Greenhouse Solar Still

An adaptation of the basic solar still, the Greenhouse Solar Still design is particularly suited for disaster areas but can also be used as a permanent water source. It’s only requirement in most cases is a single roll of polyethylene plastic. This is easily delivered by air drop to devastated areas and instructions for construction are simple enough for graphical representation.

Requirements are:

- One roll of polyethylene plastic at least twenty feet in width and preferably one hundred feet long. With larger sizes, weight becomes a factor. At twenty feet, a six foot height allows access with enough remaining to form gutters on each side. Output will vary with local conditions and further research is needed to quantify that critical value.
- A sloping site. While a north-south orientation is ideal, any will work. Again, further research is needed.
- Local vegetation such as bamboo, saplings, or even salvage, to form a hoop support system. The hoops should "tuck under" at the ground to allow for the forming of gutters without piercing the plastic. If flexible supports are not available, then heavier material can form an "A-frame" system.

Assembly is simply erecting a series of hoops approximately six feet in height with an "inside" gutter along each side. Oriented perpendicular to the slope of the site, gravity can deliver condensate to containers at the lower ends of each side. Gutters can be formed with clean weights in the bottom and short sticks or equivalent for anchoring and support. The construction of the gutters is of particular importance in windy conditions. In the latter case, the addition of limbs, etc. leaning upon the hoops from outside will be of great benefit. Properly constructed and used with care, structure can offer temporary shelter as well. Plastic should be gathered and tied at each end.

Use is as expected. Moisture from the earth augmented with impure water poured upon the ground, vegetation growing upon the site or cut and transported there, the breath of the users, all contribute to the humidity within the structure.