

Exploring the relationship between everyday risk and urban development in Chuquitanta



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Key Messages

- Everyday risk can be understood as a blend of social life settings of certain populations shaping poverty and insecurity compromising human development (Lavell, 2003). Key everyday risks found in Chuquitanta are related to wastewater and solid waste. These two cycles of waste are directly related to socioeconomic and health issues, which are exacerbated by urban pressures.
- Through a range of participatory and analytical methods the research team was able to identify how women, men and children were being negatively impacted by waste and wastewater, as well as their coping mechanisms.
- Although a legal framework exists in Peru to ensure adequate management of wastes, there seems to be a lack of enforcement of laws and regulations. This situation could be improved through short- and long-term strategies to revitalise Chuquitanta's environment and to strengthen social networks and build partnerships for change.
- Mapping the potential scope to confront risks is essential for future evaluation and to generate transformative change towards a better future.

Image 1. Wastewater treatment plant



Introduction

Chuquitanta, in the north of Lima, has experienced important changes over its 4,000 years of inhabited history. However, the most significant ones have occurred since the 1940s with Lima's expansion, which included both people from Lima and migrants from the Andean region. Economic activity has increased substantially, and today, the Chillón River and the basin's channels are severely polluted, due mainly to poor planning and a lack of enforcement of laws and regulations.

Key Findings

Wastewater

Industrial wastewater. Given the poor regulation and law enforcement on industries, the Chillón River is significantly polluted by industrial discharges. SEDAPAL, the water and sewerage service provider, has been unable to deal with the extensive volumes of wastewater produced by industrial activities.

Domestic wastewater. Due to limited sewerage services wastewater is also being disposed of in the environment, mostly into the irrigation channels, and then used to irrigate agricultural fields. There is further contamination of water bodies due to the use of pesticides.

Solid waste

Domestic. While a regular waste collection service was set up in 2015 it seems to be inadequate or insufficient, as some residents dispose their domestic waste into the river, channels, and vacant plots. Unfort-

Image 2. Solid waste



nately, while this is a coping mechanism to remove waste from the immediate household area, it becomes a source of pollution for the wider community and for the lower basin of the Chillón River.

Construction. Rapid urbanisation has produced significant amounts of waste material, some of which ends up dumped in open spaces and channels. Regulations are poorly enforced. Most of the construction material, however, comes from other areas within Lima North, primarily from Los Olivos. Waste dumping is an illegal practice often used to avoid the payment of landfill fees.

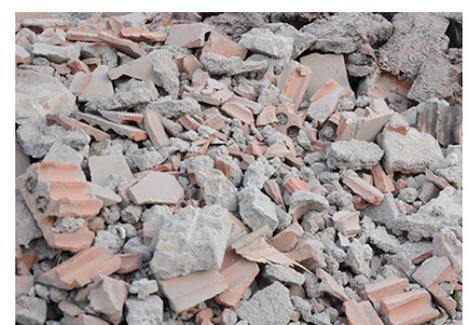
Socio-political dynamics

As a result of the current governance scheme, in which inclusion and participation of local communities in decision-making processes is for the most, absent, the needs of marginalised women, men and children in Chuquitanta aren't fully recognised by the municipality or by the central government.

Environmental education

Even though children and youth are generally familiarised with ideas around the environmental problematic and some adults of the community are aware of the most pressing pollution problems, there are no educational programmes or workshops to further inform them. Moreover, there seem to be no campaigns to raise environmental awareness or alert the population about the condition of water and the risks involved in using - and living by, water sources.

Image 3. Construction waste



Methodology and Process

While desk-based research, based in London, used only secondary sources, the second phase included several methodologies for primary research in the field.

Transect walks. The transect walk outlined (see map below) revealed key waste accumulation points and polluted water sites, as well as urban development issues in what is referred to as the *faja marginal*.

Interviews. Multiple interviews were conducted with different stakeholders. It became clear that, even though several community organisations exist in Chuquitanta, there is not much co-operation between them.

Focus groups. The first focus group revealed that the community suffers from problems related to waste and sewage, as well as from the loss of agricultural land. The second focus group found that local residents' vision for the future of Chuquitanta involves a connection to the waste management system and the municipal sewerage network, and a well maintained archaeological site.

Community participatory photography. The participatory 'everyday risks photography' documented large amounts of solid waste throughout Chuquitanta, as well as wastewater flowing through irrigation channels.

