

THEME 1. UNDERSTANDING SUSTAINABLE DEVELOPMENT

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Content

- Overview about Cambodia
- Sustainable Development
- Millennium Development Goals
- Sustainable Energy Access
- Cambodian achievements on Energy Access and MDGs



Cambodia

- Developing country
- Investment of natural stocks
- A need of conservation approaches in general
- Thus, need a balance Economic development Vs. Natural resources
- Emergency and Sustainable development

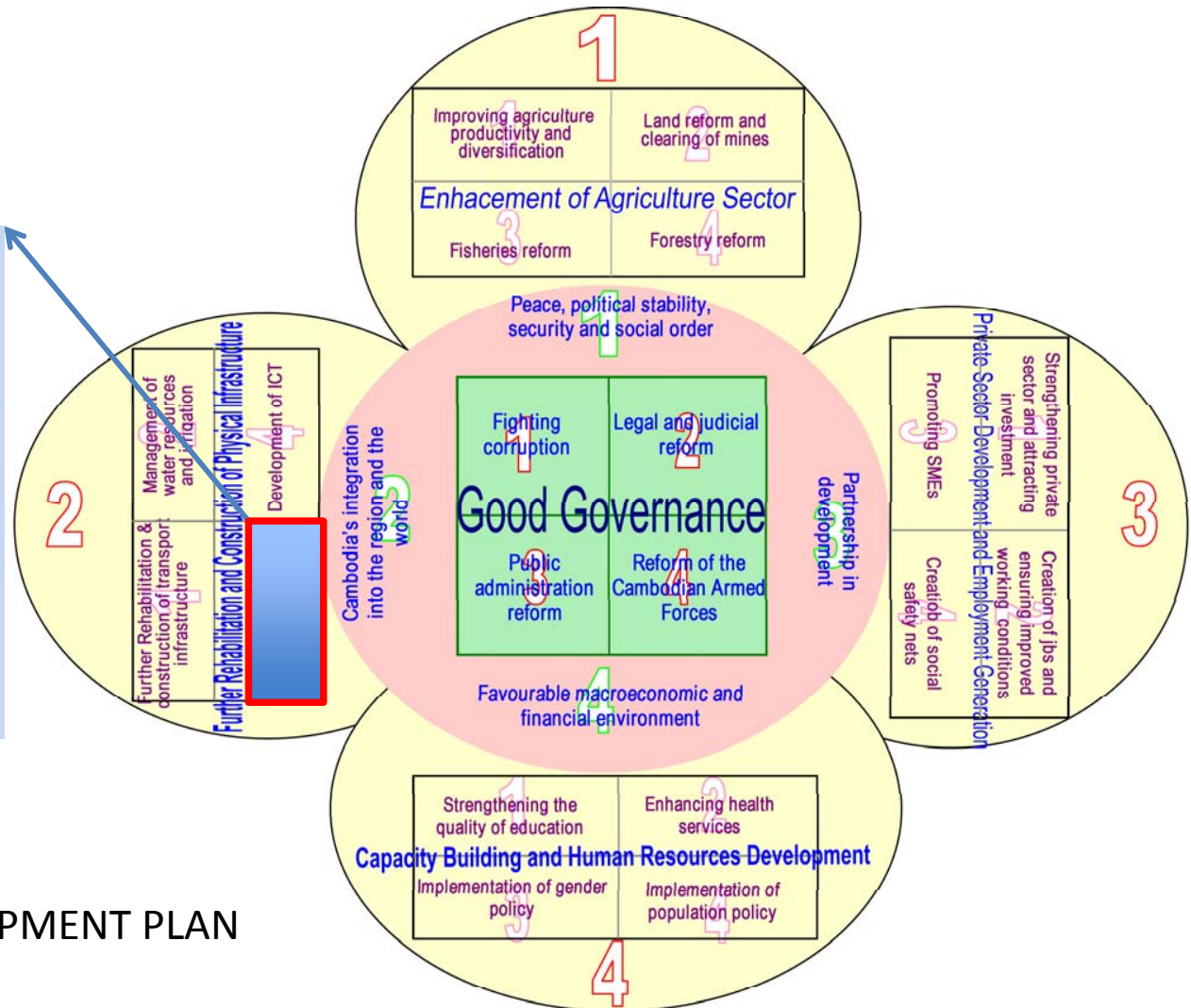
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Cambodia-Con't

DEVELOPMENT OF ENERGY SECTOR AND ELECTRICITY NETWORK:

- Transmission line from the neighboring countries
- Microhydro power plant
- Implementation of rural electrification policy
- Enhance regional cooperation



(NATIONAL STRATEGIC DEVELOPMENT PLAN
UPDATE 2009-2013, 2008)

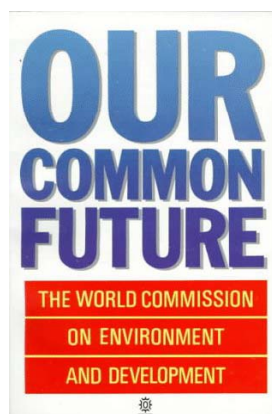
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Sustainable Development (SD)

- Historical responses to SD
- What is SD?
- Principle of SD
- Models of SD
- Characteristic of sustainability
- **Some models toward SD:** Ecological village (Ecological system), eco-business, green economy, eco-tourist
- Group work or Q and A

