

## EKOMURO H2O+ Collecting rainwater in schools and urban poverty regions

by RICARDO ALBA ALDANA / 2017-06-15 16:57:37 / Internacional / 13207 / EN



**Year of commitment :** 2010

**Water cycle :** Rain water

**Circular economy and waste management :** Eco-Design, Reuse



**3 000 €**

### Builder

Arq. RICARDO ALBA ALDANA

### Manager / Dealer

FAMILY GROUP EKOMURO H2O+ Manager Arq.  
Ricardo Alba Aldana

## GENERAL INFORMATION

The basic needs of urban settlements on the outskirts of our cities, with characteristics of territoriality as "urban government housing projects", manifest it in a more relevant way by lack of water service.

In this context and based on appropriate technology and environmental education from the reuse of three-liters Pet container and with a simple, innovative proposal and with a culture reference in communities, the Ekomuro h2o + project aims to create a change of attitude on harvesting rainwater as a strategic natural resource for urban sustainability, risk reduction and building capacity of resilience, which will result in vulnerabilities reduction and will constitute a mechanism of adaptation to climate change and water conservation.

It is common in our rural areas that homes have a system for rain water storing, however, in our urban space limitations make it necessary to propose a system of "vertical water tank" that fulfills this function. The Ekomuro is made by self and is designed in a modular way, taking up minimal space, made of nine towers of six three-litter bottles each, connected to a PVC base. The project begins at public schools as a teaching proposal on the proper use of solid waste and the use of a natural resource.

### ESTABLISHMENT OF PRIORITIES

The project, from its beginning, had an educational basis of awareness on the use of natural resources and good use of solid waste, based on that, it generated a change of attitude in students and the community in general on good environmental practices.

- Improvement in people's quality of life, that manifested in eco-efficient water saving and in make the most of the space.

- The pilot project in areas of urban poverty will be a reference to be officially promoted and included in urban policy and educational programs.
- Community acceptability on the environmental, economic and sustainable development benefits.
- Arouse interest in the community to implement the project in their respective houses by themselves, taken as reference the already installed systems.
- Individual and collective satisfaction of their contribution to good Environmental practices by population.
- The implementation of Ekomuros Rainwater Purifiers will generate a valid and eco-efficient option to be replicated at local and regional level.

Fundamental Objectives: Encourage, promote and strengthen good environmental and social practices from the implementation of Ekomuro h2o + collecting rainwater systems in communities with characteristics of "human settlements in urban areas of poverty," improving its resilience and vulnerability.

#### Strategies:

- Promote the community integration around an innovative environmental initiative with inclusive and participatory characteristics that contribute to sustainable development.
- Improve the conditions of house space of the beneficiaries, replacing conventional containers.
- Train community members in the proper development and implementation of Ekomuros, to see in it an income option to their families.
- Institutionalize environmental initiative in schools so the community, from there, appreciates their economic, environmental and social successes, taking them as an example to replicate it in their homes.
- Facilitate knowledge transfer from appropriate technology energetically eco-efficient and considered essential for adaptation to climate change.

## Progress Status

In progress

## Data Reliability

Self-declared

## Funding Type

Private

## Website Enterprise / Infrastructure

<http://ekomuroh2o.wix.com/ecoh2o>

<http://ekomuroh2o.wixsite.com/ecoh2o/ekoshower-h2o>

## Sustainable Development

**Attractiveness :** Rain harvesting has been an age-old activity, practiced by many cultures in areas of poverty and wealth, but unfortunately our urban communities discard using it due to ignorance and lack of education. The challenge is to change the lackadaisical attitude of the state agencies responsible for environmental policy to make population being part of water saving, reduction of vulnerability and adaptation to climate change with rainwater harvesting. In our urban space limitations make it necessary to propose a system of "vertical water tank" that fulfills this function. The Ekomuro Innovative project is based on the appropriate technology and the circular economy, made by self and is designed in a modular way, taking up minimal space, made of nine towers of six three-liter bottles each, connected to a PVC base.

**Well Being :** Participation in national forums and fairs by children members of school environmental committees, allowed cultural interaction with other regions around scientific-technological problems related to water and recycling. Concepts related to recycling and reuse of waste, adaptation to Climate Change, Global Warming, rain harvesting, Alternative Energies, resilience and vulnerability were clarified; terms that generated in them a positive view of the use of natural resources.

