BIOSAND FILTER: AN ALTERNATIVE TO TREAT DRINKING WATER AT A HOUSEHOLD LEVEL

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Access to clean water is “essential to the realization of all human rights”
United Nations General Assembly under the Resolution 64/292
Intermittent Slow Sand Filter

- Adaptation of a traditional slow sand filter
- Filtration rate: 400 L/hr/m²
- Designed by Dr. David Manz (1991)
- Implemented in more than 70 countries
- Appropriate technology
  - Low cost
  - Materials availability
  - Operational simplicity

1. Reservoir Zone
2. Standing water Zone
3. Biological Zone
4. Non-Biological Zone
5. Gravel Zone
How to build a biosand filter?
How to build a biosand filter?
MEDIA

- **Find the medium:**
  - Crushed rock
  - River sand
  - **Sieve**

- **Drainage Gravel**
  - 6 - 12mm

- **Separating Gravel**
  - 1 - 6mm

- **Filtration sand**
  - < 0.7 mm

- **Depth:**
  - 1"
  - ½"
  - 6"
DIFFUSER

**Diffusor:**
To prevent any disturbance sand surface

**Material:**
Corrugated Plastic
Plastic
Metal
Turbidity

- Measure of the cloudiness of water
- Nephelometric turbidity units (NTU)
- Naked eye > 5 NTU
- Consists of:
  - Mud
  - Silt
  - Sand
  - Chemical precipitates
  - Bacteria
  - Algae
**Turbidity tube**

Depth (cm) = 244.13 (NTU)^{-0.662}

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<th>cm</th>
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</tr>
<tr>
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