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Historical Responses to SD



UN Conference on the Human Environment in Stockholm, **1972**

Brundtland commission with a report on our common future, **1987**

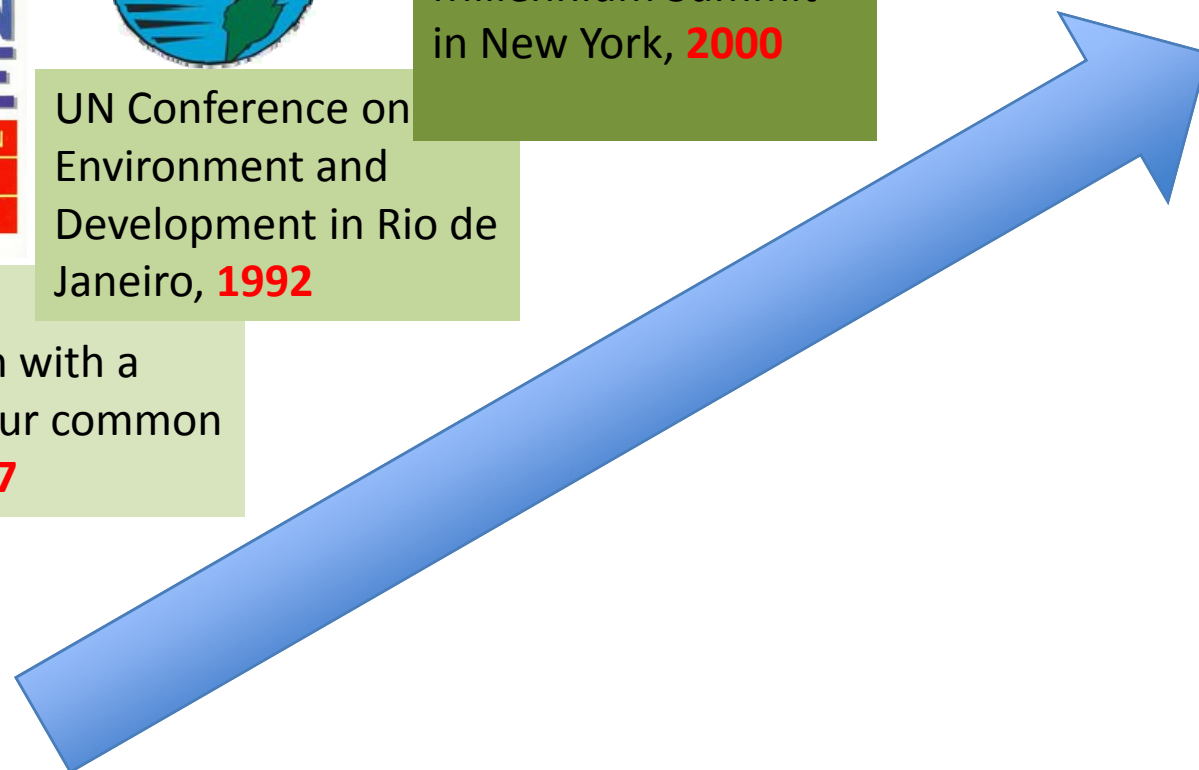


UN Conference on Environment and Development in Rio de Janeiro, **1992**



Millennium Summit in New York, **2000**

UN -Conference on SD in Rio de Janeiro, **2012**



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Historical Responses to SD – Con't

UN Conference on the Human Environment in Stockholm, 1972

1972

1987

1992

2000

2012

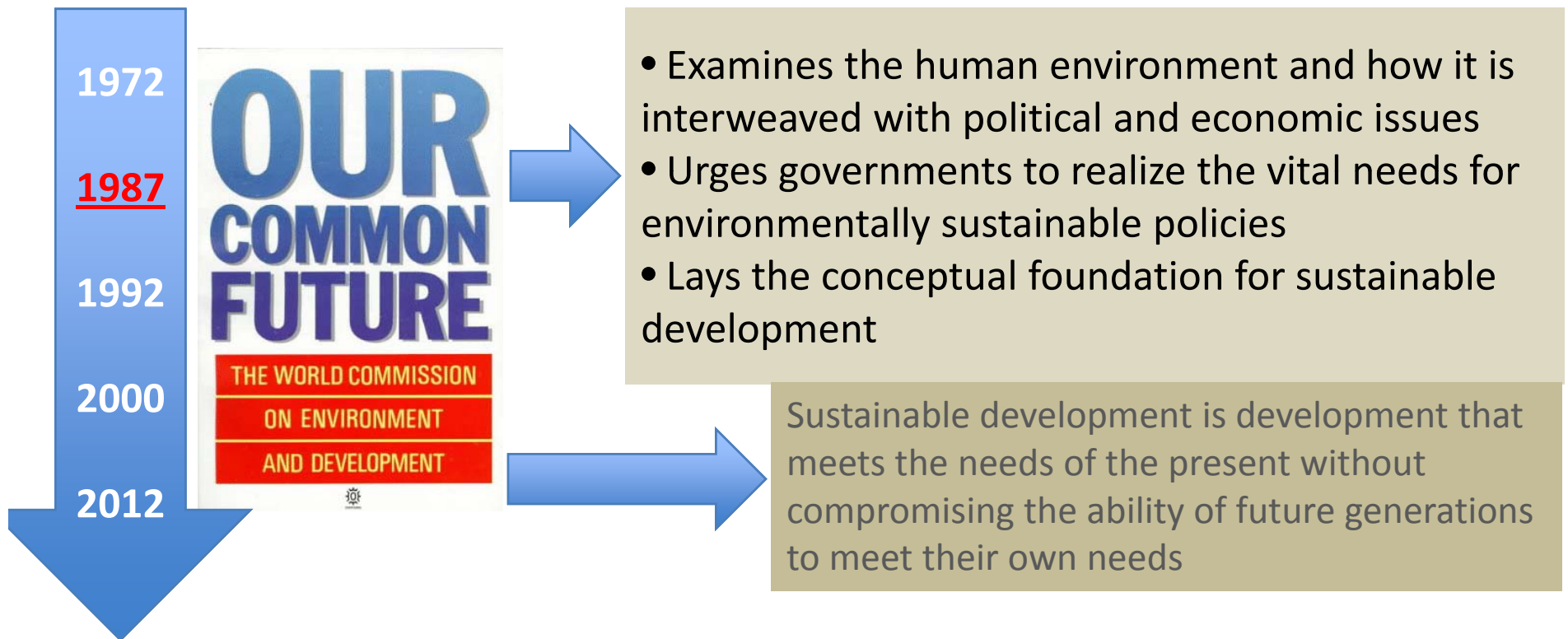
1st conference on Environment with 26 principles adopted: Ex. Principle 1-Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations.



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Historical Responses to SD – Con't

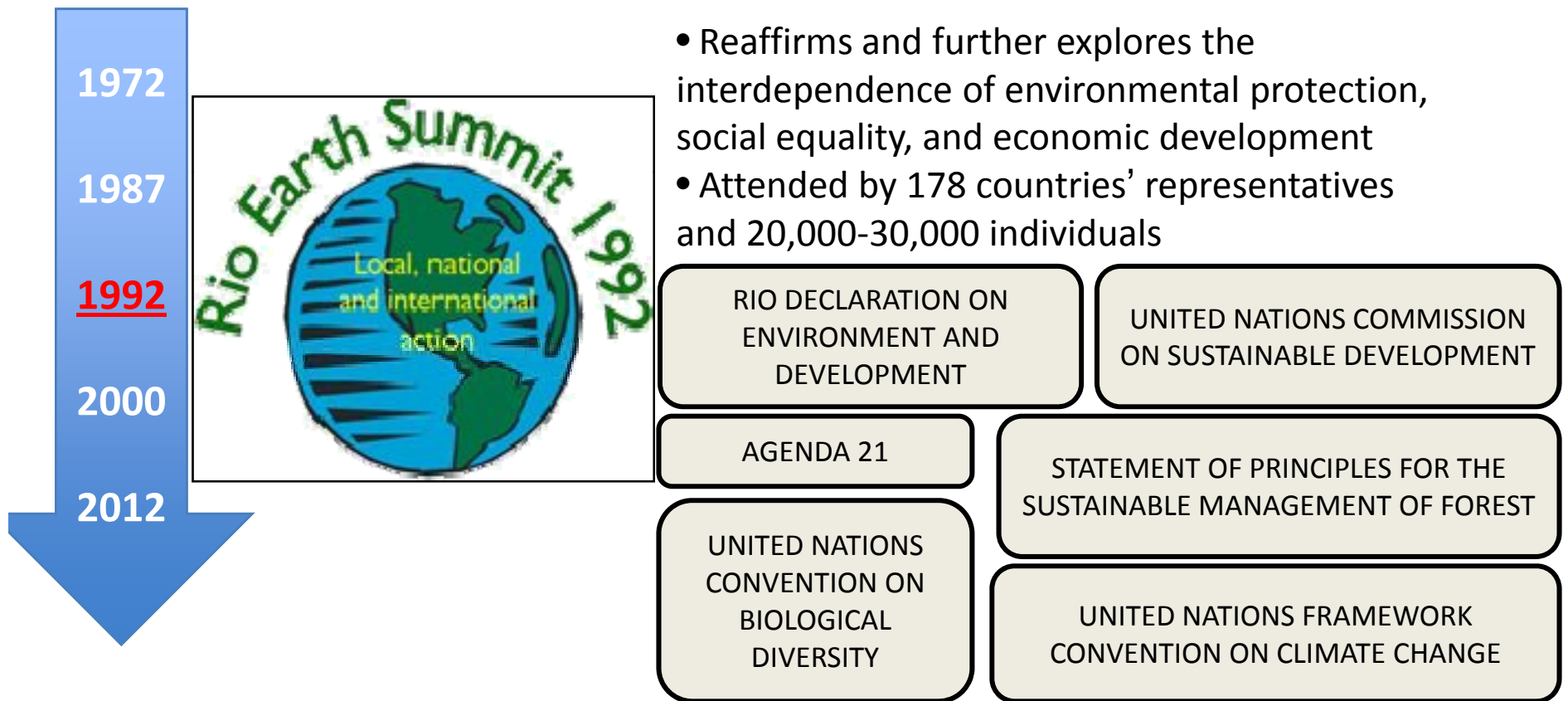
Brundtland Commission with a report on our common future, 1987



