

Gravitational Water Filtration Systems for Import by Nepal

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Intro to Nepal

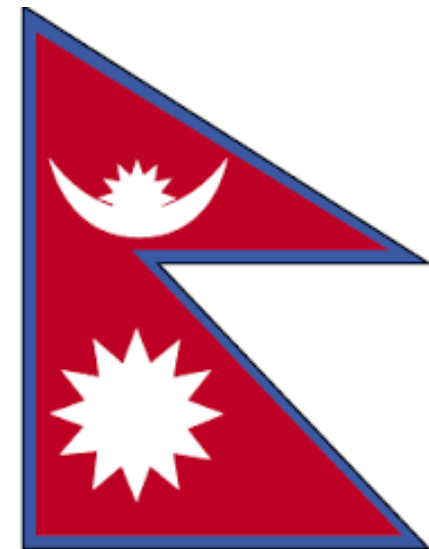


Source: Visit Nepal Network, 2012

Nepal shares borders with India and China, who represent 61% and 14% of trade by value respectively. (WITS, 2016)

Population: 29,033,914
(July 2016 est.)
Caste/Ethnic Groups: 125
Language: Nepali (official)
123 mother tongues
Religion: 81% Hindu, 9% Buddhist
Life expectancy: 71 years
(2016 est.)

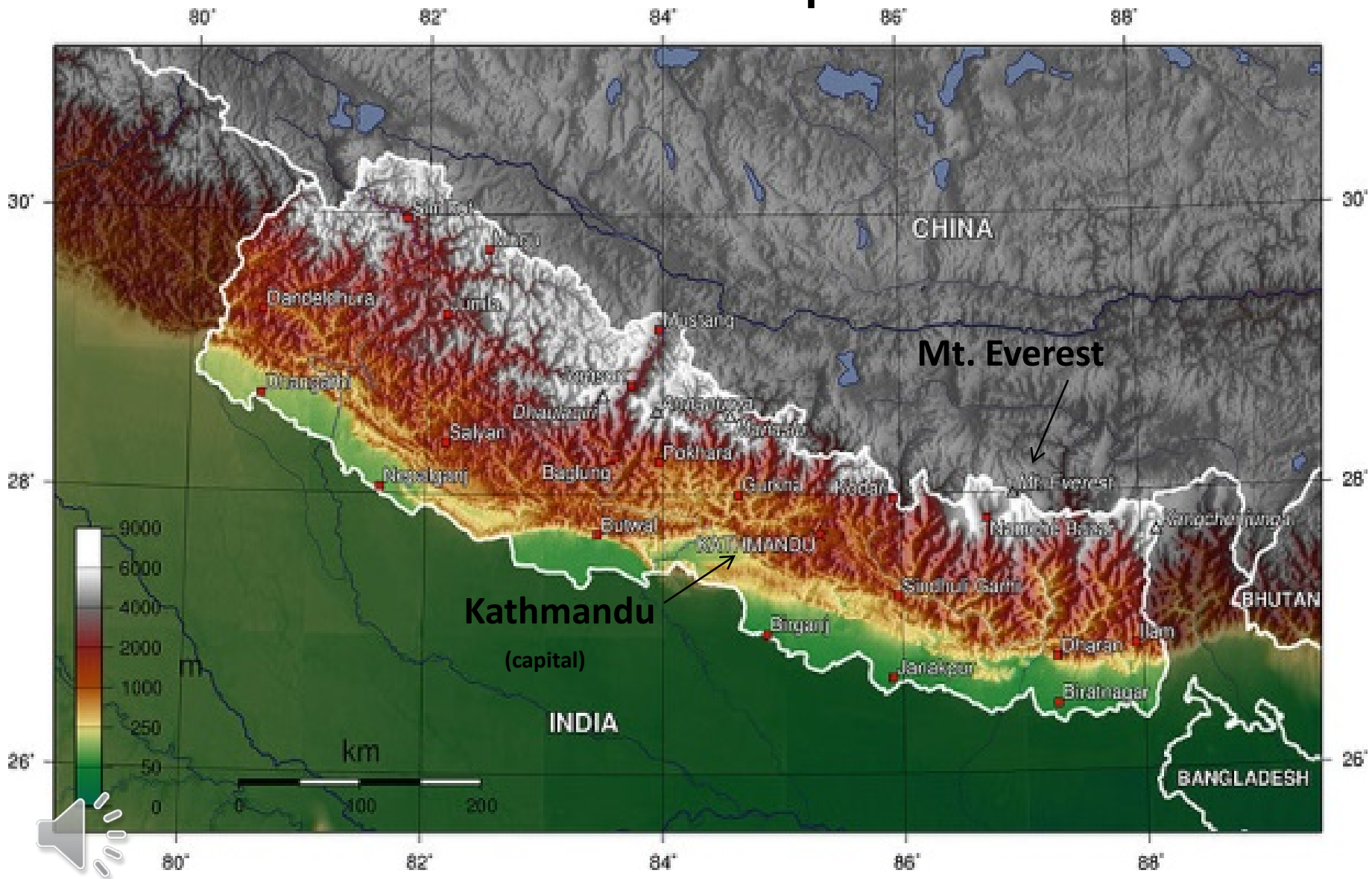
(CIA, 2016)



