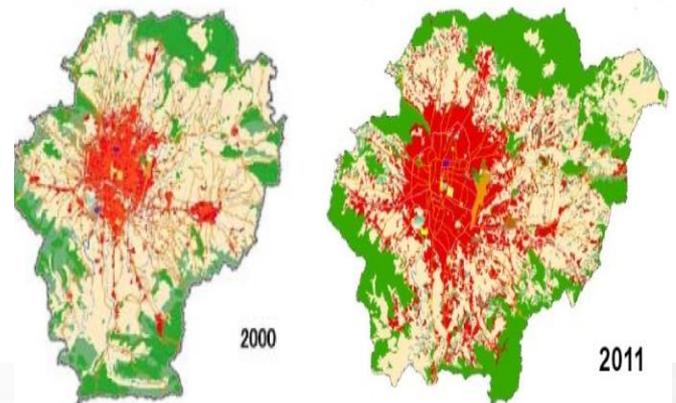


# 10 Essential transformations

1. **Change the way we design cities:** Smart *and* Green *and* Sustainable
2. **Change the way people move:** from private cars to public transport, from road to rail, mitigating need for movement
3. **Change the way we design and operate buildings:** from energy wasting to energy creating
4. **Change the way we produce, transport and consume energy:** improve the efficiency of the energy system and diversify to renewable energy sources
5. **Change the way water resources are managed:** develop eco-efficient approaches to water resources
6. **Change the way solid waste is managed:** turn waste from a cost into a resource
7. **Address patterns of exclusion** so that investment in people becomes the next driver of growth
8. **Change the way cities are governed** and broaden the stakeholders
9. **Change the way we finance cities** so they can invest in their futures
10. **Shift our thinking from quantity to quality of growth**

# 1. CHANGE THE WAY WE DESIGN CITIES: COMPACT – OR ‘SMART’ DE-CENTRED

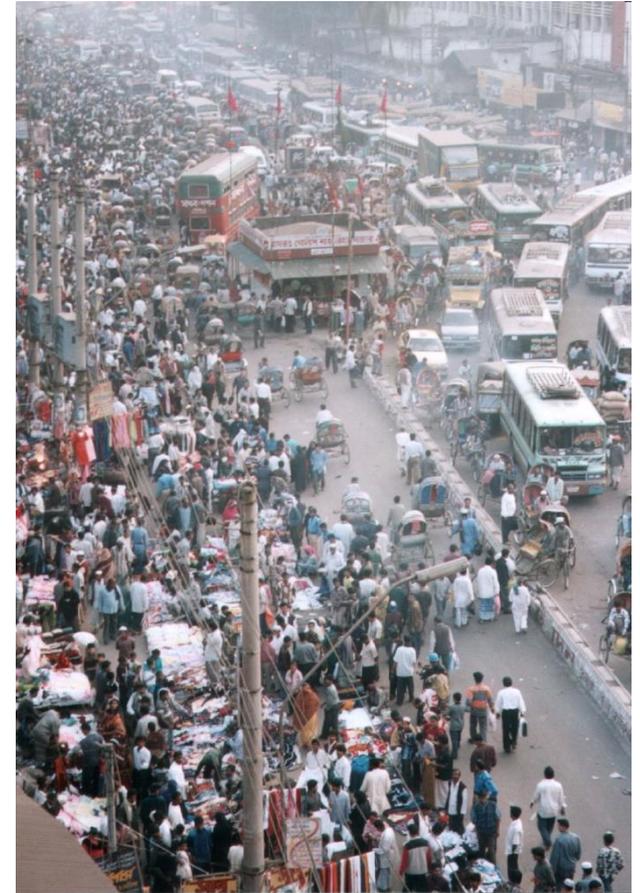
- Compact development increases land use efficiency & reduces the need for private cars
- Urban density and developing mass transit can dramatically reduce GHG emissions from transport sector
- Cellular development/compact cities create integrated/multi-centred urban areas