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Historical Responses to SD – Con't

UN Conference on Environment and Development in Rio de Janeiro, 1992



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Historical Responses to SD – Con't

AGENDA 21

A blue print for global, national, and local sustainability

Addresses issues of poverty, public health, population, consumption, social equality, biodiversity and pollution

A practical attempt to define the balance between development, social goods, and environmental protection



RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT

A comprehensive declaration of environmental rights and duties

Has many progressive approaches:

Polluters pay principle

Precautionary principle

Principle of common but differentiated responsibilities

Public participation principle

Principle of priority for the least developed

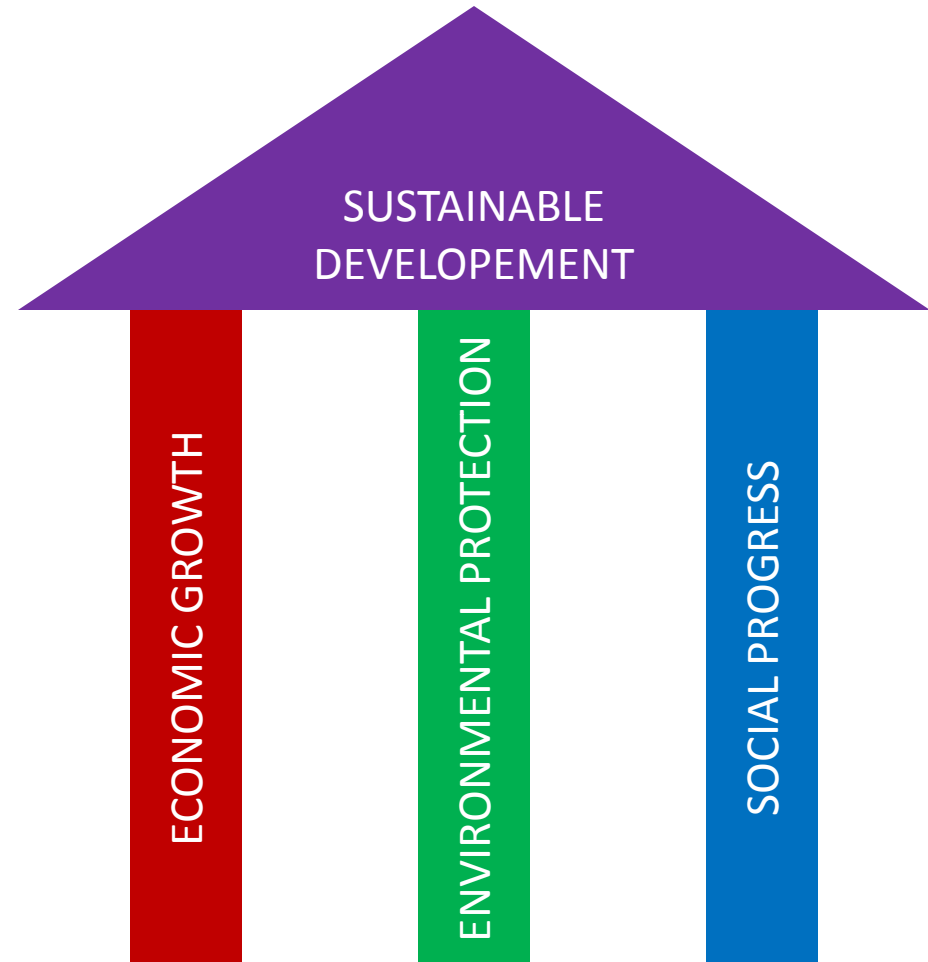
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Historical Responses to SD – Con't

SUSTAINABLE DEVELOPMENT MODELS

Human welfare depends on performance in three dimensions: economic, environmental, social. If any one of these is weak, society is unstable

Downside: the three pillars look separate, implying they are independent of one another



THREE-PILLARS MODEL

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Historical Responses to SD – Con't

Millennium Summit in New York, 2000

1972

1987

1992

2000

2012

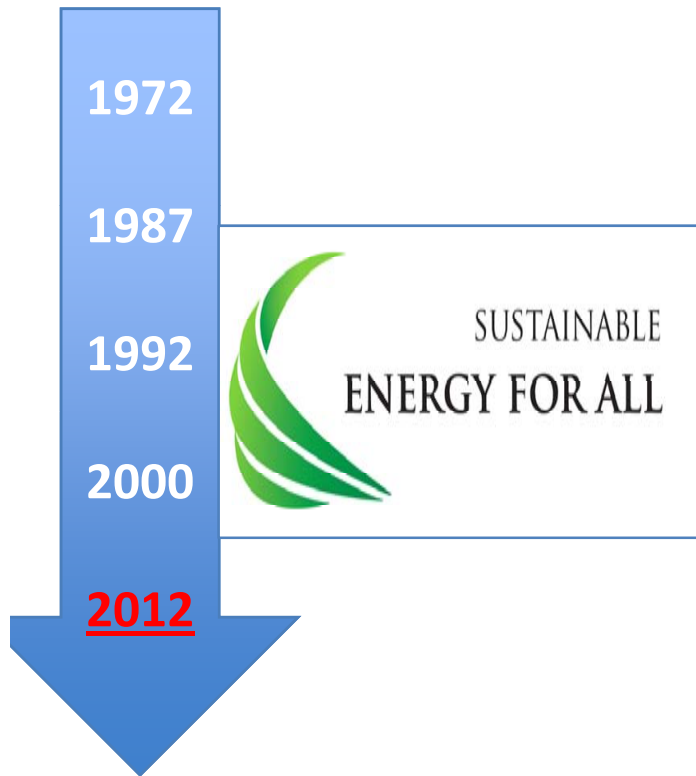


- Attempts to “articulate and affirm an animating vision for the United Nations”
Attended by 150 world leaders and 8000 delegates
- Adopts the Millennium Declaration, which promotes the Millennium Development Goals, originally developed by OECD

