

# Bioenergy:

(1) by direct burning

- wood, straw, animal wastes

(2) by conversion into biofuels

- charcoal, biodiesel

# Biomass & estimates (no global company!)

- (1) traditional biomass: direct burning of firewood, rice husk etc (40-60EJ)
- (2) new biomass: burning of energy crops, organic wastes (9EJ)

# Contribution to primary energy

(1) 20% in China

(2) 40% in India

(3) 20% in Sweden, Finland

(residues in pulp and paper industries)





# Bioenergy sources:

- (1) Energy crops:
  - woody crops, agricultural crops
- (2) Wastes:
  - wood residues, temperate crop wastes, tropical crop wastes, animal wastes, municipal solid wastes, landfill gas, commercial and industrial wastes

Bioenergy:

SRF, SRC

(1) Coniferous tree with higher density

(2) 10-15000 planted per hectare, cut back close to the ground after a year, re-grow for 2 -4 years, 10t per hectare in NE