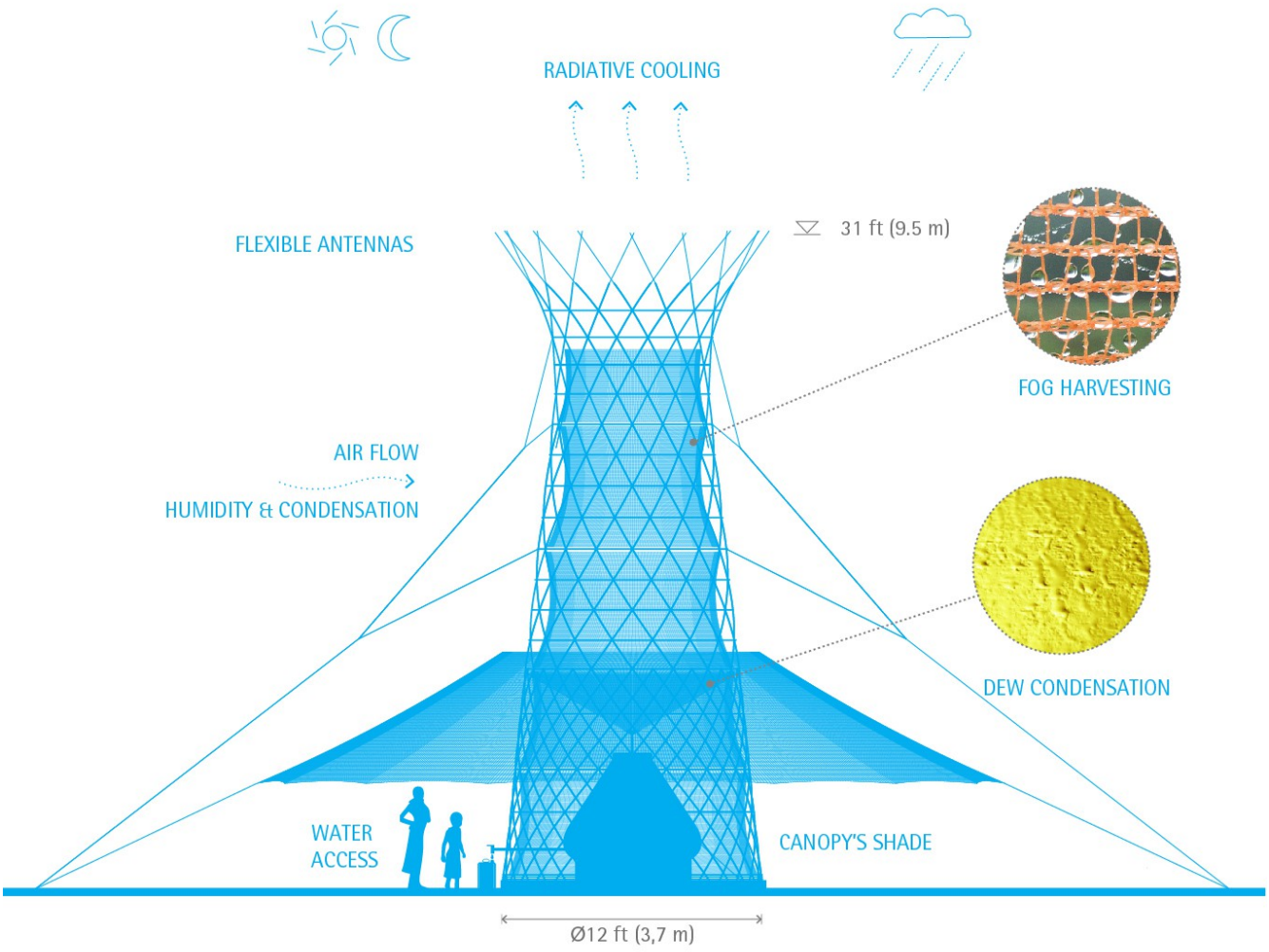
"Ecologically-Beneficial, Production-Based, Zero-Trash Jobs for Public Benefit."