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Historical Responses to SD – Con't

UN -Conference on SD in Rio de Janeiro, 2012



- The United Nations Conference on Sustainable Development have took a place in Brazil on 20-22 June 2012 to mark the 20th anniversary of the 1992 United Nations Conference on Environment and Development
- The Conference will focus on two themes: (a) a green economy in the context of sustainable development poverty eradication; and (b) the institutional framework for sustainable development
- The preparations for Rio+20 have highlighted seven areas which need priority attention; these include decent jobs, energy, sustainable cities, food security and sustainable agriculture, water, oceans and disaster readiness.

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What is SD?

- The sustainable development contains 2 key concepts:
 - **Need**
 - **Limitations**
- Sustainable development, as interpreted by the Brundtland Commission, is an anthropocentric (human-centred) concept.
- **Modern definition:** Most definitions refer to the viability of natural resources and ecosystems over time, and to maintenance of human living standards and economic growth.

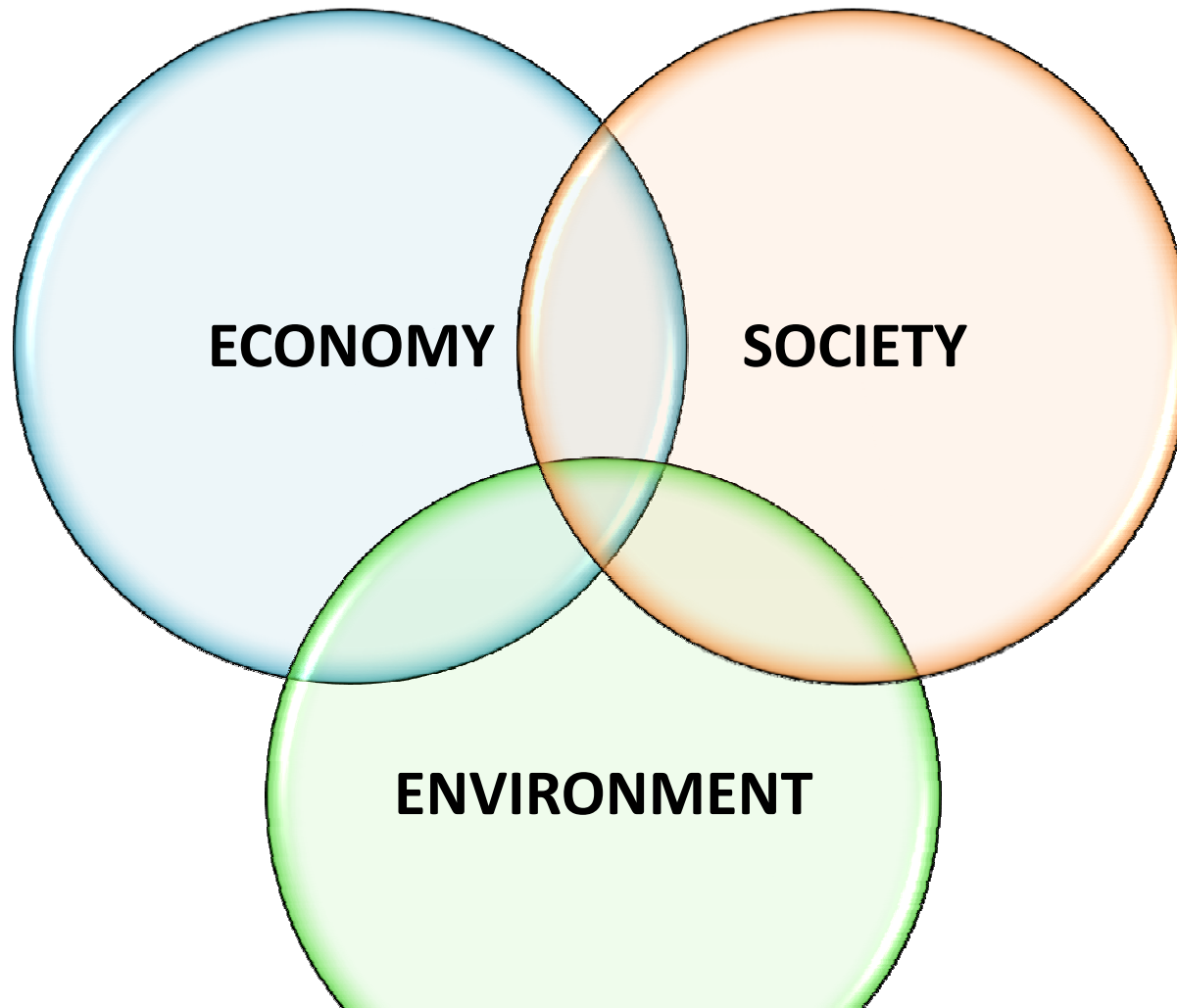
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Principle of SD

- Following the publication of *Our Common Future*, considerable effort has been devoted to developing **guidelines or principles** for **sustainable development**.
- Create of such principles has been **a major challenge** because, as the commission recognized, *economic and social systems and ecological condition* **vary greatly** among countries.
 - **The result of** was that **no genetic model or blueprint could be established**, and each nation would have to work out what was appropriate for its
 - Context
 - Needs
 - Conditions
 - Opportunities

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Model of SD



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Characteristic of sustainability

- Renewability
- Substitution
- Interdependence
- Adaptability
- Individual and Institutional Commitment

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Models: Case study in Cambodia

Some models toward SD: Ecological village (Ecological system), eco-business, green economy, eco-tourist

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Group work: Q and A

- Questions about issues about SD and Energy in Cambodia?
- Discussion and share experiences among students and instructors
- Q and A

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Millennium Development Goals

Millennium Development Goals (MDGs)

- MDGs and its objectives
- 9 MDGs and its criteria
- Group work and Discussion: MDGs Vs. SD

