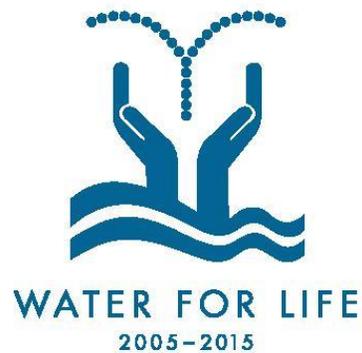


**“WATER FOR LIFE”  
BEST PRACTICES AWARD**



**Nomination of Isla Urbana for  
Best Practices in Urban Water  
Management**

## **10. Milestones**

December 17, 2009: First 7 experimental rainwater harvesting systems installed

January 2010: Appropriate rainwater harvesting system design established

March 2010: Municipal government offers funding for 600 rainwater harvesting systems

July 2010: First plumber training course for local plumbers

August 2010: Installation of 600 rainwater harvesting system commences

## **11. Narrative**

### **• Situation before the initiative began.**

As a mega-city with 22 million residents in a valley at an elevation of 2,200 m, Mexico City is all too familiar with water scarcity. Mexico City's water supply comes from three sources, all of which are being greatly over-exploited and require exorbitant amounts of energy to transport water to and around the city. Meanwhile, precipitation rates are high, causing floods and requiring more fossil fuels to pump storm water out of the bowl-shaped city.

36% of families in Mexico City do not have adequate access to water. Unfortunately, those families with the lowest incomes are often those with the least access to water, obligating them to spend up to 20% of their incomes to buy trucked water. Fortunately, most houses in Mexico City have cisterns and pumps. These circumstances led to the development of Isla Urbana, which is devoted to making rainwater harvesting an integral part of the water management system in Mexico City.

### **• Priorities**

Our Mexican-American team of engineers, designers, and sociologists have integrated community participation in every stage of our development. Through community meetings and discussion with individual beneficiaries, community leaders, and allied NGO's, we established Isla Urbana's main priorities.

- Design an effective, efficient, and low-cost RWH system that uses existing infrastructure and is easy to use and maintain, ensuring the widespread adoption of the technology.
- Develop a process for large scale implementation, which includes empowering local residents through skills acquisition, educational programs, job creation, supporting local businesses, and shifting responsibility of water distribution from a centralized system to individuals.
- Collaborate with large and small private and public organizations. We form alliances with local individuals, community groups, other NGOs, governmental institutions, and private institutions.
- Be a force for change in regulations regarding rainwater harvesting in Mexico.

### **• Target**

Isla Urbana focuses its efforts in marginalized urban communities with low income levels which are suffering through water scarcity issues. We provide skills acquisition and employment to members of these communities, who are often otherwise underemployed. We also provide educational opportunities to children and adults.

### • Objectives and strategies

Based on community needs assessments, our objectives have been developed by our team of directors, community members, allied NGOs, and advisors. Isla Urbana is dedicated to catalyzing a rainwater harvesting revolution. Our team's primary objective is to prove to policy makers that harvesting rainwater on individual buildings is a viable solution to urban water management issues. We combat water scarcity, flooding, and environmental degradation.

Isla Urbana is empowering individuals and local community groups and leaders to take an active role in their water management and supply through the adoption of rainwater harvesting systems. En route to accomplish these goals, we strive to positively impact as many people as possible through job creation, skills acquisition, supporting local businesses and providing educational opportunities. With a collaborative effort on a community level we will form a sustainable, urban, water-management system.

### • Mobilisation of resources

Isla Urbana is sustained through various sources of funding combined with volunteer work. Initially, Isla Urbana was sustained solely by the directors' donations of money and time; these same founders are the technical, social, and managerial experts. The four directors of Isla Urbana are also founders of a start-up rainwater harvesting business, which installs RWH systems for those who can afford it; a portion of these profits go directly to sustain the non-profit. Many members of our community support our project through donations of materials and labor.

As a project of IRRI, Isla Urbana offers courses on rainwater harvesting to the general public for a fee. With these funds, IRRI manages our accounting and provides other managerial assistance. Additionally, we have been the recipients of funding from the municipal government of Tlalpan, Mexico City, el Instituto Nacional de Desarrollo Social, el Instituto Mexicano de la Juventud, and Pase Usted Genera Project. Our alliances with other NGOs have helped us gain funding for joint projects, such as our recent work with the Huichol Indians. Isla Urbana has also formed a 501c3 in the United States, for which we have a volunteer staff, to be able to accept international donations and funding.

In 2010, Isla Urbana was a finalist of the BBC World Challenge, which helped our initiative gain widespread support. Two PR firms, one in the US and one in Mexico, have volunteered to assist with fundraising campaigns and publicity.

### • Implementation

The first step of our initiative was to design an effective and low-cost RWH system that was easy to install, use, and maintain, ensuring the widespread adoption of the technology. We began our design process by installing seven differing designs in seven houses in Ajusco Medio. Tests run on these systems and feedback from the beneficiaries formed our database from which we defined the design components that were the most effective at producing high quality water while being readily adopted.