Kathmandu Valley

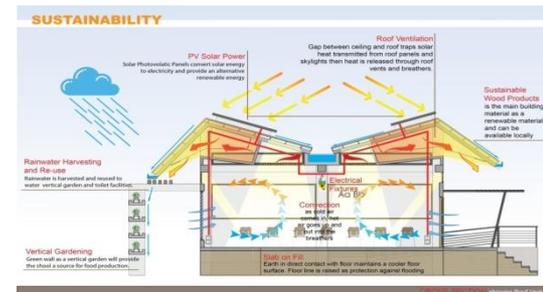
## 2. CHANGE THE WAY PEOPLE MOVE – AND INTERACT

- Transport accounts for 23% of global energy-related CO2 emissions - the fastest growing source of emissions in developing countries
- Integrate land use, housing and transport planning: cities must reclaim spaces of interaction
- Elimination of 'disabling environments', e.g. [<http://walkabilityasia.org>]
- Invest in non-motorized options: Hangzhou's bicycle scheme provides 60,000 bicycles through 2,411 rental stations and offers free rental for the first hour of use



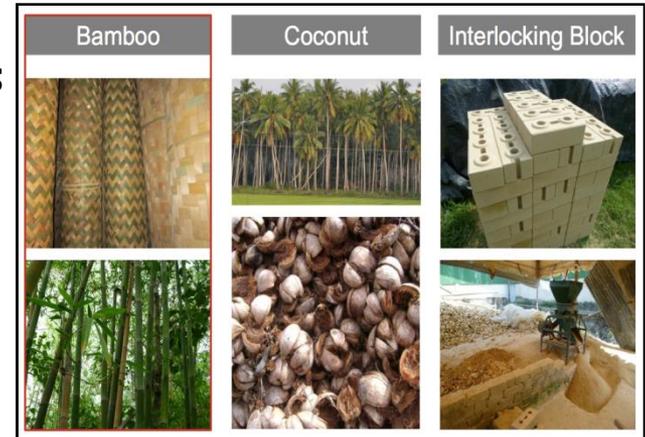
# 3. CHANGE THE WAY WE DESIGN & OPERATE BUILDINGS

- Globally, buildings generate 40% of GHG emissions
- If future cities are designed on existing norms CO2 emissions from buildings will outpace global trends within a few decades
- Improving the efficiency of buildings has a critical role in reducing energy generation
- Improving the ecological performance of buildings
- Opportunities in 'greening' building codes



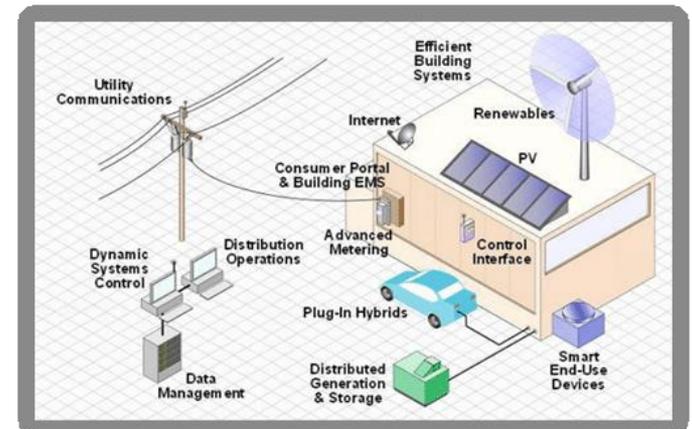
# LOOK FOR OPPORTUNITIES TO 'GREEN' LOW-COST HOUSING & SLUM UPGRADING

- More than 30% of urban citizens in Asia-Pacific live in slums, and the number of slum dwellers is increasing in many countries – even when proportion is falling
- In re-making our cities: opportunities through innovative slum upgrading in design, green spaces/gardens, use of low-carbon building materials etc
- Opportunities to produce alternative & resilient building materials that are affordable to the poor and provide livability outcomes
- Provide employment for the (rural) poor & 'sustainability networks' with NGOs/ CBOs



