



### Summary Groasis waterboxx

The Groasis waterboxx is an 'intelligent water battery' that produces and captures water FROM THE AIR through condensation and rain. The condensation is caused by artificial stimulation and the water is captured through physical capacities, without using energy.

The Groasis waterboxx makes it possible to plant trees, bushes or vegetables on rocks, on mountains, in gardens, in ashes of recently burned woods, eroded areas or deserts or any other place, without the help of irrigation with good planting result.

### Proven technology

The Groasis waterboxx has been tested 4 years in the Sahara desert by the Mohammed I University of Oujda in Morocco, with convincing results. Trees that were planted during the Summer with the Groasis waterboxx survived well. The trees planted were measured and showed an average growth of more than 90% in length within one year. In 2010 over 15,000 boxes were planted in experiments in Ecuador, USA, France, Spain, Morocco, Mongolia, India and Kenya.

### Science Awards

In November 2008 the Groasis waterboxx was rewarded the Dutch Bèta Dragons Science Award 2008. This competition is organized by the Platform Bèta Techniek in cooperation with the Dutch Ministry of Economic Affairs. In 2010 Popular Science, USA's biggest science magazine with over 3 million readers, rewarded from 117 break through inventions in 11 categories developed by mostly 'Fortune 500 companies', the Groasis waterboxx with the Green Tech Award in the Categorie 'Sustainable' and with the 'Best of What's New' award over all 11 categories.

### Port of Sohar - Oman

In January and February 2011 the Port of Sohar in Oman ordered a pallet of Groasis waterboxxes for landscaping purposes. Because of the devastating consequences of over irrigation the present vegetation has died and groundwater has become brackish. In order to restore the groundwater quality, the Port follows a non-irrigation policy. The Groasis Technology allows landscaping without irrigation although temperatures of over 50°C are reached during Summer.



Dying trees in Sohar caused by brackish water

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### Two plantings

One planting has been done in January 2011 at the Sohar Free Zone. It exists of 40 boxes.



January 2011, Sohar Free Zone, preparing the land for buildings, installations and landscaping at once



Planting



March 2011, Free Zone of Sohar a moonlike landscape, the trees are already above the box and grow well



February 2011, start of planting the Port of Sohar





The second planting has been done in February 2011, in the Port of Sohar.



The main road in the port area, planted February 11 – 2011



Result on March 6, 3 weeks after planting, gravel and dust, but the waterboxx does its reliable work



### **Trials at Union Minera del Norte – Spain – 2010**

Union Minera has tried everything over the last years in order to regenerate growth of trees on mine spill. Together with the Spanish government a huge greening project was done from 2007 till 2009. It failed. In June 2010 Union Minera took contact with AquaPro and planted a trial of 100 boxes in the beginning of hot July. This was an impossible planting period, but Union Minera wanted to know the results as soon as possible. Although Spain had one of its hottest Summers in 2010 the planting experiment showed a result of over 95% success ratio.



Please look at this video of the planting, taken on September 2010 after the hot Summer:

[http://www.youtube.com/user/Groasiswaterboxx#p/u/3/l2ESH4\\_ahnM](http://www.youtube.com/user/Groasiswaterboxx#p/u/3/l2ESH4_ahnM)



An overview of the planting





### **Trees grow everywhere**

Trees grow in deserts and on rocks. Most of the mountains on Earth are covered by woods. All mountains on Earth are rocks, think of the name Rocky Mountains.



Pinus ponderosa on rocks in Sierra Nevada, 50 kilometers east of Sacramento California

### **Groasis Technology compared to drip-irrigation**

The Groasis Technology is extremely (cost)-effective compared to irrigation. With the Groasis Technology there is a one-year investment cost. With drip-irrigation costs continue eternally. Here are the effects:

#### **Groasis Technology**

1. Planting material: 1 euro per plant, 2 plants per box, is 2 euro
2. Groasis waterboxx: investment 10 euro per box, 10 years re-use = 1 euro per tree
3. Planting costs: PM but at least 50% less than planting with irrigation
4. Maintenance: none
5. Energy: none
6. Water from air
7. Costs per liter water: none
8. Usable on slope areas: yes
9. Sustainability: 100%
10. Future costs of landscaping predictable: yes, zero

#### **Irrigation**

1. Planting material: older/more mature planting material needed, app. 5 euro per plant
2. Irrigation system: investment app. 3 euro per tree (drilling well, electric pumps, main line tube system, electricity network, dripping tubes)



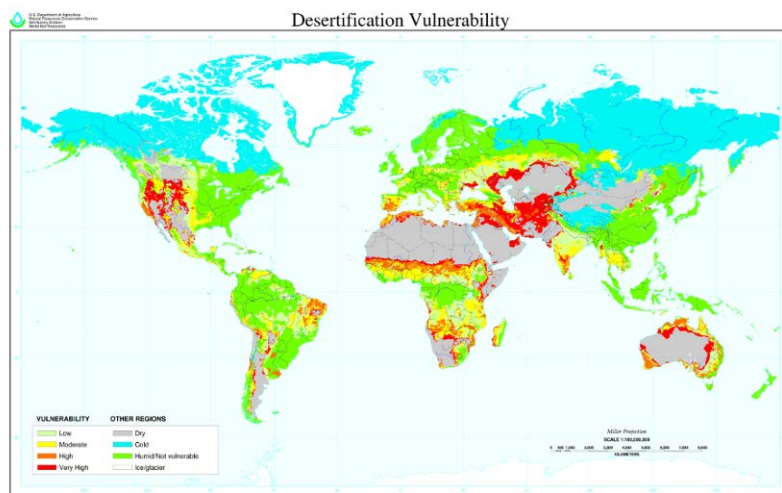
3. Planting costs: PM, the application is much more complicated than applying the waterboxx
4. Maintenance: pumps, each 5 years replacement of tubes, leaks
5. Energy: eternal use of pumps
6. Groundwater
7. Costs for liter water: water will be priced in future
8. Usable on slope areas: no
9. Sustainability: none
10. Future costs of drip-irrigation predictable: no, uncertain. Depends on developments of costs of maintenance, wages, energy and pricing of water.

### **Mission of Pieter Hoff**

Pieter Hoff's mission is to cause the reforestation of the 2 billion hectares of once forested land that was destroyed by Mankind over the last 2,000 years. However, his mission is not to reforest based on emotions but to reforest based on sound business models. All trees on this 2 billion hectares were once cut and afterwards sheep and goat ate the rest. If trees once grew there, they can grow there again.

Pieter Hoff's motto:

*'if this yellow, orange and red area was small enough to cut, it is also small enough to replant!'*



This is the once forested and now eroded area that needs to be reforested.  
If you are inspired, then help Pieter Hoff to reach it. Thank you for reading this document.

Kind regards  
AquaPro Holland

Pieter Hoff  
CEO