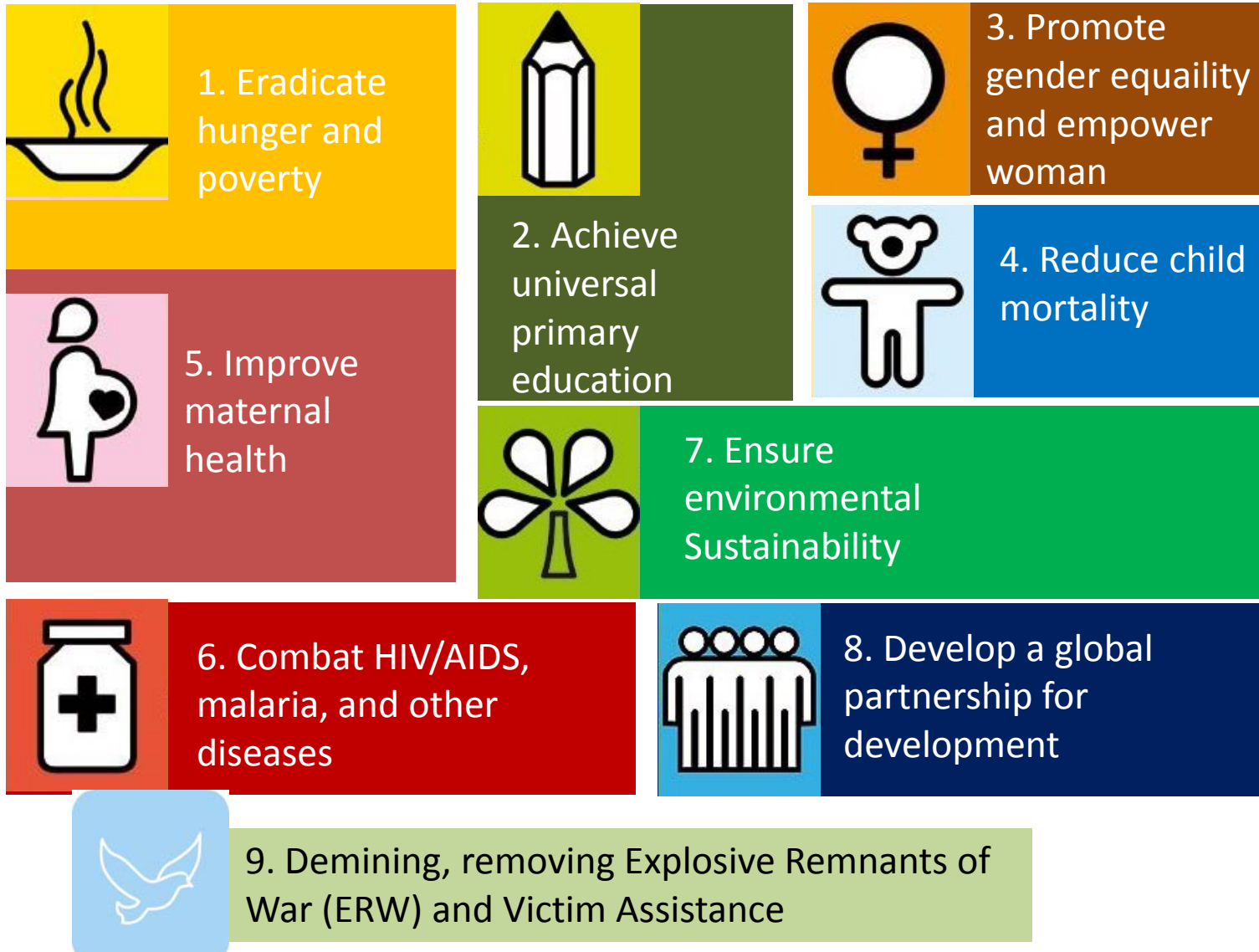
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MDGs and its Objectives

MDGs: it is an agreement of all nation to tackle the issue of a world with less poverty, hunger and disease, greater survival prospects for mothers and their infants, better educated children, equal opportunities for women, and a healthier environment; a world in which developed and developing countries worked in partnership for the betterment of all

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9 MDGs and its criteria



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9 MDGs and its criteria-Con't

Goal 1. Eradicate extreme poverty and hunger

Target 1A: Halve the proportion of people living on less than \$1 a day

Target 1B: Achieve Decent Employment for Women, Men, and Young People

Target 1C: Halve the proportion of people who suffer from hunger

Goal 2. Achieve universal primary education

Target 2A: By 2015, all children can complete a full course of primary schooling, girls and boys

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9 MDGs and its criteria-Con't

Goal 3: Promote gender equality and empower women

Target 3A: Eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015:

- Ratios of girls to boys in primary, secondary and tertiary education;
- Share of women in wage employment in the non-agricultural sector;
- For girls in some regions, education remains elusive;
- Poverty is a major barrier to education, especially among older girls;
- Women are largely relegated to more vulnerable forms of employment;
- Women are over-represented in informal employment, with its lack of benefits and security;
- Women are slowly rising to political power, but mainly when boosted by quotas and other special measures
- ..

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9 MDGs and its criteria-Con't

Goal 4. Reduce child mortality rates

Target 4A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate: Under-five mortality rate; Infant (under 1) mortality rate; Proportion of 1-year-old children immunized against measles

Goal 5. Improve maternal health

Target 5A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio: Maternal mortality ratio; Proportion of births attended by skilled health personnel.

Target 5B: Achieve, by 2015, universal access to reproductive health: Contraceptive prevalence rate; Adolescent birth rate; Antenatal care coverage; Unmet need for family planning.

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9 MDGs and its criteria-Con't

Goal 6. Combat HIV/AIDS, malaria, and other diseases

Target 6A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS: HIV prevalence among population aged 15–24 years; Condom use at last high-risk sex; Proportion of population aged 15–24 years with comprehensive correct knowledge of HIV/AIDS

Target 6B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it: Proportion of population with advanced HIV infection with access to antiretroviral drugs

Target 6C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases: Prevalence and death rates associated with malaria; Proportion of children under 5 sleeping under insecticide-treated bednets; Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs; Incidence, prevalence and death rates associated with tuberculosis; Proportion of tuberculosis cases detected and cured under DOTS (Directly Observed Treatment Short Course)

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9 MDGs and its criteria-Con't

Goal 7. Ensure environmental sustainability

7A: Integrate the principles of sustainable development into country policies and programs; reverse loss of environmental resources

Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss: Proportion of land area covered by forest; CO₂ emissions, total, per capita and per \$1 GDP (PPP); Consumption of ozone-depleting substances; Proportion of fish stocks within safe biological limits; Proportion of total water resources used; Proportion of terrestrial and marine areas protected; Proportion of species threatened with extinction/

Target 7C: Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation (for more information see the entry on water supply): Proportion of population with sustainable access to an improved water source, urban and rural; Proportion of urban population with access to improved sanitation

Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum-dwellers: Proportion of urban population living in slums.