## 4. CHANGE THE WAY WE PRODUCE, TRANSPORT & CONSUME ENERGY

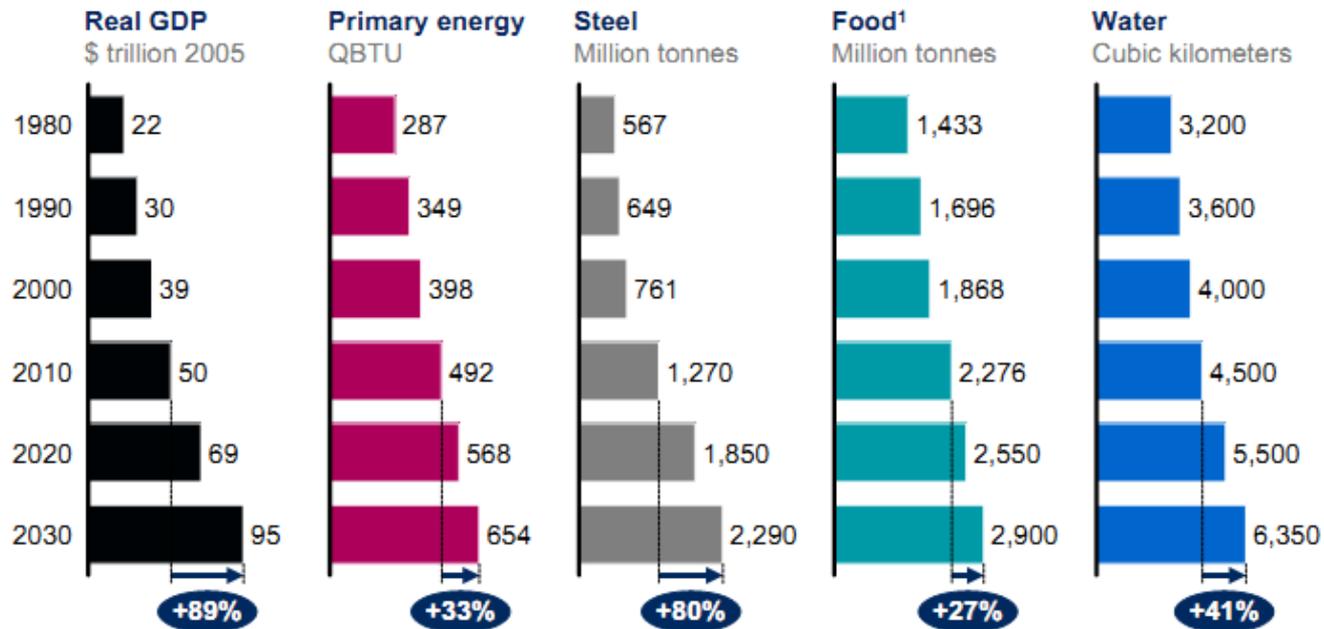
- Transition to a low-carbon economy: fundamental change of energy systems
- There is an urgent need to decouple urbanization, economic growth, high energy consumption and growing carbon emissions
- Some success:
  - Shanghai through compact city design has declining carbon intensity per capita;
  - Seoul committed to reduce GHGs by 40% by 2030 through energy efficiency;
  - Tokyo '10 year project for a Carbon-Minus Tokyo' through advanced energy saving measures & strict compliance



# CITIES AS RESOURCE CONSUMERS

- **1 billion** new consumers in emerging market cities by 2025
- Annual consumption in emerging cities is set to rise by **\$10 trillion** by 2050

Demand for most resources has grown strongly since 2000, a trend that is likely to continue to 2030



1 Only cereals.

## 5. CHANGE THE WAY WATER RESOURCES ARE MANAGED

- Eco-sustainable water infrastructure: ‘an integrated approach in water infrastructure development to achieve ecological & economic efficiency’
- Eco-efficient water infrastructure requires a shift in policies, from piecemeal to integrated, and a shift in infrastructure design, from centralized single-purpose to decentralized and multipurpose



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