ValLoo

REQUIREMENTS

Space
0.4 m^2/p.e. for the vermifilter
(in total 20 m^2)
1.2 m^2/p.e. for the constructed wetland
(in total 50 m^2)

Energy use
None

Cost
CAPEX: 2,000 CHF/p.e.
(in total 80,000 CHF)
OPEX: 1,000 CHF/year

Operations & Maintenance
Twice a year sampling and control of the infiltration and of the worm population. Removal of compost from the vermifilters once every 5 or more years

(TARGET) OUTPUT

(Vermi)Compost
Small amounts of vermicompost. Can be used as compost after maturation or hygenisation step (e.g. thermophilic composting)

Treated water
Appr. 10 m^3/p.e./season (in total 400 m^3/season). The treated wastewater is infiltrated in the national parc, a sensitive alpine environment. It could be reused in a different setting

Mixed wastewater treatment
by Vuna LLC

Graphic: Delia Gregori

p.e. = Population Equivalent
CAPEX = Capital Expenses
OPEX = Operating Expenses

Chamanna Cluozza

Swiss National Park, 2022
1,889 m, 40 p.e.

Chamanna Cluozza is an alpine hut in the heart of the Swiss National Park. Wastewater is treated using a vermifilter and a constructed wetland before infiltration. The aim is to treat the wastewater in such a way as to avoid any kind of water pollution, thanks to a low-tech system based on natural processes. The vermifilter separates liquids from solids, which remain on the surface of the filter and are degraded by worms. The pre-treated effluent flows into the constructed wetland, where bacteria in the substrate biodegrade the remaining pollutants. The alpine plants keep the substrate aerated and absorb some of the nutrients present in the wastewater. The hut hosts 58 guests and 6 staff during 4 months with a wastewater production of 50 l/day per person. Thus the system is designed for 40 p.e. and almost 400 m^3 wastewater per season.