

# **Local Development in Peri-urban and Rural Areas Based on Co-management for Small Water Suppliers in Colombia**

Andrea BERNAL\* and Luis RIVAS\*\*

Instituto Politécnico Nacional  
Escuela Superior de Administración  
México - 2010-2011

# Small-scale Water Supply in Colombia

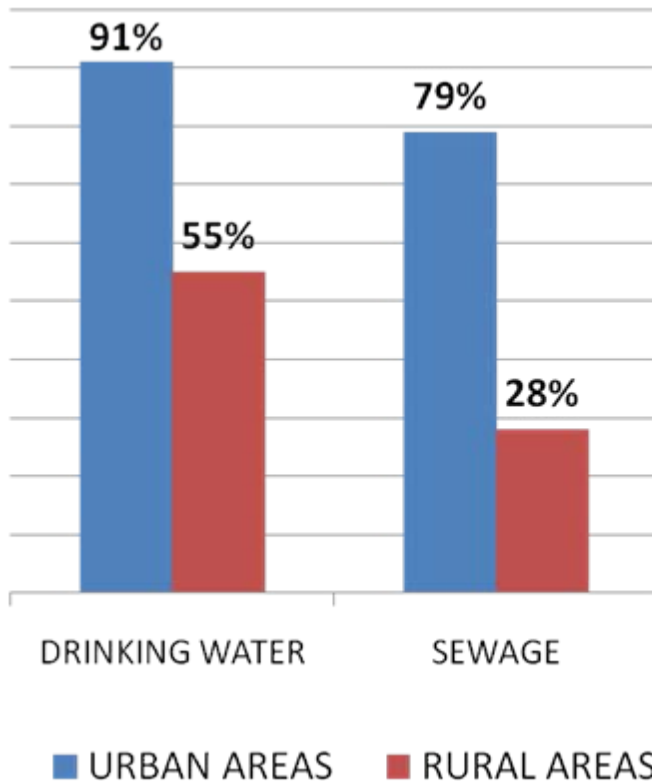


## Co-management: Community-based management with external support (World Bank -2010)



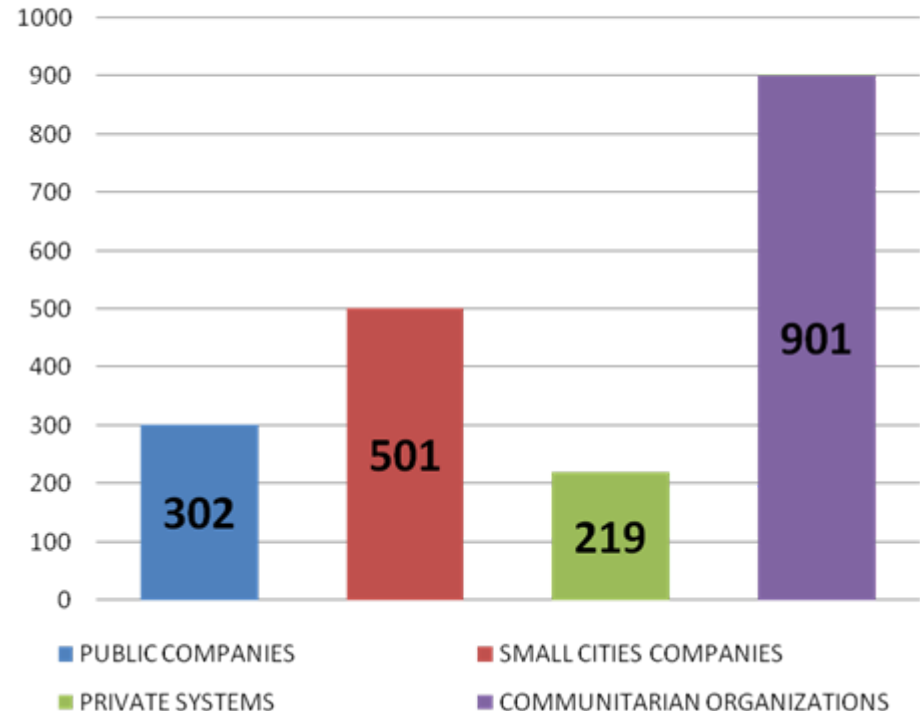
# Drinking Water and Sewage Supply in Colombia

## COVERAGE



Source: DANE - National Census 2005  
(Not including individual solutions, just tap water)

## NUMBER OF WATER PROVIDERS



Source: Sectorial Inform  
Providers officially registered  
SSPD (2011)