Map 1. Transect walk along irrigation channel



Image 4. Participatory photography



Risk coping mechanisms

Table 1

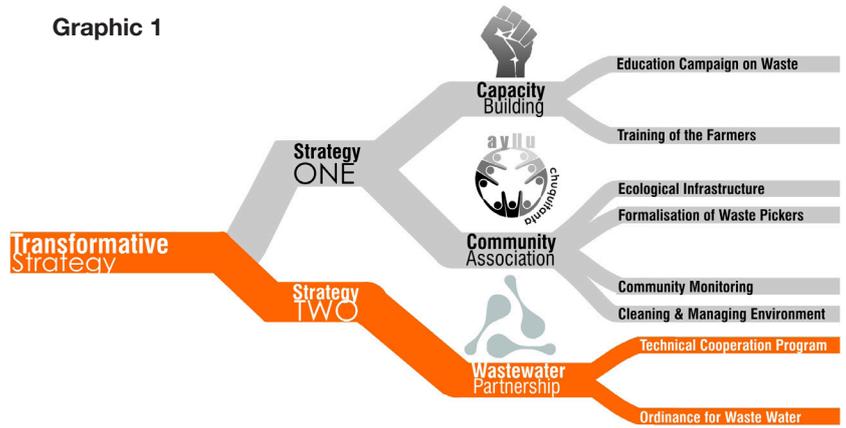
Risk Coping Mechanisms Related to Wastewater and Solid Waste	
Coping mechanisms adopted by local residents	<p>Wastewater-related mechanisms:</p> <ul style="list-style-type: none"> - Local residents purchase bottled water. - Local residents boil water for consumption. <p>Solid waste-related mechanisms:</p> <p>Households:</p> <ul style="list-style-type: none"> - Burn their domestic waste. - Place their domestic waste along the <i>fajas marginales</i> or in vacant spaces. - Pig farms feed animals with leftover food from local restaurants, and they bury their waste in the ground. - <i>Faenas</i> (community work): Local residents attempt to clean public areas from waste on a monthly basis. - Irrigation Committee: It runs cleaning campaigns of irrigation channels. - Informal waste collectors: Collect plastic, cardboard and cans from domestic waste and sell for a personal income. - Education campaigns: Some residents attempt to generate awareness on waste management amongst other residents.
Strategies Related to Wastewater and Solid Waste	
Strategies adopted by the state	<p>ANA (National Water Authority): Implemented a complaints system whereby citizens can report events that impact the environment.</p> <p>Ministry of Environment (Ministerio del Ambiente-MINAM): Implemented the national information service for environmental complaints in coordination with OEFA. Also created a Green Line in which citizens can raise a complaint, report or ask environmental questions.</p> <p>Metropolitan Municipality of Lima (MML): Its Integrated Development Plan (PDI) contemplates a park in the lower Chillón River basin to recover this degraded area and turn it into a public space.</p> <p>SEDAPAL: Implemented <i>AquaFono</i>, a 24-hour telephone line for complaints, enquiries and questions regarding water and sewage. SEDAPAL operates the 'Puente Piedra' wastewater treatment plant.</p>
Strategies adopted by the private sector	<p>Wastewater related strategies:</p> <ul style="list-style-type: none"> - Some industries send their untreated waste water to SEDAPAL's wastewater treatment plant. - Some industries discharge their effluents directly into irrigation channels. <p>Solid waste related strategies: Construction companies create illegal dump sites, and some dump their waste into pig farms who accept it as a way to expand their farms.</p>

State agencies, the private sector and residents that live and work in a risky environment in Chuquitanta are dealing with the risks in various ways. However the effectiveness of these current mechanisms is not always adequate. Some risks have existed for generations and people in Chuquitanta have to continuously adapt to their impacts. The main limitation of these informal risk coping mechanisms is that, with urban expansion, the amount of waste and wastewater is likely to increase, affecting more and more the health of residents and the local environment.

Transformative Strategies

Two strategies have been proposed. The first one follows a community-based approach towards capacity building and the creation of a community association. The second strategy involves the creation of a wastewater partnership. With the local knowledge and increased community awareness, these strategies will allow residents and authorities to prevent the accumulation of waste, the pollution of water resources and more importantly to work as a unit, to become “Ayllu Chuquitanta” (enlarged community) and preserve the area for its nature and history.

Graphic 1



The following tables illustrate in detail the components of each strategy, by explaining timeframes, actors, roles, responsibilities and aims of each activity. For instance, the first activity of the waste management education campaign is proposed to be carried out through a coordinated effort with *Ciudad Saludable* providing technical support; parents associations, local schools and *kapaq sumaq ayllu* who will encourage others to participate, implement cleaning actions and engaging in education; and the recyclers’ association which would be in charge of recycling and reusing processes in coordination with households. The desirable outcome of this component is an increased environmental awareness to reduce, reuse and recycle waste.

