RAINWATER CATCHMENT SYSTEMS
FOR MARGINAL COMMUNITIES

Dr. Manuel Anaya Garduño
Coordinator

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World population is about 6.4 billion people, almost 1.5 billion do not have access to drinking water.

Source: Francisco Jimenez Merino

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Situation in Mexico: 3.3 million families without access to drinking
Is it possible to change paradigms related with water supply at national and international levels?

Is it feasible to establish water supply systems for people who do not have access to it?

In general speaking, do we pay attention to water quality for different uses?
OBJECTIVES

- Water supply of purified rainwater at family and community levels giving special attention to marginal villages.
- Water supply of filtered rainwater for animal consumption.
- Water supply of rainwater for crop production in greenhouses and rainfed agriculture.
- Water supply for industrial use.

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Prototype: **COLPOS 1. Cistern for domestic use.**

Water supply systems which integrates catchment, conduction, filtering, storage and purification for four members of a family with a per capita consumption of 100 l/day according to WHO organization.

Storage capacity = 73 m³
Cost with purification system = 2000 USD
Cistern for domestic use (72 M3)
Prototype: COLPOS 3. Cistern for community.

Storage capacity = 2000 m³
Cost with water purification system = 120,000 USD
Cistern with purification systems (2000 M³)

Cost of production for 19 l = 0.44 USD

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Prototype: **COLPOS 4. Rainfall collection systems for animal consumption (cows).**

Storage capacity = 500 m³
Cost = 4,000 USD
Cistern: water supply to cows (500 M³)
Prototype: COLPOS 5. Rainwater collection from roofs in greenhouses.

Storage capacity = 2,000 m³
Cost = 70,000 USD

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Cistern: (2,400 M³)

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Indigenous Group Mazahua

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Rainwater catchment systems for Purehpecha indigenous group, Michoacan, Mexico

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**Fencing for protection of cisterns**

Fencing in linear meters

<table>
<thead>
<tr>
<th>Village</th>
<th>Fencing (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SANTA ROSA</td>
<td>80</td>
</tr>
<tr>
<td>SAN ISIDRO</td>
<td>71</td>
</tr>
<tr>
<td>SAN ANTONIO</td>
<td>47</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>198</strong></td>
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Training for local people in the village

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RAINWATER USES

* Purified rainwater for human consumption.
* Filtered rainwater for animal consumption.
* Crop production in greenhouses with rainwater.
* Rainwater destilled quality for industrial purposes.
* Rainwater with folic acid, vitamins, minerals and proteins to improve and quality of life in marginal villages.

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Social, economical and ecological impact.

Obtained results show that with these prototypes of cisterns it is possible to solve problems of water supply for different purposes: human consumption, animal production and crop production.

anayam@colpos.mx
www.cidecall.org.mx
595 95 1 03 23
595 95 202 38

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