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9 MDGs and its criteria-Con't

Goal 8. Develop a global partnership for development

Target 8B: Address the Special Needs of the Least Developed Countries (LDC):

Target 8C: Address the special needs of landlocked developing countries and small island developing States:

Target 8D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term:

Target 8E: In co-operation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries:

Target 8F: In co-operation with the private sector, make available the benefits of new technologies, especially information and communications: Telephone lines and cellular subscribers per 100 population; Personal computers in use per 100 population; Internet users per 100 Population

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9 MDGs and its criteria-Con't

9. Demining, removing Explosive Remnants of War (ERW) and Victim Assistance

The Royal Government of Cambodia is firmly committed to bridging the gap between global commitments and national progress, and between aggregate national and local development outcomes. Recognizing that one major constraint to development is the continued contamination of mines and explosive remnants of war (ERW), the Government added de-mining, ERW and victim assistance as the ninth major development goal

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Group work or discussion: MDGs Vs. SD

- ☐ Relationship between each criteria of MDGs and SD?
- ☐ How to acquire MDGs objectives ?
- ☐ Economic growth Vs. SD inline with MDGs?

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Sustainable Energy Access

- Energy and Energy access
- Sustainable Energy for all
- Energy Access Vs. MDGs and Perspectives
- Group work or discussion: Energy access Vs. SD

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Energy and Energy Access

- ✧ Energy is central to SD. It affects all aspects of development -- social, economic, and environmental -- including livelihoods, access to water, agricultural productivity, health, population levels, education, and gender-related issues.
- ✧ None of MDGs can be met without major improvement in the quality and quantity of energy services in developing countries like Cambodia.

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Energy and Energy Access-Con't

Energy access = The ability to use energy safely and promptly

- ❖ Health
- ❖ Commination
- ❖ Manufacture
- ❖ Agriculture
- ❖ Lighting
- ❖ Cooking
- ❖ Education

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Energy and Energy Access-Con't

United Nations Data base shows:

- One in five people still lacks access to modern electricity.
- 3 billion people rely on wood, coal, charcoal or animal waster for cooking and heating.
- Energy is the dominant contributor to climate change, accounting for around 60 per cent of total global greenhouse gas emissions.
- Reducing the carbon intensity of energy is a key objective in long-term climate goals.

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Energy and Energy Access-Con't

Energy access indicator



Energy
access

The diagram features a large orange circle on the left containing the text 'Energy access'. To the right of this circle are three horizontal grey bars, each containing a specific indicator. The bars are stacked vertically and connected to the circle by thin lines.

Percentage of households connected to an electrical network

Percentage of people with modern energy for cooking

Percentage of people using mechanical power for
productive and non-industrial use

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Energy and Energy Access-Con't

People without access to modern energy services by region, 2011 (OECD/IEA, 2013)

	Without access to electricity		Traditional use of biomass for cooking*	
	Population	Share of population	Population	Share of population
Developing countries	1 257	23%	2 642	49%
Africa	600	57%	696	67%
Sub-Saharan Africa	599	68%	695	79%
Nigeria	84	52%	122	75%
South Africa	8	15%	6	13%
North Africa	1	1%	1	1%
Developing Asia	615	17%	1 869	51%
India**	306	25%	818	66%
Pakistan	55	31%	112	63%
Indonesia	66	27%	103	42%
China	3	0%	446	33%
Latin America	24	5%	68	15%
Brazil	1	1%	12	6%
Middle East	19	9%	9	4%
World****	1 258	18%	2 642	38%

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SUSTAINABLE
ENERGY FOR ALL

Energy Access for All

From the United Nations Conference on Sustainable Development in Rio, 2012 the program on ENERGY Access for All was launched with 3 objectives:

1. Achieving Universal Energy Access
2. Renewable Energy
3. Energy Efficiency

**SUSTAINABLE
ENERGY IS
POWERING futures.**

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SUSTAINABLE
ENERGY FOR ALL

Energy Access for All-Con't

1. Achieving Universal Energy Access

- United Nations Secretary-General Ban Ki-moon is calling on businesses, governments and civil society to achieve Sustainable Energy for All
- Sustainable Development is Not Possible Without Sustainable Energy-*Energy is the golden thread that connects economic growth, increased social equity, and an environment that allows the world to thrive*
- Access to Energy Drives Growth
- Commitments that benefit all

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SUSTAINABLE
ENERGY FOR ALL

Energy Access for All-Con't

2. Renewable Energy

- Investing in renewable energy creates jobs, fosters economic growth, and improves energy security for countries that lack domestic fossil fuel resources
- UN vision: doubling the share of renewable energy in the global energy mix

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SUSTAINABLE
ENERGY FOR ALL

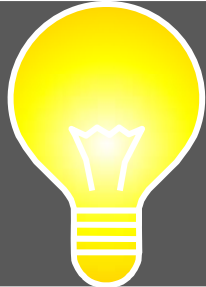
Energy Access for All-Con't

3. Energy Efficiency

- Investing in energy efficiency creates jobs, fosters economic growth, and improves energy security for countries that lack domestic fossil fuel resources
- Energy efficiency—getting more from our limited resources through improved technologies and practices—contributes to more profitable business operations, cheaper and more plentiful energy for households, growing economies for countries, and a cleaner environment

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Energy Access Vs. MDGs and Perspectives



Eradicate extreme poverty and hunger

ACCESS TO MODERN ENERGY

- Provides cheaper and more efficient means to undertake basic household tasks, saving households more time for productive activities
- Power water pumping, providing drinking water
- Power agricultural machinery and irrigation

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Energy Access Vs. MDGs and Perspectives



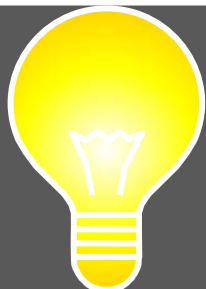
Achieve universal
primary education

ACCESS TO
MODERN
ENERGY

- Reduces children's time gathering firewood, fetching water and cooking, facilitate school attendance
- Facilitates communication and information access
- Provides lighting for studying

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Energy Access Vs. MDGs and Perspectives



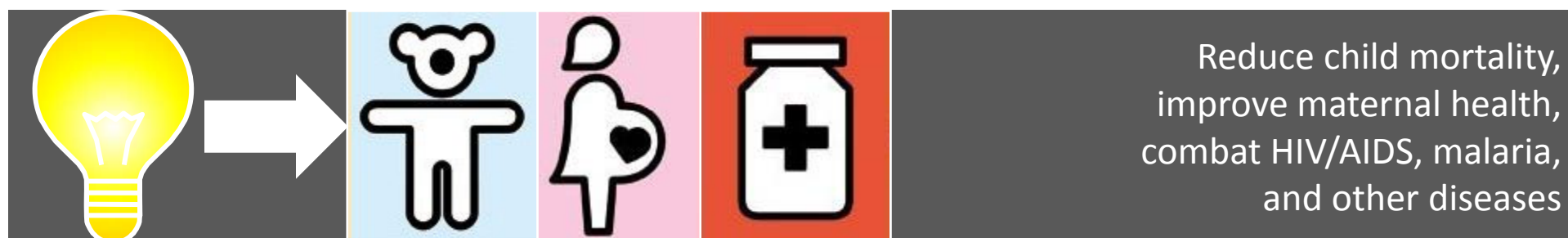
Promote gender equality and empower woman

