

# Problems of Poverty

Less Energy, Low Efficiency,  
Polluted Environment

**Barun Mitra,**

Liberty Institute

[www.libertyindia.org](http://www.libertyindia.org)

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# India on the Energy Map

## Commercial energy production and per capita, 1999

<i>Country</i>	<i>Commercial Energy Production (thousand metric tonnes of oil equivalent )</i>	<i>Commercial energy use per capita (kg of oil equivalent)</i>
USA	1,687,886	8159
China	1,056,963	868
Bangladesh	14,474	139
<b>India</b>	<b>409,788</b>	<b>482</b>

# Energy in India

Sl. No.	Source of Energy	1970-71	1980-81	1990-91	2001-02
1.	Commercial energy production	47.67	75.19	151.43	210.83
2.	Net imports	12.66	24.63	31.69	87.85
3.	Total commercial energy supply (1+2)	60.33	99.82	183.12	298.67
4.	Primary non-commercial energy supply	86.72	108.48	122.07	139.02
5.	<b>Total primary energy supply (3+4)</b>	<b>147.05</b>	<b>208.30</b>	<b>305.19</b>	<b>437.69</b>

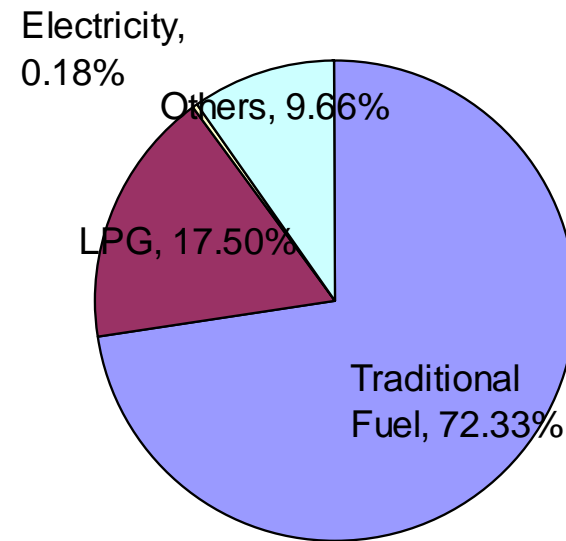
Unit: million tonnes of oil equivalent (MTOE)

# [ Problems of Poverty ]

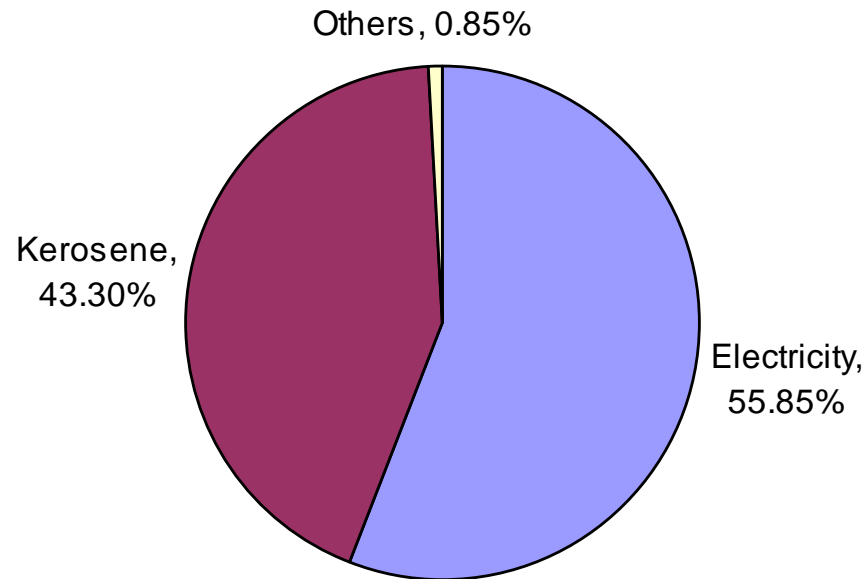
- Low energy consumption
- Low energy efficiency
- Higher energy dependence
- High energy intensity
- Higher environmental stress
- Dirty environment
- Higher Impact on health
- Lower adaptability
- Greater vulnerability to natural calamity