In peri-urban communities is possible, in the field of social responsibility, access to environmentally innovative initiatives in communities of urban poverty areas and find out that they are willing to accept them in order to improve their vulnerability condition, when we consider them as participant actors in behavioral urban changes, transforming social realities and improving their quality of life.

It is possible to create strategic alliances with public entities, NGOs and the private sector to generate economic resources to implement and spread an innovative project aimed at changing traditional water storage systems and complement environmental education in schools in a dynamic, sustainably and efficient way as of Ekomuros collecting rainwater systems.

It is possible, thanks to the internet, establish technological knowledge transfer links to, environmental initiative Ekomuros, internationally transcends and replicates in other countries with a focus on Climate Change Adaptation, or educational purposes related to environmental education and good practices.

**Social Cohesion :** Social inclusion occurs when we value people who works at recycling and improve the environment. The project reuses pet bottles that these people recover on the street and acquired at fair value, dignifying their work. With these parameters, families' income is generated in some sectors of the comuna where that activity develops. On the other hand collected rainwater is reflected in a lower cost in terms of consumption, creates bond between the community around the use of a natural resource with an individual and collective sense of environmental stewardship. At an early stage and considering the vulnerability of the community, it was necessary to subsidize part of the supplies and logistics to implement the first phase of the project aspects, however beneficiaries, grounded in appropriate technology, contribute their labor in the implementation of the Ekomuro support basis, making rain water canals, collecting three-liters pet bottles and with a simple and practical training they assemble the containers, to end up the system self-building.

#### Preservation / Environmental Improvement :

**Resilience :** The involvement of the community in the recovery of pet bottles and the Ekomuros development in housing of peri-urban communities, has generated a sense of opportunities in their inhabitants, whom in their capacity of resilience, have improve their state of vulnerability and possible storage of water during periods of drought. Product of this is that the neighbors, observing the Ekomuros, wish to be included as project beneficiaries.

Improving the living conditions of the inhabitants of the resilient communities, which is manifested in the eco-efficient water saving and the use of space that previously had intended to plastic containers to store water, ten families with participation of single mothers and children were benefited. Forty families registered sensitized on the scope and purpose of the project will benefit with the budget granted by Pepsico Latin America.

**Responsible use of resources :** With the inclusion of Ekomuros harvesting rainwater systems in schools and homes, plus a sustainable planning regulations in the care and preservation of water, would result in benefit to a greater number of communities that do not have access to a minimum living. The dissemination of the project in schools and homes enabled educational communities to prove the effectiveness that generates harvest rainwater in cleaning floors, toilets and watering gardens. The enthusiasm of the interdisciplinary participation of students, teachers and parents in the implementation of the project happens if we demonstrate in a practical way their effectiveness, sustainability and environmental benefits.

Regarding solid waste, and the importance that schools devote to the subject of recycling, the ekomuros implementation with awareness workshops allowed students to differentiate between the concepts of recycling and reuse, with emphasis on PET bottles. Worldwide large volumes of this material occur, which use large amounts of oil, a valuable and non-renewable source and eventually end up on items that are not beneficial to the environment. Its reuse would not generate any pollution and constitute a valuable contribution to the reduction of this type of waste.

## Testimony / Feedback

*The implementation process of ekomuros in public schools and urban housing, made possible its publication on the Internet. The awards and national and international prizes corroborated the scope and targets of the project, helped to generate sufficient credibility of their environmental and educational achievements in individuals and entities that wanted to replicate the initiative in their respective regions. Ekomuro h2o + is totally innovative, it tends to generate an environmental improvement, since it brings together concepts of recycling and water harvesting culture. The local and international achievements in four years of project development, constitute the "credentials" to be recognized as an environmentally sustainable alternative: finalists on Google Science Fair 2012, Nomination on Science In Action by Scientific American, Winners on Eco-Challenge Pepsico-OAS, Finalists on Bayer Young Environmental Envoy; candidates for 'Water for Life' UN-Water Best Practices Award 2014., Finalist Best Practice of the World, ONU Habitat/ Dubai Municipality 2014. Finalist award Resourse Wiss Re Foundation 2014, The Best world Water Program 7th World Water Forum Korea 2015. Finalist Winner National Ecology Award "Blue Planet" Colombia 2017. The project is published in more of 30 portals specialized in environmental issues in different countries of the world in languages such as Russian English, Romanian, Bioloruso, Italian, Korean and Spanish and Circular economy in Asia.*

<http://www.miamiherald.com/news/nation-world/world/americas/colombia/article20823174.html>