ACCESS TO
MODERN
ENERGY

- Reduces women's burden associated with gathering wood, giving them more time to seek new employment or education opportunities
- Provides street lighting, makes street safer, thus helps women and girls attend night schools and participate in community activities

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Energy Access Vs. MDGs and Perspectives

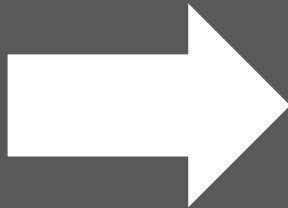


ACCESS TO MODERN ENERGY

- Reduce indoor pollution from burning traditional fuels, lowering the risk of respiratory problems
- Allows households to boil water, helping prevent waterborne diseases
- Powers health care facilities and supports communication and transportation in health emergency

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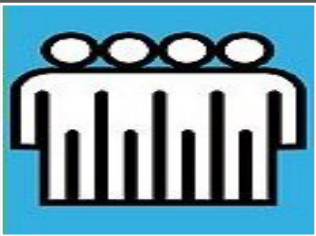
Energy Access Vs. MDGs and Perspectives



Ensure Environmental Sustainability

**ACCESS TO
MODERN
ENERGY**

- Reduces the need for firewood, thus help preventing deforestation, soil degradation and erosion
- By promoting renewable, low-carbon types of energy help mitigate global warming

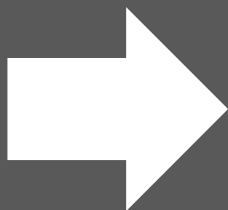
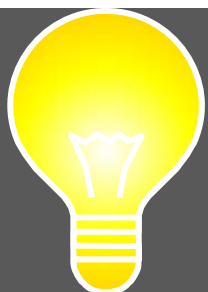


- Facilitates communication and access to information, help integrate individuals and organizations to the global community

Develop a
global partnership and
development

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Energy Access Vs. MDGs and Perspectives



Demining, removing Explosive Remnants of War (ERW) and Victim Assistance

ACCESS TO MODERN ENERGY

- Improvement of socio economic status of mine victims
- Victims assistance framework
- Capacity building of the victims

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Group Discussion:

Energy Access Vs. SD

- How to get SE use and SD together?
- MDGs Vs. Energy access found acceptable for Cambodia Case? How?

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Cambodian Achievements on Energy Access and MDGs

- Current situation of Cambodian Energy issue
- Cambodian MDGs achievements
- Cambodian potential energy sources
- Group work and discussion:



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Current situation of Cambodian Energy issue

General Information:

(IEA, 2008)

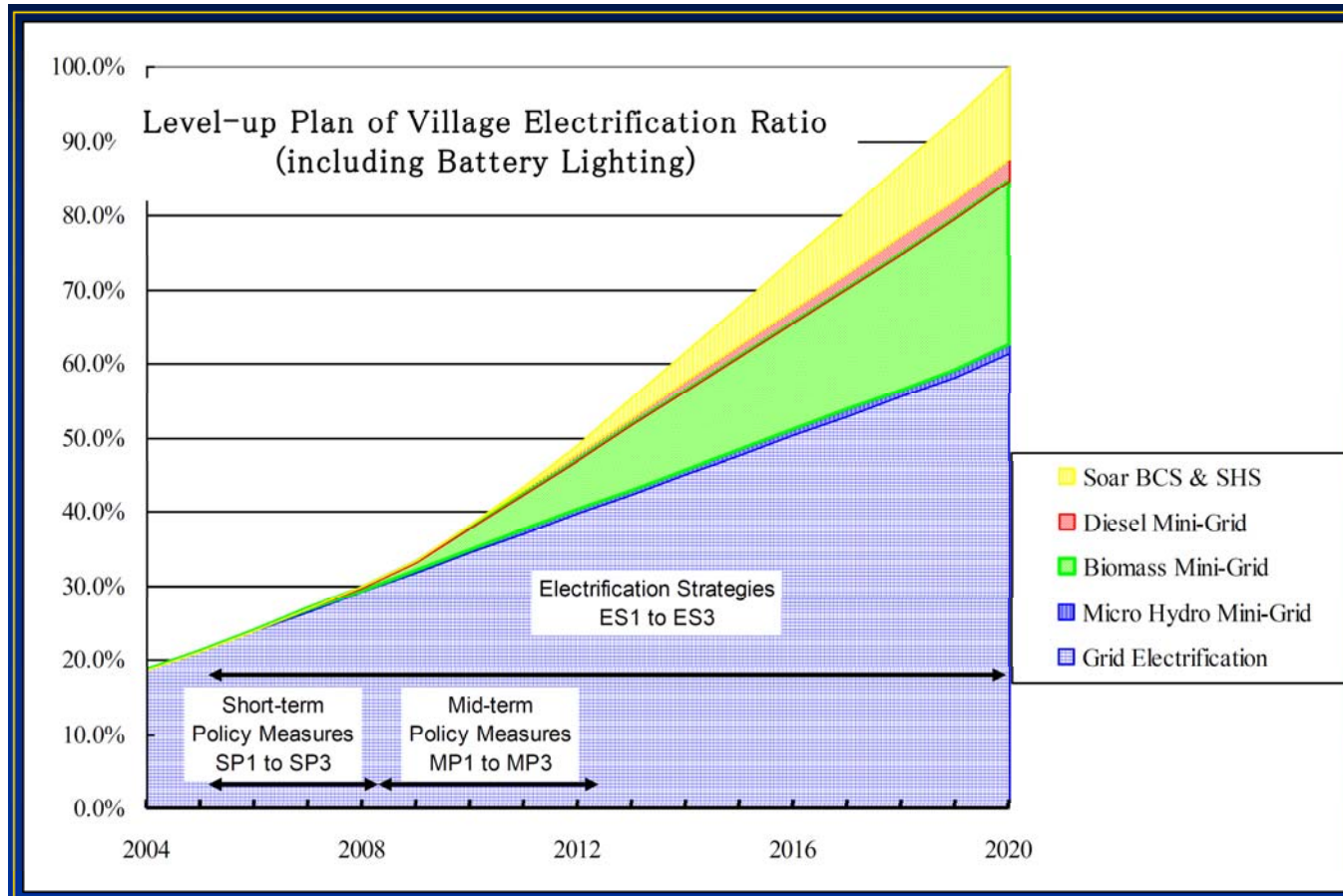
- Increase in electricity supply about 21.5 % (2005-2008)
- Increase in electricity demand about 22.3% (2005-2008)

Access to modern cooking fuels	7.9
urban % HH, 2008	37.3
rural % HH, 2008	1.5
Electricity Access, national % HH, 2010	29.7
urban % HH, 2008	87
rural % HH, 2008	13
No. of people w/o access to electricity (2009) (mil.)	11.3
Population served by off-grid sources (minigrids, HH systems) %	4
Electricity access target	70% of HH in 2030 (100% of villages)

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Current situation of Cambodian Energy issue

Rural electrification of Cambodia



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Current situation of Cambodian Energy issue

Challenges:

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Current situation of Cambodian Energy issue

Perspectives:

