

FACTS AND FIGURES

1. ENERGY ACCESS

- In developing countries, the lack of clean and affordable energy is a significant barrier to development and a major contributor to a host of environmental and human health problems. Some 2 billion people rely on wood, dung and other biomass fuels for cooking and heating, and use them in polluting and inefficient ways. (*United Nations Population Fund*)
- In percentage terms, 40% of the World's people lack modern energy services. In Africa the number exceeds 80%.
- Nine out of Ten Africans have no access to electricity and rely on traditional sources of biomass for their energy. These sources themselves are under threat from overuse, creating additional environmental challenges.
- Some examples of population served by electricity in Africa are: Sierra Leone, 4%; Uganda 5%; Malawi, 5%; Kenya, 25%, Zimbabwe, 25%, Ghana 30%, Senegal 30%, Cote d'Ivoire, 35%, Gabon 40%, South Africa 45%. Compared to Bolivia, 55%, India, 60%, or Chile and Argentina, with 80% of population with access to electricity. (*Karl G. Jechoutek, World Bank, "Energy for Sustainable Development", Kumasi, Ghana, March 24 - April 2, 2000*).
- Overall, population is growing faster than rural electricity access. Business-as-usual implies that by around 2020 excluded population would increase further. Asia and Africa account for about 1.5 billion of excluded population. (*Karl G. Jechoutek, World Bank, "Energy for Sustainable Development", Kumasi, Ghana, March 24 - April 2, 2000*).
- Africa has a share of 14 percent of global population and 3.2 percent of CO₂ emissions.

2. SUSTAINABLE ENERGY

- Africa has significant renewable energy resources: abundant geothermal, biomass, solar and wind potential
- Considerable efforts have been made to make more efficient use of Africa's biomass energy resources, to arrest what was perceived as an 'other' energy crisis in terms of a widening 'wood fuel gap', including :
 - development of improved cook stoves
 - construction of biogas digesters promising clean energy and improved fertilizers;
 - development of charcoal gasifier technology
- The combination of Photovoltaic (PV) system and an energy efficient compact fluorescent bulb is five times more efficient than PV with incandescent bulbs, 100 times more efficient than a kerosene lamp and 500,000 times more efficient than candles. Consequently, it is a superior alternative to both capital-intensive and low-tech options.

3. ENERGY PRODUCTION

- In the world's poorest countries, biomass fuels - firewood, agricultural residues, animal wastes, and charcoal - accounts for up to 90 percent of the energy supply, mostly in traditional or noncommercial forms. (*UNDP, UNDESA, WEC Overview on World Energy Assessment, Energy and the Challenge of Sustainability - 2001*).
- In Africa, almost all countries rely on wood to meet basic energy needs. The share of woodfuels in African primary energy consumption is estimated at 60% to 86%, with the exception of North African countries and South Africa. On average, about 40% of the total

FACTS AND FIGURES

energy requirement in Africa is met by fuelwood. (*Survey of Energy Resources 2001, World Energy Council*)

4. DEFORESTATION AND DESERTIFICATION IN SUB-SAHARAN AFRICA¹

- Deforestation represents now one of the most pressing environmental problems faced by almost all sub-Saharan African nations, and one of the primary causes of deforestation is wood utilization for fuel. Many sub-Saharan countries have had over three quarters of their forest cover depleted, and it is estimated that if current trends continue, many areas, especially that of the Sudano-Sahelian belt, will experience a severe shortage of fuelwood by 2025.
- The harvesting of wood for use as fuel also has contributed to the problem of desertification. Desertification is the term used to describe the loss of soil fertility and structure to the extent that its ability to support plant life is severely compromised. In sub-Saharan Africa, where desertification has its greatest impact, forest areas are often cleared in order to harvest fuelwood and for agricultural use. Traditional farming practices, which tend to be inefficient and land-intensive, significantly degrade scarce arable land -- the single most important natural resource in sub-Saharan Africa.
- Desertification can lead to downstream flooding, reduced water quality and sedimentation in rivers and lakes. It also can lead to dust storms, air pollution and health problems such as respiratory illnesses and allergies.

5. AIR POLLUTION

- About half of the world's *households* use solid fuels (biomass and coal) for cooking and heating in simple devices that produce large amounts of air pollution—pollution that is probably responsible for 4–5 percent of the global burden of disease. (*UNDP, UNDESA, WEC, World Energy Assessment 2001*).
- Indoor exposure to suspended particulate matter increases the risk of acute respiratory infections, one of the leading causes of infant and child mortality in developing countries. In Asia, such exposure accounts for between half and one million excess deaths every year. In sub-Saharan Africa the estimate is 300,000-500,000 excess deaths. (*WHO, Factsheet Air Pollution*).
- Indoor Air Pollution causes an estimated two million excess death per year, or 5% of the global burden of disease (*World Bank*).
- As a cause of death and illness, indoor air pollution is a larger problem than tuberculosis, AIDS, or malaria (*World Bank*).
- Air pollution also causes an estimated four to five million new cases of chronic bronchitis. The economic burden of this pollution is estimated at 0.5 to 2.5 % of the world GNP, some \$ 150-750 billion per year.
- A 3 km dense cloud of pollution over Asia from forest clearing, auto emissions, factories, inefficient biomass burning and waste incineration - cuts the amount of sunlight reaching the ground and the oceans by 10 to 15 per cent, and appears to have altered the region's monsoon rains - increasing rainfall and flooding in Bangladesh, Nepal and northeastern India, while cutting back needed seasonal precipitation in Pakistan and northwestern India. (source: UNEP, August 2002)

¹ 'Sub-Saharan Africa: Environmental Issues', Nov. 2000, *Energy Information Administration (EIA)*.