Solution #1:

A 33 Foot Tower Made from Inexpensive Materials that collects an average of 20 Gallons of Water from the Air *Per Day*:

This solution is currently being modeled by our brothers & sisters in Ethiopia by a company called "Warka Water[1]"; & the knowledge of this simple low-tech invention is *quickly* spreading throughout the world; in California these would do best where there is coastal fog.



1 Home page of "Warka Water": http://www.warkawater.it/

The Simplicity of Its Design Makes It Practical

- Doesn't require excavation or ground modification to set up, & **does not extract water from beneath the ground.**
- **Collects between 13 to 26 gallons** (50 to 100 L) from the air per day.
- In addition to drinking water, the water **can be used for irrigation** (page 7).

By modeling ***a modified, more durable & industrially-sound version*** **of Ethiopia's** ***Warka Water*** innovation, we can help provide an inexpensive, long-lasting, easily-reproducible, & *aesthetically-pleasing* **piece of art** which simultaneously **helps us to meet the resource needs of our population**.

Sees *most* water collection among *(at least)* the following circumstances:

- Where there's a greater level of temperature difference between night & day, thus ***in valleys***.
- **Along the coastline *especially*** where there is **regular fog or humidity.**
- **When plant debris is used in conjunction with the nylon mesh** in order to attract more moisture at nighttime (esp. **in deserts).**

Dimensions:

Height: 31 ft (9.5 m) tall

Weight: 176 pounds (80 kg).

Materials:

Poles: Stainless steel (any bamboo equivalent)

Rope: Nylon (doesn't rot or leach plastic into the water)

Metal Pins: Tent stakes

Mesh: Industrial nylon

Nylon has excellent physical properties, including:

- "Ripstop" nylon is durable & long-lasting
- "Food Grade" (FDA approved[2]) mesh available; doesn't leach into the water that is collected
- doesn't rot or grow mold

2 Nylon / PA filter mesh FDA Certificate ISO9001:2008; Certified management system; www.FDA.gov

Assembly & Purpose:

The elegant triangulated frame structure, originally made with bamboo split elements by Warka, *is optimized for lightness & strength;* the bamboo can be replaced with one of many viable local or industrial materials. This frame structure is deployable to make easier to transport; the joints are then fixed with (hemp, nettle, nylon straps, etc.) ropes. On the ground there are 8 fixation points placed radially around the base of the structure from where a network of ropes, *with different thicknesses,* are attached to allow the tower more stability & to be able to withstand strong winds. Inside the bamboo structure hangs the nylon Mesh that collects droplets of water from the high humidity in the air (Fog) & the Collector for dew condensation & rainwater collection. A textile canopy all around creates a shaded area for social & educational activities, & at the same time keeps the water of the water tank cool & the ground evaporation low.

Consists of 5 modules:

Footprint: Ø 12 ft (3,7 m).

Surface Area: Mesh 323 sq ft (30 sq. m)

Collector: 87 sq ft (8.1 sq. m)

Canopy: Ø 32 ft (10 m).

Water tank storage: 800 gallons (3000 L).