## Governance

EKOMURO H2O+ COLLECTING RAINWATER IN SCHOOLS AND POVERTY REGIONS

**Holder Type :** Private Company

Arq. RICARDO ALBA ALDANA

**Builder Type :** Natural Ressources Manager

FAMILY GROUP EKOMURO H2O+ Manager Arq. Ricardo Alba Aldana

**Manager / Dealer Type :** Private

Social responsibility, defined as "strengthening social responsibility by promoting principles of equality, cooperation, sustainability and respect for the environment", consistent with the lines of "Transforming campus to develop a model of social integration" and "Interacting with the surrounding community". In this context the project has generated strategic alliances with public and private entities, highlighting the participation of students and the community in general. The implementation of the project in 30 colleges of the country and the region and also the linkage of 15 companies from the private sector, and 10 organizations and foundations such as Rotary International, Cruz roja Colombiana, are examples of the universality of the project that we intend to give to the project.

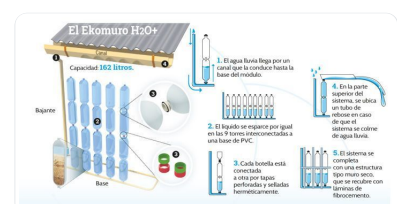
**Business Model :** Educational Institutions, such as Colleges, Universities and Kindergartens, a segment where synergies between students, teachers and parents come together, will favor the specific purpose and objective of the Ekomuro project on environmental education and awareness of water saving . This will be a determining factor for the educational community to show its environmental benefits and reach, opting to implement it in their homes. (Eg Professor Isabel Rey Barrio castilla Bogotá). The context of universality of the Ekomuros proposal is aimed at the users of urban housing, who will constitute our potential customers, since it is the segment to which direct and tangible benefit is directed, represented in the economic saving by the decrease of water consumption. Customers with a sustainable vision will be proud and satisfied to contribute to an environmental initiative with social focus, so that other families can access the vital minimum. (Eg. Salome Gómez housing the Usaqué forest). The Institutional segment made up of the Ministries of Environment and sustainable development, with socio-environmental policies oriented to sustainable housing, the Ministry of Education, setting Environmental Education standards on water governance and innovation in their savings. The National Police in its areas of Social Welfare and Incorporation Direction, with Environmental and Social Management approach implementing the Ekomuros at territorial level. The multinational Pepsico with its interest in promoting a pilot project. NGOs and Foundations that benefit vulnerable communities with the Ekomuros system, guaranteeing the vital minimum. Within their social and environmental programs.

## Sustainable Solutions

EKOMURO H2O+ COLLECTING RAINWATER in schools and poverty regions

**Description :** With a minimalist space approach to use rain water collectors, we are aware of the persistent efforts of trying to consolidate our innovative environmental initiative, as an alternative for urban risks prevention. Rain Harvesting has been an age-old activity, practiced by many cultures in areas of poverty and wealth, but unfortunately our urban communities discard using it due to ignorance and lack of education. The challenge is to change the lackadaisical attitude of the state agencies responsible for environmental policy to make population being part of water saving, reduction of vulnerability and adaptation to climate change with rainwater harvesting.

- o Circular economy
- o Infrastructure



- Water management
- Climate adaptation
- Low-carbon materials/ infrastructure

<http://www.miamiherald.com/news/nation-world/world/americas/colombia/article20823174.html>

<http://www.conquito.org.ec/wp-content/uploads/2016/11/6-%C2%A6-Cat-%C3%ADlogo-Iberoamericano-y-Caribe-QUITO.pdf>

Company (es) Website :

Company (es) Website :

Company (es) Website :

#### Visit of the Ambassador of India in Colombia

**Description :** Picture of the visit from the Ambassador of India in Colombia Mr. Prabhat Kumar to our home with the purpose of knowing the Ekomuro project and expressing its intention to replicate it in his country.

- Circular economy
- Infrastructure
- Water management
- Climate adaptation
- Low-carbon materials/ infrastructure



#### Ekomuro h2o + battery of baths in containers for temporary works

**Description :** The ekomuro system is integrated into the container in the back, supported by a metal support, rain water is purified through two filters and is used in the toilet of the toilets.

- Circular economy
- Infrastructure
- Water management
- Climate adaptation
- Low-carbon materials/ infrastructure



## Contest

### Reasons for participating in the competition(s)

#### Building candidate in the category



Users' Choice



Sustainable Infrastructure Grand Prize

