

# GREEN ECONOMY AND INFRASTRUCTURE

Presented by

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# GREEN ECONOMY

- GREEN ECONOMY IS RELATED TO ECOLOGY SENSITIVE ACTIVITIES. IT SEEKS TO ACHIEVE SOCIO ECONOMIC DEVELOPMENT WITH ENVIRONMENT IN TACT. THE OBJECTIVE IS SUSTAINABLE DEVELOPMENT



# GREEN ECONOMY

- IT IS BASED ON THE FOLLOWING SECTORS
  - RENEWABLE ENERGY
  - GREEN BUILDINGS
  - SUSTAINABLE TRANSPORT
  - LAND MANAGEMENT
  - WASTE MANAGEMENT
  - WATER MANAGEMENT

# INFRASTRUCTURE

- INFRASTRUCTURE IS THE SYSTEM THAT KEEPS A SOCIETY MOVING
- SOME OF ITS ELEMENTS ARE
  - CITY
  - BUILDINGS
  - ROADS
  - POWER SYSTEM
  - SOLID WASTE

# INTERLINKAGE

- One of the major inter-linkages between the green economy and infrastructure construction is the use of renewable energy and minimization of conventional energy
- It means that renewable energy should be used to maximum extent in the creation of infrastructure

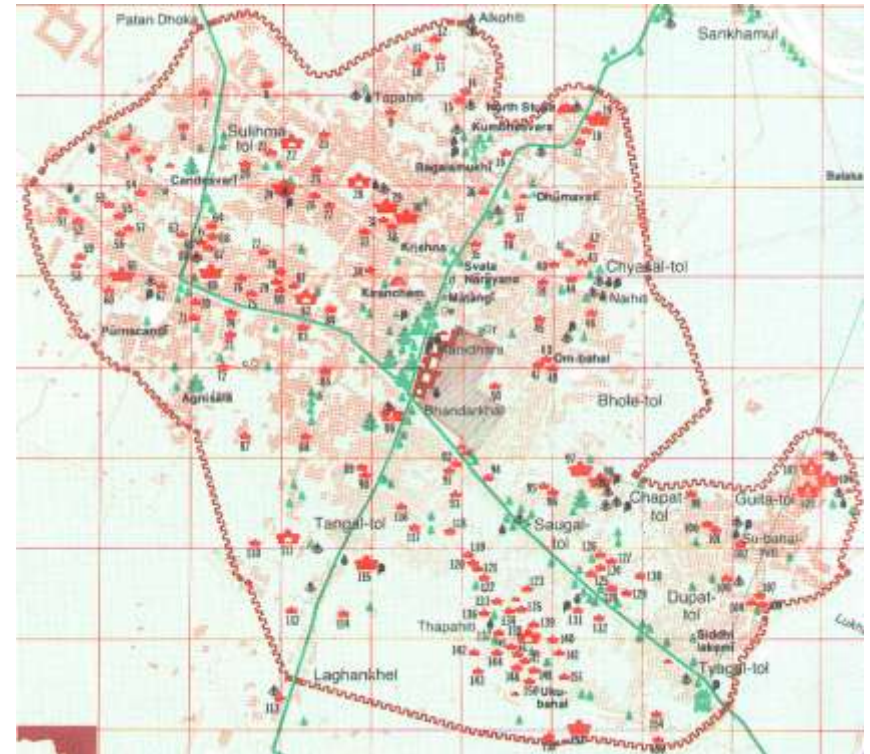
# CITY PLANNING

- MODERN CITIES DO NOT TAKE GREEN CONCEPTS INTO CONSIDERATION
- ZONING IS ADVERSE TO GREEN CONCEPTS



# CITY PLANNING

- TRADITIONAL CITIES WERE DESIGNED WITH MIXED USAGE
- PATAN CITY



# CITY PLANNING

- Prince Charles is helping to design Poundbury city
- It has mixed usage
- It is good from green concepts in city planning





# CITY PLANNING

- Buildings have been designed reflecting local identity
- Project a humane image



# CITY PLANNING

- CITIES ARE PLANNED USING RENEWABLE ENERGY
- THE EXAMPLE IS THE CITY OF MASDAR BY NORMAN FOSTER WHICH USES ONLY SOLAR ENERGY



# CITY PLANNING IN NEPAL

- The First Planned city in Nepal
- Planned after seeing the pink city Jaipur
- Tikapur was planned in modern style
- Mahendra Nagar and Birgunj planned
- Now the road widening is the new planning exercise



# CITY PLANNING IN PAKISTAN



- Parliament

# CITY PLANNING IN BHUTAN

- Thimphu, the capital city of Bhutan, is being redeveloped according to the Thimphu Structure Plan (TSP) by team of Indian architects and builders led by India-based Christopher Charles Benninger Architects.



# CITY PLANNING IN BHUTAN

- The architecture is based on the traditional dzong architecture of the Indian Himalayas, closely related to Tibetan architecture. The architecture in this master plan was inspired by the architecture in Sikkim state and Ladakh, Kashmir.



# BUILDING CONSTRUCTION

- HILL BUILDINGS ARE BASED ON GREEN CONCEPT
- NONE OF THE MATERIAL USE FOSSIL ENERGY FOR THEIR USE
- STONES, MUD, THATCH DO NOT REQUIRE FOSSIL FUELS FOR THEIR USE



# BUILDING CONSTRUCTION

- KATHMANDU BUILDINGS USE ENERGY IN THE FORM OF BRICKS
- BUT THE TIMBER, THE OTHER ELEMENTS OF KATHMANDU BUILDINGS DOES NOT USE ENERGY AT ALL





# HIGH SHAFT BRICK KILN

- This kiln is 40 per cent efficient and reduces pollution significantly



# RAT TRAP BOND



# HOUSING

- The Present housing projects do not address the green concepts



# ECOLOGICAL ROAD CONSTRUCTION

- Road construction using green techniques
- GTI in this road in Chirkini Bhanjyang near Damauli



# ECOLOGICAL ROAD CONSTRUCTION

- The idea is to use the underground by mixing in a natural rock powder
- A German patented method deploys basalt or dia base stone



# ECOLOGICAL ROAD CONSTRUCTION

- It has similar characteristic as cement
- It is available as a waste product in dia-base quarries while crushing stone materials



# ECOLOGICAL ROAD CONSTRUCTION

- When rock powder and water is mixed into the red soil, a chemical reaction depending upon the Ph allows its components to work as binding substance for soil improvement



# ECOLOGICAL ROAD CONSTRUCTION

- Conventional soil improvement techniques use chalk
- It can be harmful as it can get into the rivers and drinking water sources
- Natural rock powder is environmentally sound





# ECOLOGICAL ROAD CONSTRUCTION

- Apart from environmental benefits, it has other technical benefits also
  - Improvement of densification and shear values of road bearing layers
  - Reduced permeability in comparison to chalk soil improvement
  - Reduction of water content
  - Improvement of frost stability



# GREEN ROAD

- Low cost
- Resource conservation oriented
- Local resources
- Local participation
- Environmentally friendly
- Started by GTZ in Palpa in 1986
- Dhading 1987



# GREEN ROAD

- Participatory Rural Road Network planning
- Preservation of the fragile mountain environment
- Optimization of supportive natural forces
- Appropriate technology construction



# GREEN ROAD

- Labor based construction methods
- Performance based work management
- Decentralization
- Enhancing local building capacity and self help efforts
- Low Cost



# GREEN ROAD

- Collective financing transparency
- Sustainable maintenance



THANKS

to

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