

SWITCH PROJECT: CALI, COLOMBIA

<http://switchcali.wordpress.com>



CALI LEARNING ALLIANCE



Cali's involvement in SWITCH began as a study case. In 2007 however it initiated three Learning Alliances (LAs) to stimulate teamwork to contribute in the search of sustainable solutions for the city's water management. Based on the encouraging results of these learning alliances Cali becomes a demonstration city in 2008.

The three LAs are formed around three main problems identified by staff from the main organizations involved in water management in Cali:

1. The quality of the Cauca River water and its impact on the water supply system of Cali.
2. The drainage system for the south of the city of Cali.
3. The possibility to include innovative approaches in the planned expansion area in the south of Cali.

The LAs are facilitated by Cinara Institute of Valle University, with the support of IRC and UNESCO-IHE. Different types of organizations are involved including regional and local environmental authorities, public service companies, local and regional government agencies, foundations, NGO, universities.



LA Members

These are some members of Learning Alliance:

- Asociación Colombiana de Ingeniería Sanitaria y Ambiental – ACODAL
- Caja de Compensación Familiar del Valle del Cauca – COMFANDI
- Corporación Autónoma Regional del Valle del Cauca – CVC
- Departamento Administrativo de Gestión del Medio Ambiente – DAGMA
- Departamento Administrativo de Planeación Municipal - Municipio de Cali
- Empresa de Servicios Públicos de Aseo de Cali – EMSIRVA
- Empresas Municipales de Cali – EMCALI IECE ESP
- Fundación Río Cauca
- Gobernación del Valle del Cauca
- Independent professionals
- Instituto de Hidrología, Meteorología y Estudios Ambientales – IDEAM
- Juntas de Acción Local
- Peña & Asociados
- Pontificia Universidad Javeriana
- Unidad Municipal de Asistencia Técnica Agropecuaria UMATA - Municipio de Cali
- Universidad Autónoma de Occidente
- Universidad del Valle - (Instituto Cinara, Eidenar, Escuela de Salud Pública)
- Universidad Nacional de Palmira

VISIONS & GOALS FOR URBAN WATER MANAGEMENT

Each of the LAs established a vision for the year 2040:

1. The drainage system for the south of Cali will meet the environmental requirements and will fit well into the landscape. No flooding will occur and the water quality is such that it can be used as source for drinking water.
2. The Cauca River permanently complies with the requirements to be used as a source for drinking water in terms of quality and quantity.
3. The expansion area of south of Cali has public services (water, sanitation, drainage) that are environmentally sustainable do not cause flooding and are in harmony with the landscape, showing respect for natural zones and lake areas.

MEASURING SUSTAINABILITY

The main factors identified by the LAs to achieve the visions concerning Urban Water Management in Cali, include:

- Wastewater pollution control
- Inter-institutional collaboration (with leadership)
- Efficient and transparent use of resources
- Use of innovative technologies
- Integrated urban planning
- Involvement of local actors and users

For each of these factors indicators are being developed to follow the sustainability of interventions.

CALI'S WATER SYSTEMS & PRESSURES

- Cali has seven rivers: Cauca, Cali, Pance, Aguacatal, Lili, Meléndez y Cañaveralejo. All rivers present progressive quality deterioration due to negative interventions in the river basin (deforestation, illegal settlements, discharge of wastewater etc.)
- The deterioration of the quality of the Cauca river, the main source for Cali's water supply, is threatening the safe provision of water. Increasingly the quality surpasses the existing treatment capacity of the water treatment plant in Puerto Mallarino leading 36 interruptions during 2007.
- The two most important sources of contamination are located some 5 Km upstream of the water intake of the treatment plant in Puerto Mallarino. These sources are the drainage channel for the South of Cali which is also receiving wastewater and the seepage from the very large Navarro waste disposal site.
- The increase in contamination of Cauca river is leading to higher operation and treatment requirements and higher cost. This and the increased frequency of closing the water intake has become a major concern for the environmental authorities, the water supply company (EMCALI) and the community.
- An overall urbanization plan for the expansion area in south of Cali is lacking with the exception of a feasibility assessment of water supply provision and waste water disposal. The development is mostly left to urbanization companies and individuals who do not consider integrated water resource management for this area which is influenced by three rivers: Lili, Pance and Cauca, each facing gradual degradation in quality and increased flooding.

Issues & Challenges

The main challenges include:

- Control of water source pollution including control of waste water discharge in the drainage system of the south of Cali and seepage from the waste dump some 5 km upstream of the main water intake for 77% of Cali's population, posing an increasing health risk for the users.
- Introduction of Integrated Water Resources Management and Urban Planning for the urban expansion area in the south of Cali, which offers great opportunities for innovative approaches and technologies
- Structural improvement of institutional collaboration and transparent use of available resources



FACTS & FIGURES

- The urban area of Cali consists of 22 districts ("comunas")
- Cali has a total population of 2'075.380 inhabitants, from which 979.530 are male and 1'095.850 are female (Census, 2005)
- Growth Rate: 1,37%
- The current drinking water coverage in Cali is 97% and the coverage of the sewerage system is 94,8%.

DEMONSTRATION

Strengthening of inter-institutional collaboration

The development of the learning alliances is increasing the inter-institutional collaboration of different organizations involved in water resources management. It stimulates dialogue and exchange of information and experience showing several overlaps of activities and therewith the need for good collaboration.

Centinela Project

This project has as objective the development of a system of early warning and strategies of control in real-time that help to mitigate the effect of short peaks (six to eight hours) in water quality deterioration of the Cauca River in the operation of the water treatment plant in Puerto Mallarino. This project is financed by EMCALI and Valle University and counts with participation of other members of the learning alliances including CVC, CRC and DAGMA.

Integrated water use at Valle University. A development and demonstration Project.

The intention of this project is develop and demonstrate an innovative approach to managing the water supply, sanitation and drainage system in the university in a more integrated way. The shared interest is to really demonstrate that much more efficient water use can be established at the university. The program will be led by the Water Group from CINARA in close collaboration with the Group dealing with Integrated Water Management and the group dealing with Communication, Education and Information. This group will closely work with the Planning Bureau and the Construction Group of the university.



POTENTIAL FUTURE SCENARIOS

Members of the Alliances have proposed different scenarios to achieve the proposed visions in 2040:

The pollution of the water bodies affecting or being affected by Cali will have reduced through implementation of innovative technologies, integrated management of water basins and efficient and transparent use of resources.

The potential risk for the health of population supplied by Cauca River will diminish on having improved the control of pollution caused by the drainage system in the south of Cali.

Concepts of Integrated Water Management will have been integrated in Urban Planning and Management.

Clear strategies of inter-institutional collaboration will have been established with proper leadership.

RESEARCH FOCUS AREAS

- Wastewater pollution control
- Efficient water use
- Modeling water quality
- Early warning
- Governance and institutional change