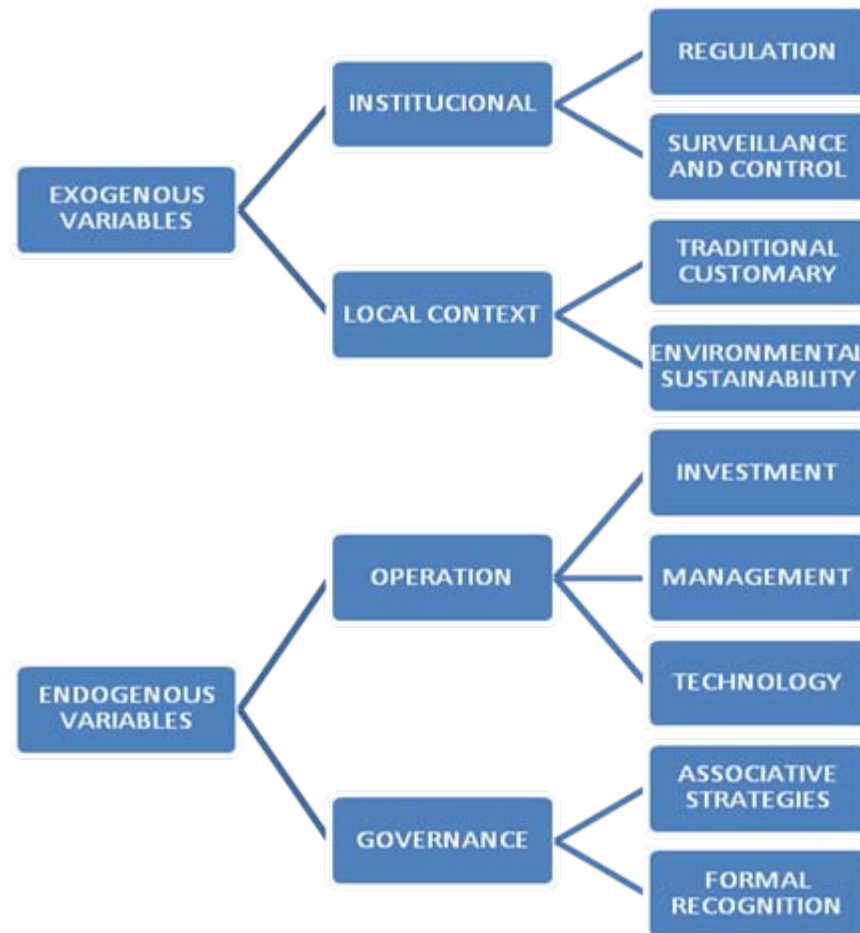
**! THERE ARE APROX. 12.000 COMMUNITIES  
PROVIDING WATER IN RURAL AREAS IN COLOMBIA!  
(National Sanitary Inventory, 2001)**

# Research: Communitarian Management Model for Small Scale Water Supplies

| Research Stage | Research advance   |
|----------------|--|
|                | State-of-the-art, (Ostrom – Max-Neef)<br>World Bank – ECLAC - WSP<br>Local works. (Quintana, Maya, Cadavid, Perez)   |
| First stage    | Initial model used to show the exogenous and endogenous variables of communitarian water management.<br>Small water supply characterization,                   |
| Second stage   | The variables will be detailed, formulating the indicators for each.   |
| Third stage    | Apply a survey or check list with three / five previously selected cases, with the purposed of validating the formulated variables                             |
| Fourth stage   | The variables will be included in a dynamic modeling software (f. ex. STELLA has been used successfully to describe complex environmental and social problems) |

