# WATER AND WASTEWATER OPERATIONS RELIEF ENGINEERING

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Operator Training Committee of Ohio
December 8<sup>th</sup> 2016
Holiday Inn Worthington

#### Needs Around the World

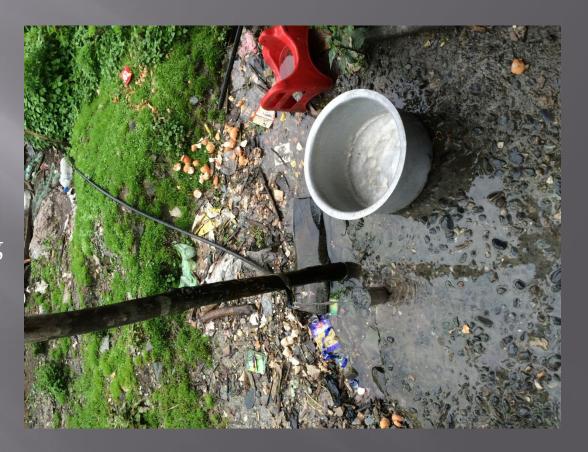
- Central America
- Middle East
- North Africa
- Asia

### Water and Wastewater Needs in Nepal

- Earthquake in 2015 Devastated the Region
- Upper Himalayan Villages hardest hit
- Areas difficult to access
- Different culture prohibits typical solutions

### Washing dishes in Nepal

- This is a n upscale washing facility for the vast amount of Nepal people
- The city have running water but the wastewater either runs directly outside or into overflowing seepage pits



#### This is typical in Nepal

<iframe width="640" height="360" src="https://www.youtube.com/embed/bYh WxshJZkc" frameborder="0" allowfullscreen></iframe>

#### Trashed Rivers



#### Trashed Rivers

- Direct sewage discharges
- Direct Industrial discharge
- Rivers are used as dumps for municipal solid waste
- The people seem to be OK with this



#### Typical Restroom

- This is an upscale facility in Nepal
- There is
   essentially no
   centralized
   wastewater
   treatment in
   Nepal
- Only 27% of people have seepage pits
- Most all sewage is directly discharged into streams and



#### We Got It Pretty Good

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