



SHARING  
EXPERIENCES

Thanks to Benjamin Lacroix-Desmaze  
for this outline of the wastewater  
treatment system using biological  
filtration as implemented by Care  
in Peru.

<http://www.carefrance.org/index.cfm>

## Wastewater treatment system using biological filtration CARE

### Objective :

The wastewater treatment system using biological filtration implemented in San Jose, Peru, is used to purify wastewater at over 3,800 meters above sea level.

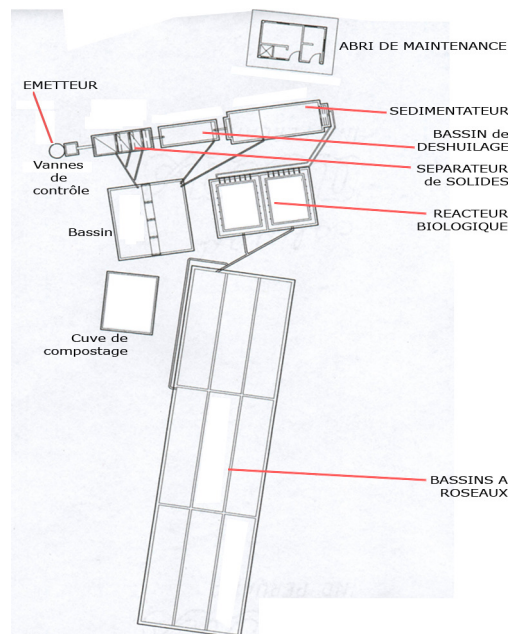
### Synthesis

This wastewater treatment system implemented by Care plans 3 phases:

- The water runs through three tanks lined up to filter the waste.
- The water reaches a biological filter where it becomes oxygenized and purified.
- Then, an aquatic ecosystem filters the excess nutrients.

The water can then be used for agricultural purposes.

### Methodology :



**The water from local homes runs through several tanks lined up alongside each other :**

**In the first tank**, the water runs through a first filter which removes large debris; solid matter, which sinks to the bottom of the tank, and then is evacuated;

**In the second tank**, oil and other liquid waste is collected from the surface of the water: this is called de-oiling;

**In the third tank**, the solid matter still dispersed in the water sinks to the bottom of the tank.

Each of the tanks has cleaning valves that send the solid matter that gathers at the bottom of the tank to a reservoir.

A **micro-biological process** converts this waste into methane, carbon dioxide and a harmless substance similar to humus. These remains are then removed manually or pumped out and used outside the tank for agriculture.

When the water has gone through the three tanks, it reaches a **biological filter** (porous stones containing aerobic bacteria) where it becomes oxygenized and purified.

Finally, the water reaches a last reservoir in which an artificial **aquatic ecosystem** has been created: the presence of aquatic plants (reeds) constitutes an effective means of absorbing the excess nutrients contained in the water coming from the biological filter (or reactor).

The water can then be used for agricultural purposes.