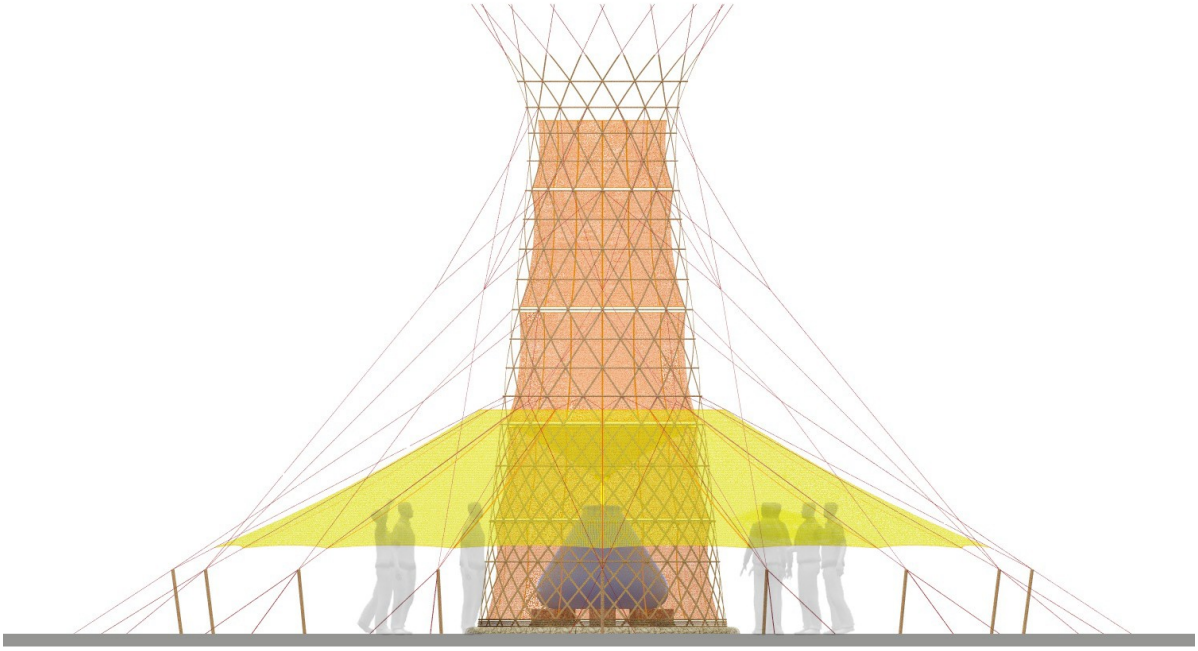
Assembly: 1 hour, 12 people.

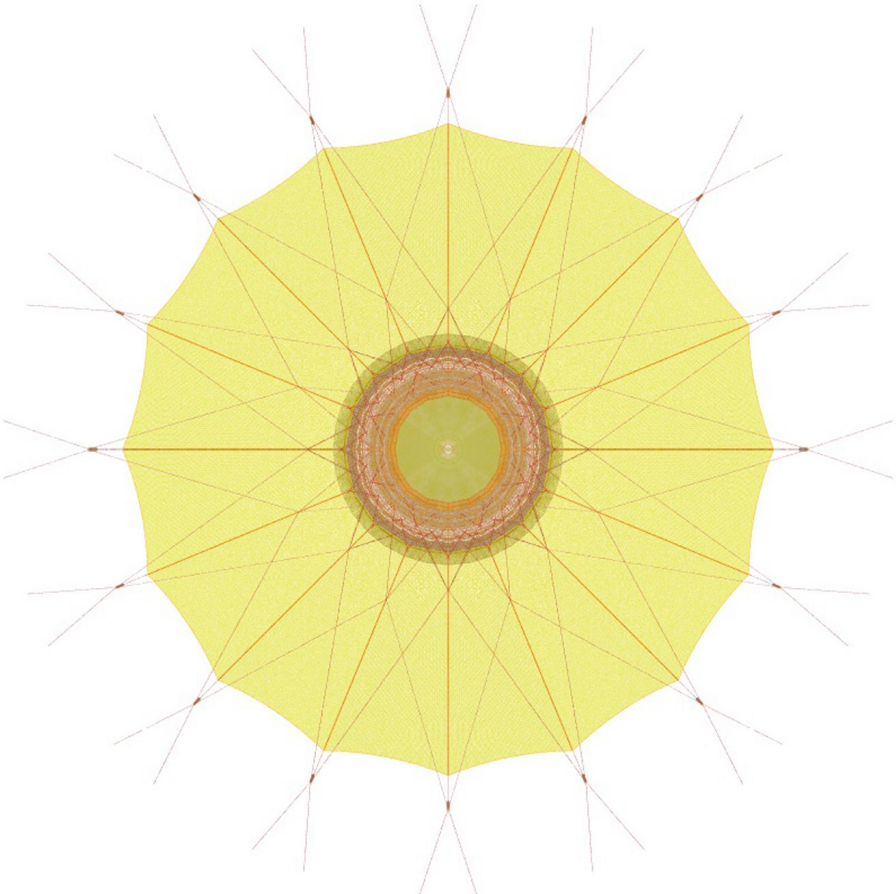
Maintenance: Easy to be maintained, cleaned, transported, & repaired; *no moving parts.*