# [ Indoor air pollution ]

## Rural Kitchen



# [ Lighting Indian Homes ]



# Indoor air pollution – the toll

<b>Causes</b>	<b>No. of deaths</b>
Acute respiratory infections-Age less than 5 years, Chronic obstructive pulmonary disease.	310000-470000
Blindness-women (not death) and prenatal effects Tuberculosis on women	50000-130000
Cardiovascular disease-women asthma	50000-190000
Grand total:	410000-790000*

*\*Total annual deaths in India for women and children under 5 in these disease categories in the early 1990s.*

# Fuel Index



- 90% of households in small villages rely on fuels like firewood, animal dung and crop residue
- 88% of rural women population used these fuels for their daily cooking.

Fuel type	Weight
Dung	1.00
Saw dust	0.97
Crop residue	0.96
Fuel wood	0.82
Coal	0.46
Charcoal	0.31
Kerosene	0.08
Liquid Petroleum Gas	0.05
Biogas	0.04
Electricity	0.05

The more convenient, efficient and cleaner the fuel, less is its weight. Since animal dung lies at lowest end, the other fuels are weighed with respect to dung. (Parekh, et al, 2003)

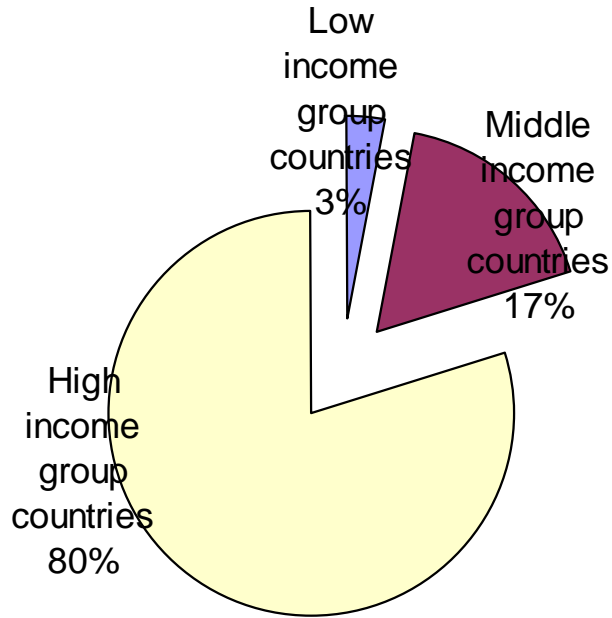


# Restricted economy, Greater vulnerability

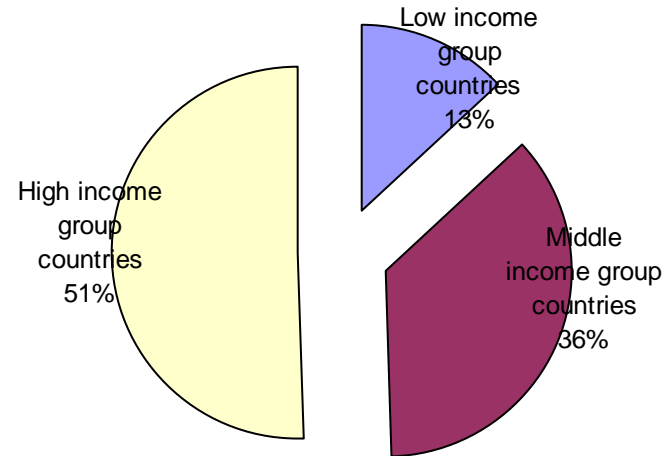
- Taxes and Tariffs reduce consumption and competitiveness and efficiency
- Poor are most vulnerability to natural calamity
  - Lighting – Bulbs to CFLs – taxes, tariff, procurement policy
  - Automobile – 180% import duty, 50% taxes,
  - Fuel – 30-40% taxes on petroleum product
  - Refrigerator – CFC and frost free, energy efficient, but ...
  - Floods – annually 1000s die in South Asia, in Florida toll ranges in 10s