One of the major difficulties that we have been combating is community distrust in the quality of rainwater. Because of the high levels of air pollution in Mexico City, many people think of rainwater as being "dirty." Thus, after conceiving our design we initiated community events for children and adults to educate people on the use and benefits of rainwater harvesting, including hosting Mexico City's only World Water Day event in 2010. These events were made possible through significant assistance from community members, local businesses, and beneficiaries. We also hosted tours of active rainwater harvesting systems where people could see the systems being used. Through the aid of a partner project

on biogas, we have developed a water quality testing lab where we are commencing large scale experimentation to be published in scientific journals, and we offer water analysis services to beneficiaries of our systems.

To ensure the sustainability and replicability of our project, we have constructed an implementation strategy. A large part of our initiative is dedicated to educating the beneficiaries on the use and maintenance of their system. Developing an educational program was difficult in an area where illiteracy and low levels of education are common; however, with feedback from plumbers, beneficiaries, and other community members, we developed an illustrated guide and explication method that has proved effective. We also developed effective training courses for plumbers and the general public, which utilize theoretical and practical approaches to thoroughly explain all important aspects of installing and using rainwater harvesting systems.

In pursuit of a sustainable source of funding, we have learned the importance of applying for financial support from a variety of sources. Recently, the municipal government of Tlalpan approached us to offer funding for 600 installations; however, because their primary concern is the physical installation, they are only partially funding the capacity building aspects associated with our approach. Because capacity building is integral to our mission, Isla Urbana will be using other funds and working closely with the community to ensure that our goal of fully capacitating every beneficiary is met.

#### • **Results achieved**

Isla Urbana has helped 1,517 people in the marginalized region of Ajusco Medio in Mexico City through the installation of 177 rainwater harvesting systems; these systems have already collected 3,040,625 liters of water. We have trained 12 plumbers to be RWH technicians, and provided them with jobs. We have developed and tested effective educational programs and materials to ensure that all beneficiaries understand how to use and maintain the systems. We have 450 families on our waiting list, and in several months they will be receiving RWH systems as well.

Isla Urbana conducts both qualitative and quantitative research on every household for which we install a rainwater harvesting system. We conduct a pre and post-construction interview with each family and an analysis of the demographics and dynamics of each household. With this information, we calculate how many people we are helping, how much money the families are saving, and how much water is being collected. We are in the process of calculating the fossil fuels saved through the use of our systems, as they eliminate the need for tanker trucks or pumping stations. Additionally, through these interviews we obtain feedback on the level of cultural acceptance, degree of participation, and how to improve our initiative.

#### • **Sustainability**

Mexico City's water supply comes from three sources: the Aquifer of the Valley of Mexico (70%), the Cutzamala Reservoir System (21%), and the Lerma-Balsas hydrologic basin (9%). The aquifer is being extracted at three times the rate of recharge causing significant subsidence of the city resulting in infrastructure damage and a deepening of the city center into a bowl prone to flooding. In order to divert the water from the Cutzamala System into the city, it must be pumped a distance of 127 km and to a height of 1200m; the amount of energy used to operate this system is equivalent to the amount of energy consumed by a city of 8 million people (e.g. London, UK). Extraction from the Lerma-Balsas system has caused many farms and villages to lose their water supply, resulting in social and inter-boundary conflicts. While coping with these water supply issues, Mexico City suffers through large flooding

episodes; this stormwater must be pumped out of the city which requires the consumption of additional fossil fuels. Within the city, water is often transported in tanker trucks to fill cisterns in homes. These cisterns are primary components necessary for collecting rainwater; because they already exist as part of the normal Mexico City infrastructure, harvesting rainwater is a remarkably appropriate solution to this critical multidimensional water challenge.

As families in Mexico City are accustomed to using a cistern with a pump to administer water into their houses, our RWH systems are easily adopted by most families. Isla Urbana's RWH systems have a payback period of only four years on average, not taking into account the financial assistance that we usually provide for beneficiaries. We have developed a method of implementation that uses local personnel and materials and focuses on educational and social service components, which helps ensure social acceptance and promotes best use of the systems.

#### • **Lessons learned**

We learned early on that the physical installation of a rainwater harvesting system is only half of what is needed to make the system fully functional. The other half of the job is working closely with the families and community to achieve buy in and to ensure they understand how the system works and what maintenance is necessary. We have developed a comprehensive illustrated maintenance guide and thoroughly explain the systems to residents during installations. We are continuing to develop educative materials including instructional videos and do-it-yourself manuals.

We have always emphasized the importance of co-participation, but during our first round of installations funded by the municipal government, we learned that families are reluctant to contribute to the project when it is government funded. By working closely with community leaders and the recipients, we have been able to combat this problem, and most families are proud to participate in our initiative to secure their family's water future.

Through our negotiation process with the municipal government, we have learned the importance of dealing only in contracts. Our allied NGOs are advising us on the negotiation process.

#### • **Replicability**

In the near future, we plan to expand Isla Urbana to other marginalized regions of Mexico City. To do so, we will form a team of managers who, in coordination with our original directors, we will train local plumbers that will be capable of all the tasks associated with physical installation procedures and resident education. Since all materials for the installations of the rainwater harvesting systems are available in local hardware stores, expansion and replication of the Isla Urbana initiative can happen in nearly any part of the world with similar resource availability.

Another necessary element for the replication of Isla Urbana is a reliable source of funding. Through our participation in policy reform, we are expecting the city government will fund more RWH systems in the near future. We will continue to work with allied NGOs, apply for other sources of funding, and host fundraising campaigns to ensure the success of our initiative.

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## 13. Supporting Material

Please see CD included in envelope.