



Water and Land

1. Land Use Planning, Forest Cover and Afforestation

**Fog: a sustainable source of water for people,
forests and afforestation**

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High Elevation Fog is Produced by Clouds Moving Over the Mountains



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Fog Diameter and Fall Velocity

- Fog:
 - Droplet diameter 1-40 micrometers
 - Droplet fall velocities < 5 cm/s
 - Typical fall velocity 0.3 cm/s

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FogQuest Project, Tojquia, Guatemala, October 2006



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***1300 Liter Water Tank and Fog-Water Pipeline
Alto Patache, Atacama Desert, Chile***



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Aloe Vera at Falda Verde, Chile, August 2006



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Tanks for Fog Water, Arberobue, Eritrea, 2007



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Fog Water for School Children, Arberobue, Eritrea, 2007



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Water Production and Costs

- One square meter of mesh can produce from 1 to 30 liters of water per day : 5 L m⁻² day⁻¹ is typical
- One LFC produces an average of about 200 L of clean water a day : enough for eight people in arid climates
- 25 LFCs can supply 5000 L per day for a village
- One LFC costs from \$600 to \$1000
- A village water supply can cost from \$10,000 to \$20,000 depending on access, pipelines, tanks, etc.
- The fog water meets WHO drinking water standards

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Conclusions

- Applications in all Parts of the World
- New Potable Water
- Environmentally Friendly
- Sustainable
 - Over periods of hundreds of years
 - Seasonal & annual variations as for rain
- Complementary to Rain Catchment
 - Effective even if rainfall is negligible
 - Rain collected if present
- Fog is a Natural Source of Water for Forests and can be Managed to Generate New Forests

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