# Research: Communitarian Management Model to Small Scale Water Supplies

Communitarian management model for drinking water and sewage

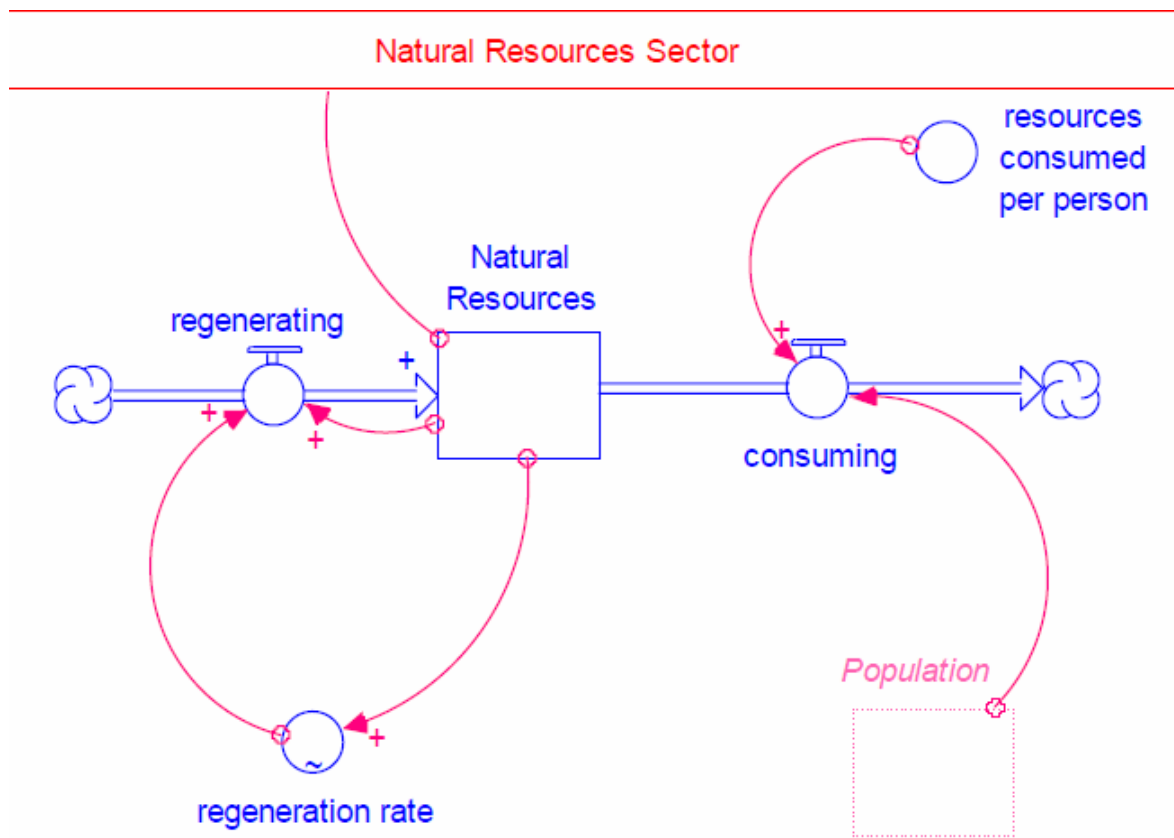


# Small water suppliers characterization - Colombia

| <i>Regulation:</i>                      | There is no special law to regulate small water supplies. Developing a special public policy  |
|---|---|
| <i>Surveillance and control:</i>        | The available information is based on a software application. The public agency for surveillance and control of the household public services – SSPD, they control water quality and customer claims  |
| <i>Traditional customary practices:</i> | Usually, the authorities impose water and sewage solutions but they do not consider the local traditions  |
| <i>Environmental sustainability:</i>    | There are some isolated initiatives to protect river basins   |
| <i>Investment:</i>                      | Public policies increased coverage in cities and small towns, its desired to promote investment on rural household.   |
| <i>Technology:</i>                      | Frequently, it is inadequate to community needs and preferences. Some systems are abandoned. Some rural people do not have tap water, because the use of alternative drinking water solutions have not been expanded. There are water supplies with no clarification and/or disinfection, and with deficient treatment too. A few laboratories to control water quality provided. |
| <i>Management:</i>                      | Deficient organization and qualification of small scale operators - minimum technical and administrative capacities   |
| <i>Formal Recognition:</i>              | Informal organization schemes. They have difficulties to collect and keep documents and data, to celebrate formal contracts or to assume the defense of their rights by themselves. The state does not help them to structure their communitarian solutions, and to formalize their legal requirements are difficult and expensive.   |
| <i>Associative Estrategy:</i>           | In Colombia there are some groups of water suppliers, (f. ex. -AQUACOL, FACORIS, ACUA) – that depends exclusively on private initiative.  |

# Research: Communitarian Management Model to Small Scale Water Supplies

STELLA used to modeling natural resources management



Source: Modeling Building & Simulation Tutorials  
In: [www.iseesystems.com](http://www.iseesystems.com)



# Primary conclusions

- Public policies and legal framework are essential to formulate a communitarian management model
- Well-managed water systems enforces social networks, improves the quality of life and finally, promotes local development. Local arrangements to provide water can be used to organize other communitarian activities.
- Co-management its not only a hierarchical relationship between the state and the communities. It involves linkages with other communities and second-level associations.



# Some goals reached by Small Water Suppliers in Colombia

## Acueducto Mundo Nuevo PEREIRA



**Land- prices  
have risen**



**Water quality is  
well-known**



**Savings and loan  
local bank**



**Excellent relationship  
with local  
government**

## Corporacion Acueducto ALTAVISTA MEDELLIN