Estimated Cost for Parts Per Structure: less than ~$300 per tower, *minus labor*

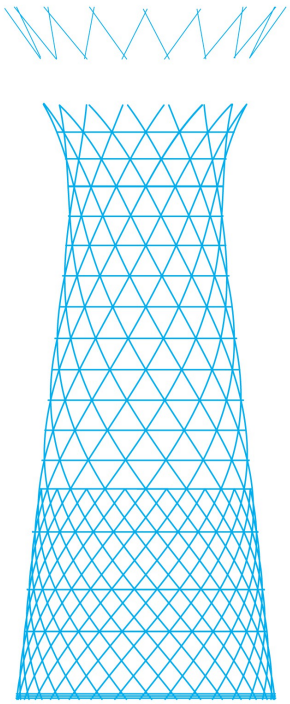
In California, *Our Proposal,* & With National Intent:

That prototypes be assembled & placed within viable places throughout national &/or State-owned Parks & Wilderness areas for the purpose of learning to maximize upon the efficiency of the design & thereby establish a product that is suitable to "greatest public benefit", *as determined by local majority vote, with special attention & privilege to the most impoverished class of civilians present within that community & their needs.* This charter shall continued to be allocated for as needed by communities whose ecological circumstances are appropriate for these structures, *including* where needed along western coastal region which sees most rainfall & fog. Once these structures have been erected & are operating smoothly with minimal upkeep necessary, any civilian may, *by order,* have access to the water as needed for substance &/or publicly-beneficial purposes so long as the product of their work is done with efficient usage.





Components:



ANTENNA

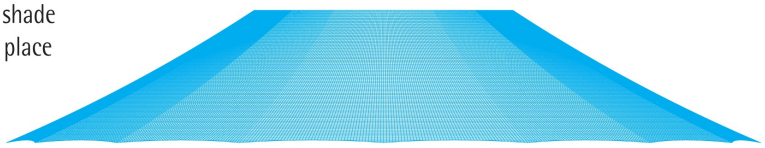
A group of antennas attached to the structure with silver kites attached to their tip reflect light keeping the birds away.

STRUCTURE

The triangulated split bamboo frame provides both robustness and structural strength keeping the overall tower light weight and stable.

CANOPY

The canopy provides shade creating a gathering place for the community.

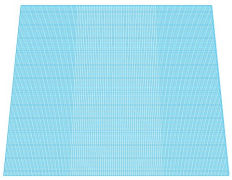


ROPES

A triangulated network of polyester ropes is used to add stability to the tall, freestanding structure.

MESH

A permeable mesh allows air to pass through the material, capturing water droplets which roll down by gravity.



COLLECTOR

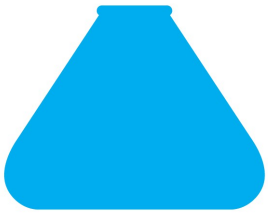
Water droplets falling from the Mesh by the force of gravity are cached by the Collector and channelled to the Water Tank. It also works as dew condensor.

FUNNEL

The water passes from the collector through the filtration system of a Funnel and into the Water Tank.

WATER TANK

A 800 gallon (3000 L) tank is used to contain the the harvested water.



BASE

Blocks of stone are used as a platform for the Warka.

Tools:

BAMBOO SPLITTER

CALIPER

DRILL

HAMMER

SEWING MACHINE

NOSE PLIER

SCISSORS

PLIER

SAW

TAPE MEASURE