Source: CIA Factbook, 2016



Intro to Nepal



Source: https://commons.wikimedia.org/wiki/File:Nepal_topo_en.jpg

Intro to Nepal



Photo Credit: J Hoffmeyer, 2010



Land Area: 143,351 sq. km
Agricultural : 28.8%
Irrigated: 13,320 sq. km
Forest: 25.4%
Water Area: 3,830 sq. km
-land locked

(CIA, 2016)

Export Idea Description

Rainfresh® Bucket Gravity Filters – Model MP4U

“Rainfresh® MP4U gravity water filters are designed to provide microbiologically safe drinking water from virtually any water source (lake, river, pond, stream, well etc) without the use of pumps or electricity.”

(Envirogard Products Ltd, 2011)

Key Features:

- Does not require electrical power
- Traps and kills >99.9999% harmful bacteria
 - E. Coli
 - Shigella dysenterie
 - Salmonella typhimurium-Serratia marsescens
 - Vibrio Cholera
 - Klebsiella terrigena
- Traps >99.95% Protozoan cysts
 - Cryptosporidium
 - Giardia





Bucket Gravity Filters – Model MP4U

How it works:

The system is comprised of two 35L buckets, one for untreated water (upper) and one for safe drinking water (lower). Between the two buckets, 4 silver-impregnated ceramic filters allow water to flow to the lower bucket by force of gravity, trapping the bacteria and cysts as the water passes.

Treated water storage capacity: 35L

Max flow rate: 2.9L/hour

System weight: 3.5kg

$$\text{Total Volume/day} = \frac{2.9L \text{ water}}{\text{hour}} \times \frac{24 \text{ hours}}{\text{day}} = 69.6L/\text{day}$$





Bucket Gravity Filters – Model MP4U



7300G Ceramic Filters

-Tested and certified by Canadian Standards Association

There are four of these filters in the MP4U model. They require no chemicals, but can be cleaned when the pores are clogged.

Filters can be cleaned up to 100 times! The scrubbing pad and a gauge are included with the product. The gauge ensures that the filter is still of an appropriate size to be effective.



Envirogard President
Scott MacDonald and
the interior of the
MP4U Filter System.

Photo Credit: Rick Eglinton,
Toronto Star



Cartridge OK
Gauge does not
touch cartridge

Replace Cartridge
Gauge touches
cartridge

Benefits to Nepal and Consumer

Water-bourne diseases such as Hepatitis A and Typhoid and the most prevalent in Nepal, a risk to residents and travelers. (CDC, 2015)

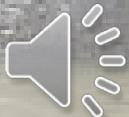
As a result, a source of clean drinking/food preparation water could greatly reduce illness.

GDP Health Expenditures 5.8% (2014) (CIA, 2016)

Hospital Bed Density: 5/1000 population (2006). (CIA, 2016)

Drinking Water Source: 91.6% population, improved (CIA, 2016)

- 83% of samples from public sources, including improved systems, in Bhaktapur tested positive for Total Coliforms (Diwakar, Yami and Prasai, 2008)



Envirogard Products Ltd.



- Based in Richmond Hill, Ontario
- Employs 35 people

- Manufacture water filtration products for long-term use by homes and businesses and more versatile products that don't require energy
- Total sales are between \$5-10 million (\$CDN), with \$500,000-1,000,000 (\$CDN) in exports to 22 different countries, including China.



Benefits to Canada

Exports and business coordinated by Export Development Canada (EDC) in 2015 represented

- \$67 billion in Canadian GDP (4.1%)
- 530,839 jobs (3.0% of national employment)

(EDC, nd)

Diversification of trade partners and products minimizes the threat an economic down turn in a country or region poses to Canada's economy. (Moeller, 2012)



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