the "Sustainable Water Action Network" (SWAN), University of Arizona, Tucson, United States, 28 October 2013

The SWAN Network is funded by the European Commission and its main objective is to strengthen research links between Europe and the United States. They had a special meeting at the University of Arizona and they invited José Esteban Castro (Newcastle) to make a presentation on the topic of "water governance".

VI Regional Symposium on River Hydraulics, Santa Fe, Argentina, 6-8 November 2013

Margarita Portapila and Martin Romagnoli (UNR) participated in this event. They presented their research on the characterisation of the runoff of the Carcaraña River basin, which addresses the ecological aspects of their [case study](#) in the province of Santa Fe.

International Conference on "The role of Parliament and the Challenges for an Inclusive Water Governance: Experiences to Learn from", Legislative Assembly of El Salvador, San Salvador, El Salvador, 11-12 November 2013

This was a special event organized by the Environment Secretariat of El Salvador's Legislative Assembly to trigger a public debate with the national legislators about the crucial importance of passing a new water law, which would be the first in the country. El Salvador has over 90% of its surface water already compromised by higher levels of pollution, and there is a need for stricter legislation and regulation to protect the population from the consequences of this situation. The Assembly invited José Esteban Castro (Newcastle) to speak about "The world's water crisis, sanitation, and the role of parliaments in water governance", where he made reference to DESAFIO's ongoing work.



Figure 36. International Conference at El Salvador's Legislative Assembly

Consultation Workshop on the Challenges facing the Realization of the Human Right to Water at the Local Level, Santa Cruz de la Sierra, Bolivia, 27-28 November 2013

This workshop was organized by the UN’s Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation, Catarina de Albuquerque. The purpose of the workshop was to gather contributions from regional experts for the elaboration of a “Manual for the Realization of the Human Rights to Water and Sanitation: from politics to practice”. The elaboration of the manual is coordinated by Catarina de Albuquerque and her team. Helder Cortez (CAGECE) was one of the invited experts, and he made a presentation featuring aspects of DESAFIO.

Public debate about the “Past, Present, and Future of Water in Argentina. Debates at 40 years of the creation of National Water Institute (INA)”, Buenos Aires, Argentina, 28-29 November 2013

This event was organized by a group of young members of the National Water Institute (INA), Argentina, which includes our team member Damiano Tagliavini (UNR). The event was supported by the Ministry of Planning, Public Investments, and Services, and the Subsecretariat of Water Resources. The organizers invited Alberto Muñoz, Director of the Regulatory Agency of Sanitation Services (ENRESS) in the province of Santa Fe, Argentina and member of our [Local Advisory Committee](#), and José Esteban Castro (Newcastle), to participate in a panel on “Re-statization of water services. Towards a new Model of Water Services Governance?” They discussed the socio-political and policy-institutional context of water and sanitation services, which are two of the key conceptual dimensions of DESAFIO.

Meetings to support the strengthening of AQUACOL, Cauca Valley, Colombia, November 2013

Members of DESAFIO at UNIVALLE worked in close collaboration with the Colombian Association of Community-Based Water Services Providers (AQUACOL) to discuss strategies for improving the visibility of the initiative through the production of NotiAQUACOL, the association’s newsletter. This newsletter had been published between 2008 and 2010 under the motto “Written by Communities for Communities” and addressed a range of topics such as the importance of water resource conservation and experiences in managing community water systems. DESAFIO’s researchers will now support the production of the newsletter in this new stage through direct advice and the organization of workshops. The aim is to rebuild the newsletter as a means of effective communication and dissemination among partner and professional organisations and institutions in the sector.

number of leading institutions involved in the processes of environmental management in the municipality, as well as by local government representatives and community leaders. DESAFIO’s members at UNIVALLE took an active part in this event and made presentations in all the thematic discussions that took place. The forum also served as a platform for the official launch of Cali’s Municipal System of Protected Areas (SIMAP), which aims for the creation of a Water Fund and the confirmation of the city’s protected areas, among other strategies.



Figure 38. Workshop of the Editorial Committee of NotiAQUACOL, La Varágine, Colombia, November 2013



Figure 39. Participant at the Forum “Cali, Greener and Sustainable”, Cali

Visit of the UN Special Rapporteur on the Right to Safe Drinking Water and Sanitation to Brazil, December 2013

Catarina de Albuquerque, UN Special Rapporteur on the Right to Safe Drinking Water and Sanitation, visited the state of Ceará in December 2013. Fortaleza was one of the five cities chosen by the rapporteur during her 10-day visit to Brazil. This mission aimed to assess the sanitation conditions of Brazil’s poorest and most vulnerable populations and the human rights situation in the water and sanitation sector.

