Drinking Water Problem in Nepal.

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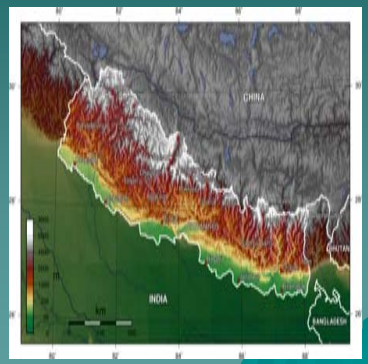
- Area : 147181Km² (56,827 mi²)
- Length : 800 km (500 mi)
- Breadth : 200 km(125 mi)
- Population: 28,901,790
- Density : 184/km²
- Capital: Kathmandu

- Landscape: It is divided into three different parts based on elevation:

1. Himalayan region (4,877 m to 8,848 m) :Northern part. Contains of eight of the world's ten highest mountains, including the highest, Mount Everest.
2. Hilly region: middle region (600 – 4877m). Major cities lies on this region. Capital of Nepal Kathmandu also lies in this belt.
3. Terai: South most part(100 – 300m). Flat region with lowland **Plains** .



Water

- Water: 2.8 %
- over 6000 rivers of which 10 are big ones.
- 600 lakes with area greater than 1 ha.
- surface water resources =198.2 km³/year.
- groundwater resource equivalent to ten percent of surface water=20 km³/year.
- mean annual rainfall = 1700 mm.
- cultivable area has been estimated at some 4 million ha. Some 2.6 million ha are cultivated, mainly with annual crops .

• Nepal has water supply system only in city areas.
. In other part of the county people use natural sources like stream, spring, wells, etc.

Women carrying water

Stone spout

Tube well

Spring water source

municipal taps

Kathmandu

- Area of 585 Sq. Km
- Population of 1.5 million.
- Estimated total demand of 175 MLD.
- Supply of drinking water about 115 MLD.
- Water supply meets only 65 % of total demand.
- For other requirement people depend on other natural ground water sources like wells, stone spouts, municipal taps, etc.

People fulfill their water requirement through ground water sources

A traditional dug-well

Stone spout

Water quality

- **Water quality of Kathmandu.**

Ground water

1. Shallow ground waters are at risk from contamination of pathogenic bacteria, pesticides, nitrate and industrial effluents.
2. There could be contamination of iron, arsenic, nitrate in tube well water.

Drinking water quality:

3. Drinking water also could have viruses, bacteria and other parasites .
4. There could be presence of iron in the water.

- Reason for water quality deterioration:

1. Dumping of domestic waste and industrial water into the water bodies without any treatment.
2. Increase in use of chemicals for agricultural purpose.
3. Non existence of sewage network in other part of the counties except the city area.

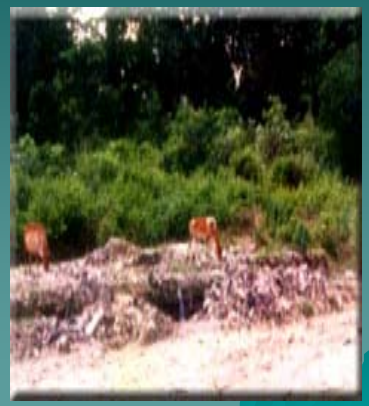
- **For drinking water quality:**

1. Presence of leakage.
2. Presence of sewage pipe nearer to drinking water pipe.
3. Rusting of the pipe lines

Contamination of Rivers

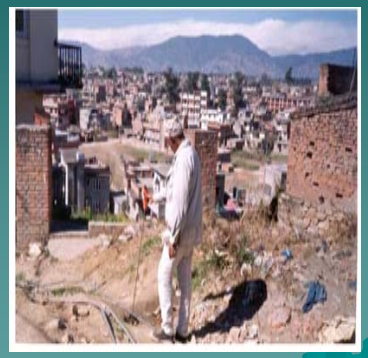
Water Use and Waste Water Discharged into near by River by Carpet Industry

Bagmati River in the Kathmandu Valley Near Holy Temple Pashupati Nath



Waste dumped at river side

Water supply pipelines



Some facts

- Water borne disease a major health problem in Nepal
- Diarrhea , intestinal worms, gastritis, typhoid, and jaundice are the top five water-borne diseases
- More than 22% of the under 5 years population suffered from various water borne diseases every year.
- About 13,000 children died from various water borne diseases only in 2005.
- Only 45 percent of Nepal's population has access to toilets.

Conclusion

- The water quality can be improved
  - Prevention of dumping waste in rivers
  - Cleaning the existing rivers.
  - Putting Sewage pipes as far as possible from the drinking water pipes.
  - Avoiding use of excessive amount of pesticides and fertilizers.
  - Mostly by educating people about water quality and water borne diseases.

Thank you