- To endeavor to provide access to reliable, safe and environmentally clean electricity
- To act as a market enabler and encourage private sector participation in providing rural renewable electricity services
- To provide effective legal and regulatory framework for enabling access to reliable, safe and clean electricity services
- To develop encourage the most efficient systems for production generation, transmission and distribution of electricity from clean and renewable energy sources, and to promote the development of a sustainable rational electricity tariff policies
- To promote renewable electricity systems for rural applications, and include renewable electricity systems
- To ensure adequate resources and appropriate institutional mechanisms to empower the poor

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Cambodian MDGs Achievement

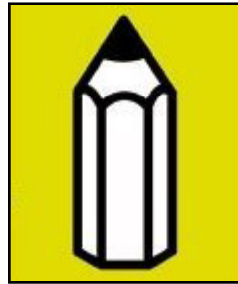
- In 2003, the Royal Government of Cambodia (RGC) adapted the eight universally agreed upon Millennium Development Goals with some modifications and localization
- Due to Civil war consequences: de-mining, Explosive Remnants of War and victim assistance as Cambodia's Ninth Millennium Development Goal

(Ministry of Planning, 2011)





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Cambodian MDGs Achievement



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Cambodian MDGs Achievement

MDGs	Where we are?
<p>1. Eradicate hunger and poverty</p> 	<p>Targets relating to income poverty or food poverty appear to have been already met, or will most likely be met. However, targets related to child nutrition are considerably behind their set target, and the progress on them is also slow. Similarly, child workers are yet many more than what the set target requires</p>
<p>2. Achieve universal primary</p> 	<p>The primary education targets are most likely to be met. Though it is beyond the CMDG purview, the major challenge lies beyond primary education, as human capital needs of the society and economy are multi-faceted.</p>

(Ministry of Planning, 2011)

Overview about Cambodia, Sustainable Development, Millennium Development Goals, Sustainable Energy Access, **Cambodian achievements on Energy Access and MDGs**



Cambodian MDGs Achievement

MDGs	Where we are?
<p>3. Promote gender equality and empower woman</p> 	<p>While a lot has been achieved, there are gaps in education, health and employment requiring bridging. Of particular concern are women's health and their representation in public office</p>
<p>4. Reduce child mortality</p> 	<p>The infant mortality rate, child mortality rate and Mother mortality rate targets have generally been met, though nutrition, women's health and some communicable diseases, along with HIV/AIDS, will require continued vigilance and intervention</p>

(Ministry of Planning, 2011)




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Cambodian MDGs Achievement

MDGs	Where we are?
5. Improve maternal health 	<p>The infant mortality rate, child mortality rate and Mother mortality rate targets have generally been met, though nutrition, women's health and some communicable diseases, along with HIV/AIDS, will require continued vigilance and intervention</p> <p>(Ministry of Planning, 2011)</p>
6. Combat HIV/AIDS, malaria, and other diseases 	

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Cambodian MDGs Achievement

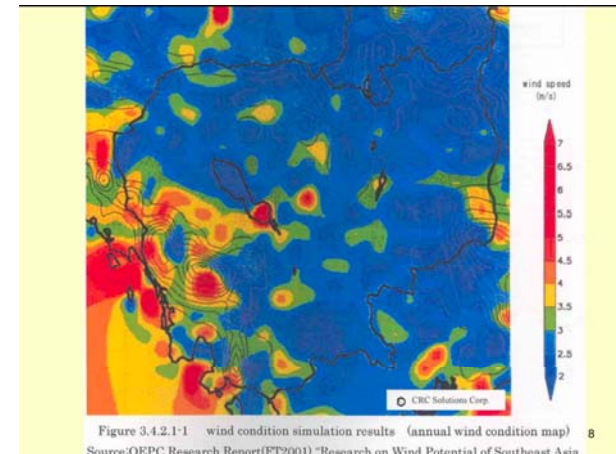
MDGs	Where we are?
7. Ensure environmental Sustainability 	This issue needs address on several fronts, like reforestation, preserving fresh water resources, improving livelihoods of people dependent on natural resources, and governance of forests. Of specific concern is also the non-availability of potable water and hygienic sanitation for the rural people
8. Develop a global partnership for development 	Until so far, the government has been successful in maintaining healthy partnerships. However, this momentum will have to be kept up, given that further concessional in-flows will be more as loans and less as grants.
9. Demining, removing Explosive Remnants of War (ERW) and Victim Assistance 	Area cleared so far has been large, but people are still dying due to mine explosions. Resource shortage is an impediment

(Ministry of Planning, 2011)

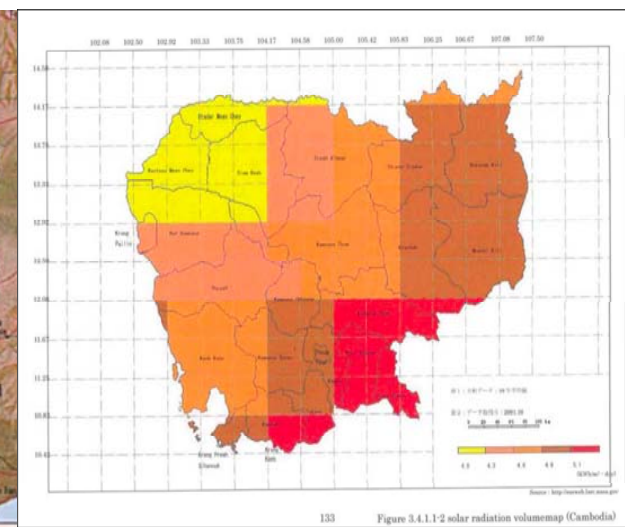
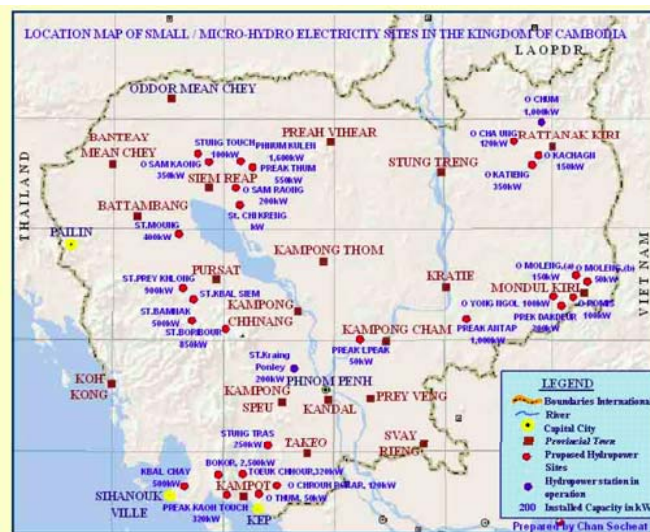
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Cambodian potential Energy sources

- Petroleum & Natural Gas
- Coal
- Hydropower



Renewable Energy (solar, wind, minimicro hydro, wood fuel, biomass, biogas, biofuel etc..)



Thanks very much...