Citizen’s Forum “Cali, Greener and Sustainable”, Cali, Colombia, December 2013

This forum, was organised by the Department of Environmental Management (DAGMA) and sponsored by The Nature Conservancy. It sought to visualize, educate and reflect on Cali’s environmental heritage through the exchange of knowledge and experiences. It also aimed at providing recognition for the work that various institutions and communities do for the city’s environmental protection. The forum focused on four guiding themes: Water Management, Environmental Management of Areas of Interest, Environmental Education and Participation in Environmental Policy and Advocacy. The forum was attended by a



Figure 40. Helder Cortez presenting DESAFIO to the UN Special Rapporteur on the Right to Safe Drinking Water and Sanitation

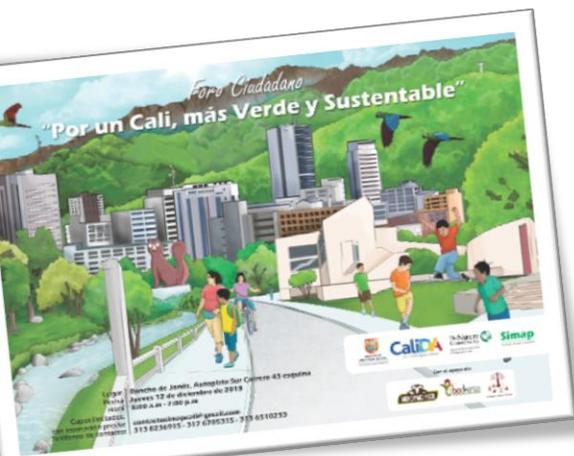


Figure 37. Poster for the Forum “Cali, Greener and Sustainable”, Cali, Colombia

The assessment focused on the situation of water and sewage systems in informal settlements, slums and rural communities and paid particular attention to the impacts of the lack of water and sanitation on the health of the residents of these communities. During her visit to Ceará, Catarina de Albuquerque met with CAGECE's director, André Facó, and learned about DESAFIO during a presentation by Helder Cortez (CAGECE). Helder Cortez also guided her visit to some rural communities in the state that had adopted the SISAR model of rural sanitation.

Representatives of Ecuador's provincial governments visit ASOVORÁGINE, La Vorágine, Colombia, 22 December 2013

The Association of Water and Sanitation Users of La Vorágine (ASOVORÁGINE), one of DESAFIO's case studies (UNIVALLE), hosted a visit by representatives of Ecuador's provincial governments participating in the Integrated Water Resources Management (GIRH) Training Programme. This initiative is part of the UN-Water Decade Programme on Capacity Development in the framework of the International Decade for Action 'Water for Life' 2005-2015. The programme promotes and disseminates best practice in the area of water and sanitation globally and aims to support governments' efforts to achieve the Millennium Development Goals (MDGs) and other targets related to water with capacity development, education, training and institutional development.



Figure 41. Meeting with AQUACOL members, Colombia

Meeting on "A dream come true: La Sirena's Aqueduct inaugurates its new administrative offices", La Sirena, Cauca Valley, Colombia, 22 December 2013

UNIVALLE's team participated as a special guest in this event. The new offices will serve as a Community Learning Centre for Water and Sanitation and were built with the

involvement of the community in all stages of the process.

La Sirena's Aqueduct is one of the four Community Learning Centres of [AQUACOL](#), the Colombian Association of Community-Based Water Services Providers. These centres are organised by the community as spaces to share information, experiences, and knowledge related to water management and sanitation. DESAFIO supports the consolidation and strengthening of AQUACOL and its Community Learning Centres and is actively working towards the transformation of ASOVORÁGINE, the Association of Water and Sanitation Users of La Vorágine ([case study 2.4](#)) in a Learning Centre.



Figure 42. Inauguration of La Sirena's Community Learning Centre for Water and Sanitation

ESTABLISHING LINKS

DESAFIO aims to establish links with other projects with similar objectives and interests.

On 4 October 2013 José Esteban Castro (Newcastle) was invited by the local team of [ENGOV](#) at the University of Santiago de Chile in Santiago. ENGOV is the short name for "Environmental Governance in Latin America and the Caribbean: Developing Frameworks for Sustainable and Equitable Natural Resource Use". DESAFIO already has links with ENGOV coordinators in Amsterdam, and we look forward to strengthen the relationship and exchanges.

Also in October 2013 we established a new link with the EU-funded project "[Sustainable Water Action Network](#)" (SWAN), dedicated to strengthen research links between researchers working on water issues in Europe and the United States.

OTHER LOCAL ACTIVITIES

Recife, Brazil

Alexandre Ramos and Hermelinda Ferreira from UFPE's team are developing a photographic composition with members of Mustardinha community, where 2 of DESAFIO's case studies are conducted, for the production of a photo soap opera. The team is seeking financial support among a variety of institutions such as Recife's municipality, the Regulatory Agency of Pernambuco (ARPE), the Urban Workers Union, the Sanitation Bureau and UFPE's Cinema Programme to support the development of this project.

DESAFIO'S PUBLICATIONS

DESAFIO started a series of working papers, which is part of the [WATERLAT Network's Working Papers](#), Project Series (ISSN: 2053-7417).

Our first Working Paper on "Innovations and challenges for the democratization of water and sanitation services. Synthesis of the First Conference" was published in October 2013. Rather than a single paper, this a dossier containing the full version of the discussions that took place at DESAFIO's First International Conference held in Recife in February 2013. [Click here](#) to download the document (in Portuguese).

We are now elaborating a second Working Paper on "Results of the dialogue on the condominium sanitation system in Recife, Brazil", which is based on the workshops and interviews carried out by our UFPE team in Recife (see page 5).

We also have our first book in the making: [Innovations and Challenges for the Democratization of Water and Sanitation Services](#), which will be a more elaborated version of the materials presented at DESAFIO's First International Conference held in Recife in February 2013 plus some invited chapters.

Visit our [web pages](#) for the latest news about our publications.



DESAFIO Newsletter



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