

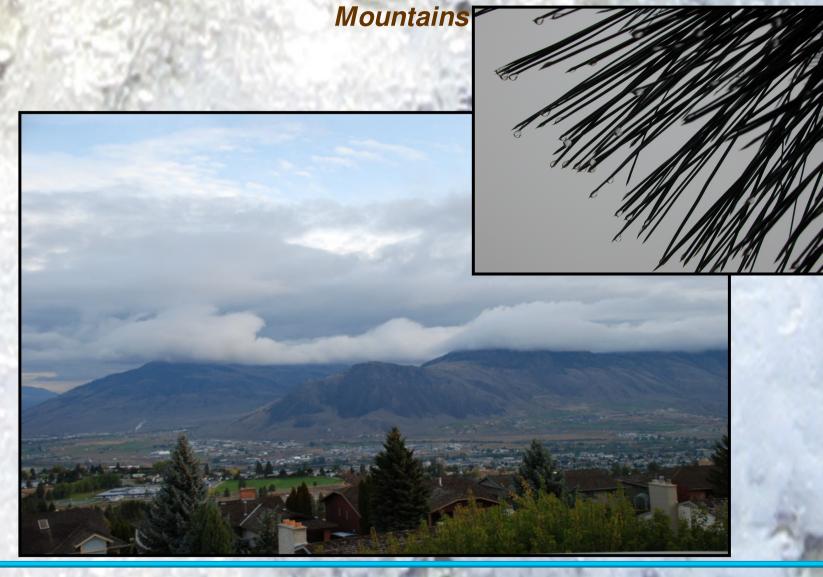
#### **Water and Land**

1. Land Use Planning, Forest Cover and Afforestation

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

Robert S. Schemenauer

## High Elevation Fog is Produced by Clouds Moving Over the



Zaragoza, June 16, 2008

#### Fog Diameter and Fall Velocity

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

## FogQuest Project, Tojquia, Guatemala, October 2006



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



#### Aloe Vera at Falda Verde, Chile, August 2006



### Tanks for Fog Water, Arberobue, Eritrea, 2007



### Fog Water for School Children, Arberobue, Eritrea, 2007



#### 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

#### **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