
This item was submitted to [Loughborough's Research Repository](#) by the author.
Items in Figshare are protected by copyright, with all rights reserved, unless otherwise indicated.

A market-based approach to water challenges in peri-urban areas in Colombia

PLEASE CITE THE PUBLISHED VERSION

PUBLISHER

WEDC, Loughborough University

VERSION

VoR (Version of Record)

LICENCE

CC BY-NC-ND 4.0

REPOSITORY RECORD

Bouta, Harm. 2021. "A Market-based Approach to Water Challenges in Peri-urban Areas in Colombia".
Loughborough University. <https://hdl.handle.net/2134/16873279.v1>.

42nd WEDC International Conference

ONLINE: 13 – 15 September, 2021

EQUITABLE AND SUSTAINABLE WASH SERVICES:
FUTURE CHALLENGES IN A RAPIDLY CHANGING WORLD

A market-based approach to water challenges in peri-urban areas in Colombia

H.D. Bouta

Netherlands

REFERENCE NO. 3141

Water supply in peri-urban settlements in Colombia

In 2019, ZOA, a Dutch INGO, started a response to the increasing settlements in La Guajira, northeastern Colombia, linked to the Venezuelan crisis. Mixed groups of displaced Venezuelans, returning Colombians, bi-national ethnic groups and inhabitants of host communities congregate in newly formed peri-urban areas on the outskirts of Riohacha and Uribia (and many other places).

As almost all groundwater in the region is saline, drinking water is pumped centrally and treated in reverse osmosis plants. From these plants, drinking water is distributed through tanker trucks to the various settlements. For rural settlements this supply is often subsidized. The baseline survey showed a functioning water market, whereby prices were mainly dependent on the amount of water bought at once by a household. Water at the household level is either stored in jerrycans or bigger water storage tanks of 100/250/500 liters. The average water storage in Uribia is about 340 liters per household, while for Riohacha this is roughly half that with 180 liters per household. Overall, households spent a sizable amount of their irregular income on water purchases. Depending on the size of household storage and the size of water vendor's transport devices, the cost per litre highly fluctuates with differences up to 400% (table 1). Households with the least storage were thus paying an uneven amount per liter. ZOA intervened through the provision of water storage tanks in the area.

Table 1: Household expenses on drinking water in two peri-urban locations in Colombia

Transport from source	Volume water bought by household	Storage capacity at household	Cost/litre	Monthly expenses for 15 lcpd	% of monthly income of COP 200.000 / USD 54
Uribia					
Commercial trucks	1-10 m3	Concrete tanks of > 1 m3	COP 12	COP 24.000 / USD 6,45	12%
Commercial trucks	500 litres	Tanks of 500 litre of more	COP 24	COP 48.000 / USD 12,90	24%
Intermediate/small vendors	(multiples of) 20 litres	Jerrycans or small drums	COP 50	COP 100.000 / USD 27	50%
Riohacha					
Commercial trucks	500 litres	Tanks of 500 litre of more	COP 15	COP 30.000 / USD 8,06	15%
Small vendors (carts)	(multiples of) 20 litres	Jerrycans or small drums	COP 25	COP 50.000 / USD 13,50	25%

Challenges

While *access* to water of an improved source is very high for both settlements, with treated water often brought to the house, the *cost* of water are a major part of the household expenses. This is in line with worldwide observations, where the poorest often pay most for their water (of disputable quality at times) compared to households connected to a water network. The human rights to water and sanitation calls for universal and equitable access to safe and affordable drinking water for all. Affordability implies that payment for services should not present a barrier to access or prevent people from meeting other basic human needs. Many countries have set affordability thresholds for WASH expenditure as percentage of income varying between 2% – 6%. In both Riohacha and Uribia households are spending over 20% of their unstable income on water and still the majority of households have less than 15 litres per person per day.

Availability of water is mainly influenced by a lack of money and in some cases a lack of access for water trucks. The cost per litre water purchased is linked to the amount of water bought and to the transport method of this water. This is especially the case in Uribia where many households have 500 l storage tanks and pay in comparison less than when purchasing jerrycans. In Riohacha this distinction is less clear, as up to 500 litres water is still provided by small vendors with jerrycans and the prices only changes when a water truck can provide water in bulk.



Figure 1 Major and small-scale water

Impact of the project

To improve the water situation for the households, no extra water supply itself would be needed, and ZOA decided to work through the existing water market. It has been considered to provide cash/voucher-for-water, but this would not address the high expenses on water in the long-term. Bulk-purchase could bring down the price considerably and it was discussed with the community to construct a central storage tank for the area. This was not preferred though for the fear of conflict and the fact that no permanent constructions were allowed in the illegal settlement. (This has changed in 2020, as local authorities seem to be accepting centralized tanks in settlements). Instead, ZOA distributed water storage tanks of 500 litres, so households could buy water in bulk for a much lower price.

Lessons learned

- Access to safe and affordable water for households in peri-urban areas (of Colombia) is multi-faceted and thus needs to be addressed along multiple lines.
- Measures to address affordability and availability of water should preferably work in line with the water markets and could consider options as: Reducing the cost of water via subsidies to water trucks (as is the case for rural areas), cash or vouchers for water, or bulk purchase through households with increased water storage.
- Water markets consists of both *supply* and *demand* (which is partially dependent on storage capacity).
- Market assessments of water supply in peri-urban areas are valuable and recommended.

References

Emergency Market Mapping and Analysis Report: Water Market Moyale Town, August 2012, Oxfam GB.

WASH needs assessment Riohacha and Uribia, June 2019, ZOA.

Contact details

Mr Harm Bouta MSc is a WASH Advisor for ZOA International, with extensive international experience in Africa, Asia and Latin America.

Harm Bouta, MSc: Netherlands. Telephone: +31659460658 Email: h.bouta@zoa.ngo