# [ Income, Energy and Efficiency ]

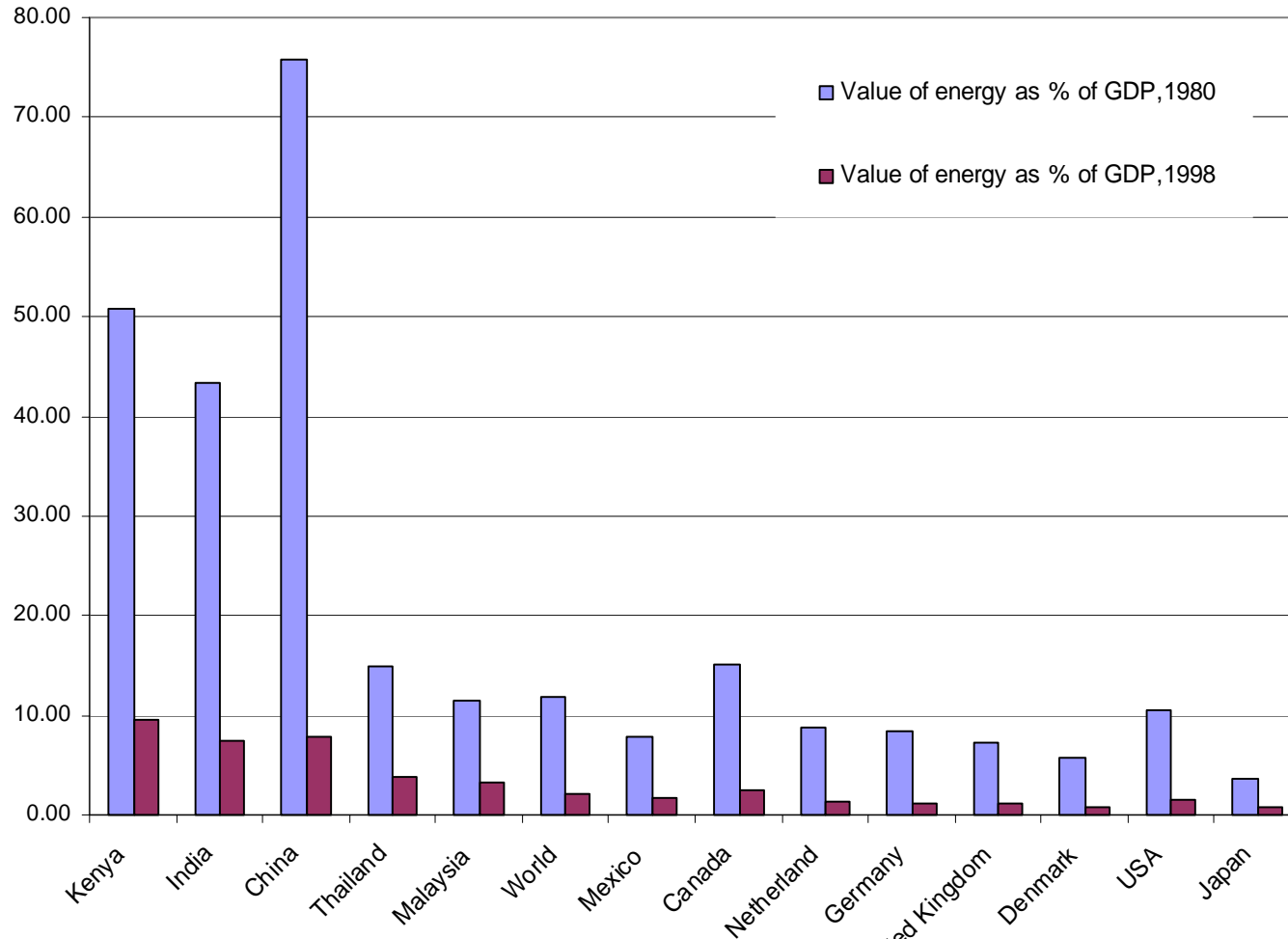
Share of World Income



Share of commercial energy



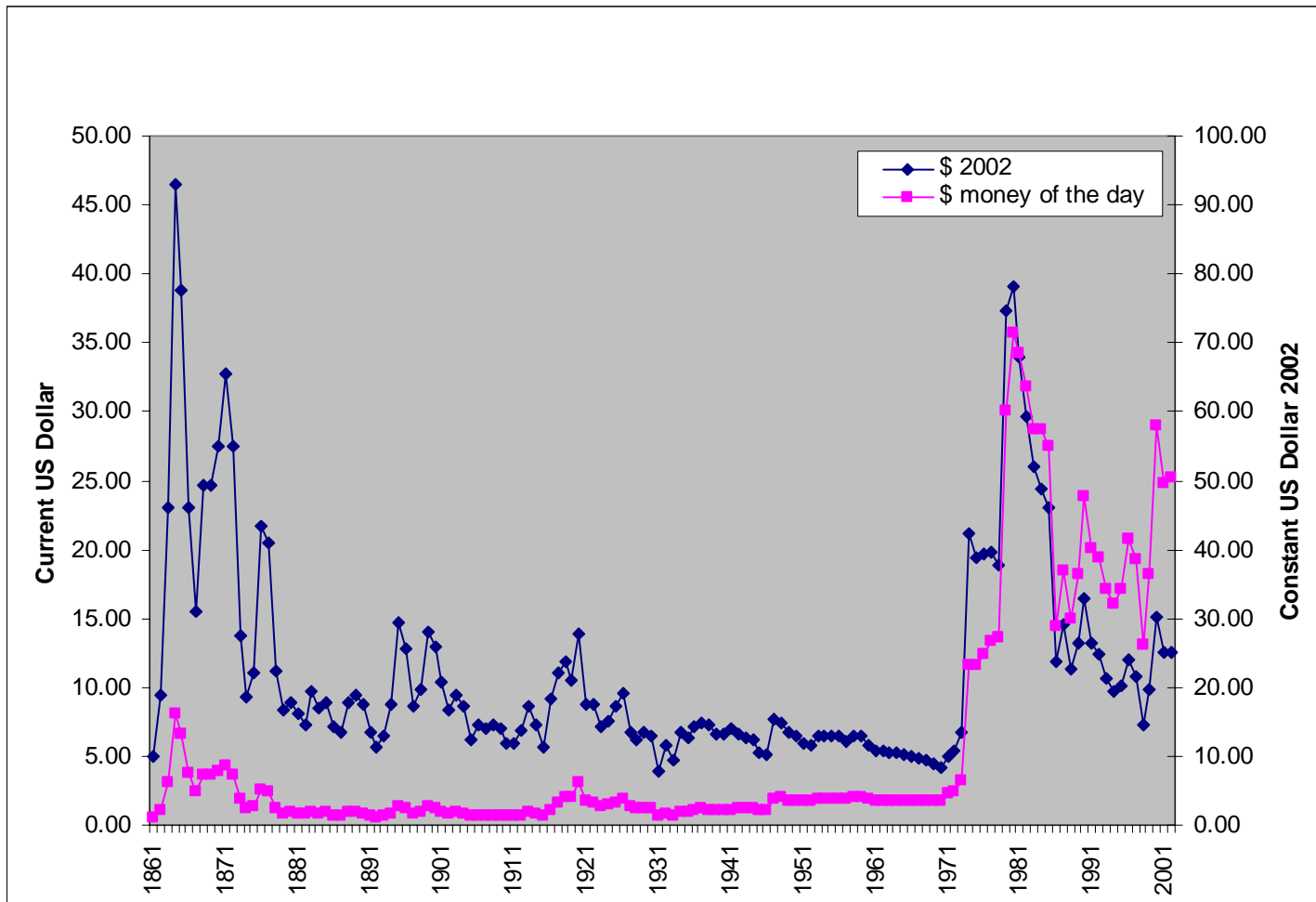
# Declining significance of Energy



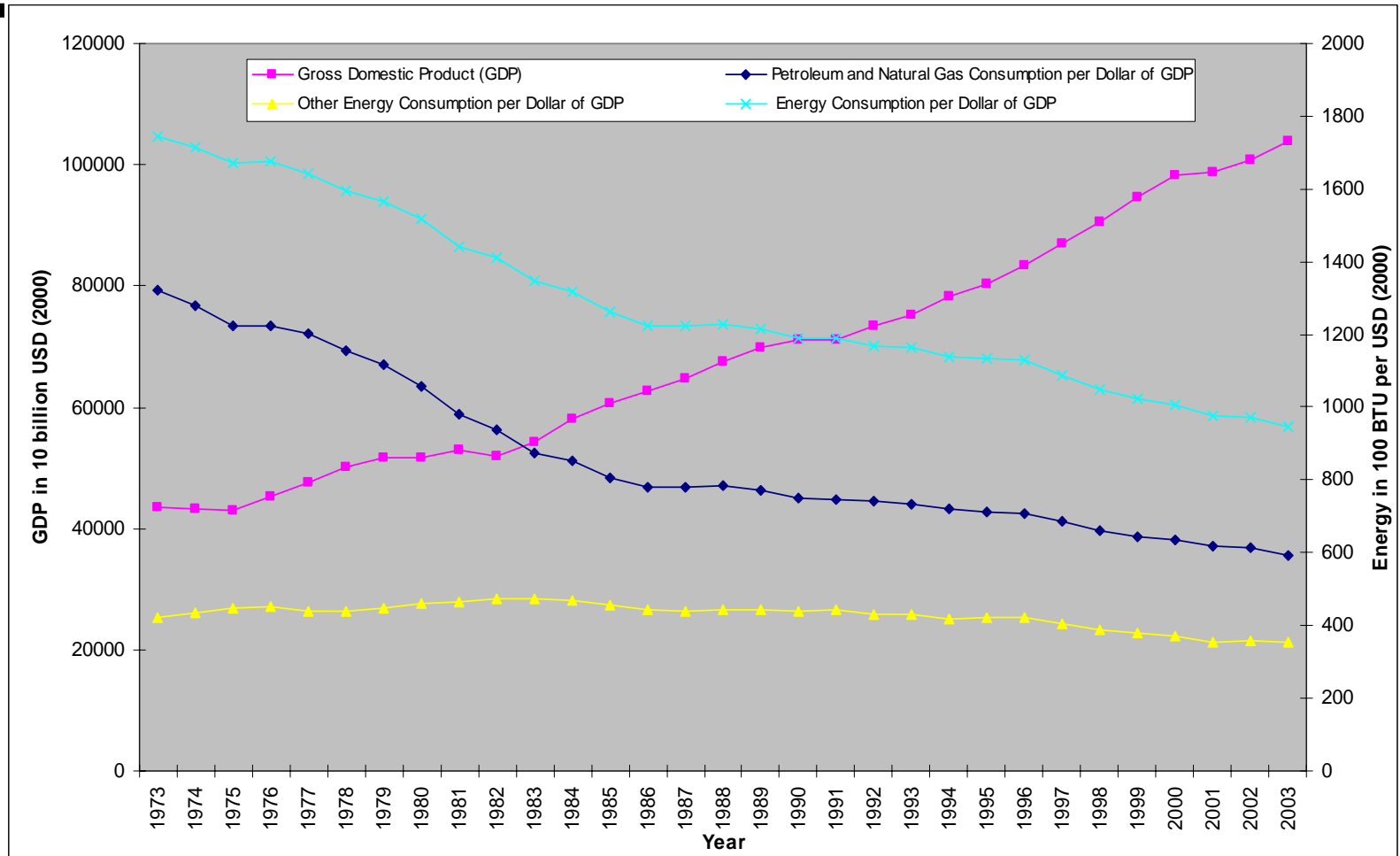
# [ Poverty Kills Today ]

- Debate on global warming, shifts focus from problems of today to 'day after tomorrow'
- Concerns about sea level rise in future, but thousands die each year due to floods today
- Millions die today from preventable diseases of poverty, but focus is on diseases of the future

# Price of Oil – 1861 to 2001



# US Energy Intensity



# [ Energy Abundance ]

- Higher energy consumption
- Higher energy efficiency
- Lower dependence on energy resources
- Lower energy intensity
- Lower environmental stress
- Cleaner environment
- Lower impact on health
- Higher adaptability
- Lower vulnerability to natural calamity

# Conservation through Consumption

- Development is the Key that unlocks the potential of increased consumption
- Economic freedom creates the competitive environment for harnessing human creativity leading to efficiency gains