

In the section Innovative we pay attention to recent special inventions from the Netherlands. Ideas which can make a better world. Do you know one, mail it to [BZ-blad@minbuza.nl](mailto:BZ-blad@minbuza.nl)

# Water from a giant bubble

Sweet water is getting more and more scarce in many countries. A company in Delft invented an ingenious system to collect rainwater, store and purify it: the *RainCap*. Cleaner and safer than water gallons on the roof. More sustainable than concrete water tanks used most of time. By **Saskia Klaassen** - translation K. Ruysch

It all started with a Pyramid. A *WaterPyramid* that is a high plastic foil pyramid where the sun distillates sweet water from saline water. While the sun is shining, the water in the tent evaporates and drips down along the side. Simple and efficient. Villagers in Gambia, India and Indonesia have been very interested. Most said they were willing to pay two cents per liter for pure drinking water, because for them that was the right price to pay. Once the Pyramids were installed it appeared that even one cent was too much. After all, they said, the water from the well was free. Less clean, that's for sure. Many villagers do not take the consequences for their health into account, when they drink dirty water.

Delft's company Aqua-Aero WaterSystems concentrates on solutions for water scarcity in the tropics. The company started in 2002 with the invention of the *WaterPyramid*; this invention won in 2006 the innovation prize from the World bank. Unfortunately, a *WaterPyramid* is expensive: it costs about thirty thousand Euros. This includes money for management, maintenance and salaries for the local employees. For director Martijn Nitzsche this was a reason to go further and develop other simple solutions for the water shortage problem worldwide. Often in the tropics a lot of rain falls in a very short time. How can you collect from this rain as much water as possible in a short time? How can you store the water and guarantee the water quality during the months when no rain falls? Such a good system

did not yet exist in Martijn Nitzsches opinion. This explains why many villages did not even collect rainwater. This is a pity, because rainwater is free and of a high quality. Current water tanks are expensive and concrete tanks get damaged rapidly by pressure from the large amount of water they must hold for a long time. The company from Delft developed a simple foil material as a solution to this problem: in essence a grey plastic bin bag, which as a receptor for rainwater (the *RainCap*) will be buried into the ground. Costs of this *RainCap*: 2800 Euros with a storage capacity of 50.000 liters of water. For domestic use there's a smaller one. The top of the *RainCap* is closed, so dirt can't get into the water and pollute it. With a special UV lamp (see our *UV Water-Box*) the water can be filtered for drinking water, making it free from bacteria and safe for consumption. Purified water from the *RainCap* costs 0,1 to 0,2 cents per liter. Meanwhile these *Raincaps* and *Waterboxes* have been implemented in several African countries, especially in small villages, at schools and hospitals. Using a solar panel makes the system independent from electricity from the national grid. Even maintenance is very easy. In Senegal, where the first system has been implemented two years ago, villagers are collecting money to be able to expand and install more *RainCaps*. Illnesses from dirty drinking water, like diarrhea and bone aches are almost problems of the past. The Senegalese government wants to implement this system in 100 other villages. ◀

'Water from the RainCap costs 0,1 to 0,2 cent per litre'



## The Inventor

Martijn Nitzsche is originally a mining engineer. In 2002 he started his company Aqua-Aero WaterSystems, which delivers systems for drinking water and sanitation utilities. Four people are employed in Delft, and in Indonesia there's another branch setting up Water shops. In the director's opinion water is "a Magical Thing". "Water is the first necessity of life, and there is still a shortage of it. It is very exciting to try and solve that problem". Nitzsche says he's combining technique with usefulness. "I can invent a faster Ferrari or iPad but the impact will be less important". This doesn't mean the products are for free. People do have to pay for them. "By charging for them, you indicate that your products are valuable. Once the consumers understand that, you'll be able to set up and manage a sustainable system". If money can be earned, local entrepreneurs are willing to manage such a system. "The paying consumer enables the entrepreneur to continue delivering pure drinking water. Nobody wants to pay for dirty, contaminated drinking water". [www.aaws.nl](http://www.aaws.nl)

