

# WATER SCARCITY

Defined as the lack of sufficient accessible water to meet the demands required within a region, water scarcity has become one of the major world-wide problems of our time.

It is already affecting every continent and over 2.8 billion people around the world deal with these circumstances at least one month a year. The remarkable reduction of this natural resource is being caused by two converging phenomena: the increase in freshwater use and the depletion of usable water reserves.

Next to climate change, intensive farming is playing a decisive role in this issue due to the huge amount of land and the water demand needed. Moreover, the heavy use of chemical fertilizers and pesticides in this exploitation pollutes the utmost supplies of potable water in Earth, the aquifers.

On top of this, world population has grown from 1.5 to 6.1 billion in just 100 years. This is a tendency to be continued what means that fresh water needs will increase and, by that, water scarcity.

Since governments do not promote actions to stop climate change and reduce the farming resources consumption, architects need to take part on this issue and show everyone that architecture can save the world.

## PROTOTYPE 13

The primary goal of this proposal is to alleviate the effects of the explained issue, water scarcity, by setting a net of **environmental deployable towers**. They are able to storage water after its self-collection, meanwhile their surroundings get freed of greenhouse installations and farming lands.

Each of the **deployable structures** is prototyped to work as a giant livable tank of water which is placed in the heart of an intensive farming area of the world. In contrast with conventional enclosed water containers, these prototypes are thought as complex structures of water pipes. Their construction is conceived as giant deployable scaffoldings inspired in the ancestral Japanese origami technique called **miura-ori**, bringing multitude of advantages such as being able to be deploy rapidly in any place of the world or its capacity of growing endlessly.

One of the principal elements of these structures are their pyramidal **water collectors**, which are spread across their whole body, conforming their shape. They are made of a thin fabric of nylon which ensures the capture of the water suspended in the fog, canalizing it to the main pipe structure. Working as an enormous spider net, they take the water from the air and keep it into their structure.

Besides water collection, they are also spaces capable of being occupied by plants, insects, birds and human beings. Among the grid of pipes, there is a whole agricultural cycle in which greenhouses, labs and processing spaces work together, liberating the land around the construction and creating a far more **efficient farming process**.

**Thereby, the deployable prototypes are not just a water saver but also a live generator. A project that takes part in water scarcity by making the most of the humidity in the air, while rethinking the agricultural method to achieve more efficient profits.**