Table 2

Capacity Building				
What	Time Frame	Who (Actors)	Roles & Responsibilities	Outcomes
Waste management education campaign	Short Term	-Ciudad Saludable	-Technical Support	-Increased Environmental Awareness to Reduce, Reuse and Recycle Waste
		-Parents Associations -Local Schools -Kapaq Sumaq Ayllu -Recyclers Association	-Motivating people -Cleaning -Education -Recycling - Reusing	
Training of the Farmers	Long Term	-Agua Azul -Agrarian University -Irrigation Committee	-Technical support -Sharing knowledge	Increased knowledge and skills of farmers More profitability

Table 3

Community Association				
What	Time Frame	Who (Actors)	Roles & Responsibilities	Outcomes
Cleaning and Managing the Environment	Short Term	-SMP	-Specifying Dumping Points -Providing Waste Bins and Collecting Waste	-Integrated Waste Collection
		-Irrigation Committee	-Agricultural Areas and Irrigation Channels	-Cleaning Up
		-Community	-Responsible for Cleaning and maintaining their own Neighbourhood	
	Long Term	-Recyclers Association -Kapaq Sumaq Ayllu	-Recycling waste -Archaeological site	-Decontamination Process
Formalisation of Waste Pickers	Short Term	-SMP	-Registering Local Waste Pickers	-Making the waste collection system efficient
		-Ciudad Saludable -Recyclers Association	-Providing Information -Technical Support to SMP -Organising Groups of Waste Collectors	
Community Monitoring	Short Term	-SMP	-Responsible For Action	-Sanctioning Polluters
		-ANA -OEFA	-Maintain Communication with the Community	-Information Sharing
Ecological Infrastructure	Long Term	Ministry of Culture Andres Del Castillo Museum	-Preserving and Developing Archaeological Sites – El Paraiso, Chuquitanta Wall etc	Protecting and enhancing the different Landscapes Conservation of Local Identity Reduction of Natural Risks
		-Ministry of Environment -LIWa	-Protecting River Chillon and all the existing parks or open Spaces	
		-Universidad Nacional Agraria La Molina	-Technical Support -Planning	Environmental Recovery
		-Irrigation Committee	-Protecting Agricultural Areas	

Table 4

Wastewater Partnership				
What	Time Frame	Who (Actors)	Roles & Responsibilities	Outcomes
Technical Cooperation Program to Treat Industrial Waste Water	Short Term	-Mining Industries -Paper Industries -Mattress Industries	-Treat Wastewater before disposal efficient use of water	Protect River and Irrigation Channels Reduction of Risk Transparency, Accountability and Incentives Regain Trust in SMP
		-SMP	-Create Technical Cooperation Program	
	-Universidad Nacional Mayor de San Marcos or Other Peruvian University	-Provide Technical support and knowledge to Treat Waste Water		
Regulation for Industrial Waste Water	Long Term	-ANA -OEFA	-Monitor the whole process -Solicit sanctions for Polluters	-Help to stop river pollution gradually
	Short Term	-Metropolitan Municipality of Lima (MML)	-Build WasteWater Treatment Plants -Regulation establishing maximum date for treating Industrial Waste Water	

Map 2. A proposed integrated ecological infrastructure scheme

Conclusion

This policy brief aims to support the process of bringing the community together, alongside the municipality, universities, NGO's and private companies, to strengthen residents' political representation and advance towards a socio-environmental transformation for reducing risks, and helping to cope with the urban pressures that Chuquitanta, as many other peri-urban areas face. Through working with local residents and organisations this can create a stronger sense of engagement, ownership, and pride of their land, therefore creating a self-sustaining mechanism to tackle their risk related issues.

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Bibliography

- Allen, A., and Lambert, R. (2015), 'Co-Learning for Action: Exploring the Relationship between Everyday Risk and Urban Development in Lima', The Bartlett Development Planning Unit, UCL, Available online: https://www.bartlett.ucl.ac.uk/dpu/programmes/postgraduate/msc-environmentsustainable-development/in-practice/o-f/index/edit/ESD_STUDENTS_REPORT_2015.pdf
- Eisenberg, B., Nemcova, E., Poblet, R., and Stokman, A (2014), 'Lima Ecological Infrastructure Strategy: Integrated urban planning and design tools for a water-scarce city', ILPOE Universität Stuttgart, Available online: https://issuu.com/ilpe/docs/lima_ecological_infrastructure_stra_9c435aba38df2f/1
- Lavell, A., et. al. (2003). 'Local risk management: notions and precisions on concepts and practice, Coordination Centre for the Prevention of Natural Disasters in Central America (CEPRENAC), United Nations Development Program (PNUD).

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