International Conference on Religions and Sustainable Development Goals (SDGs)
Vatican City, 7-9 March 2019

Energy Production and Consumption (SDG7)

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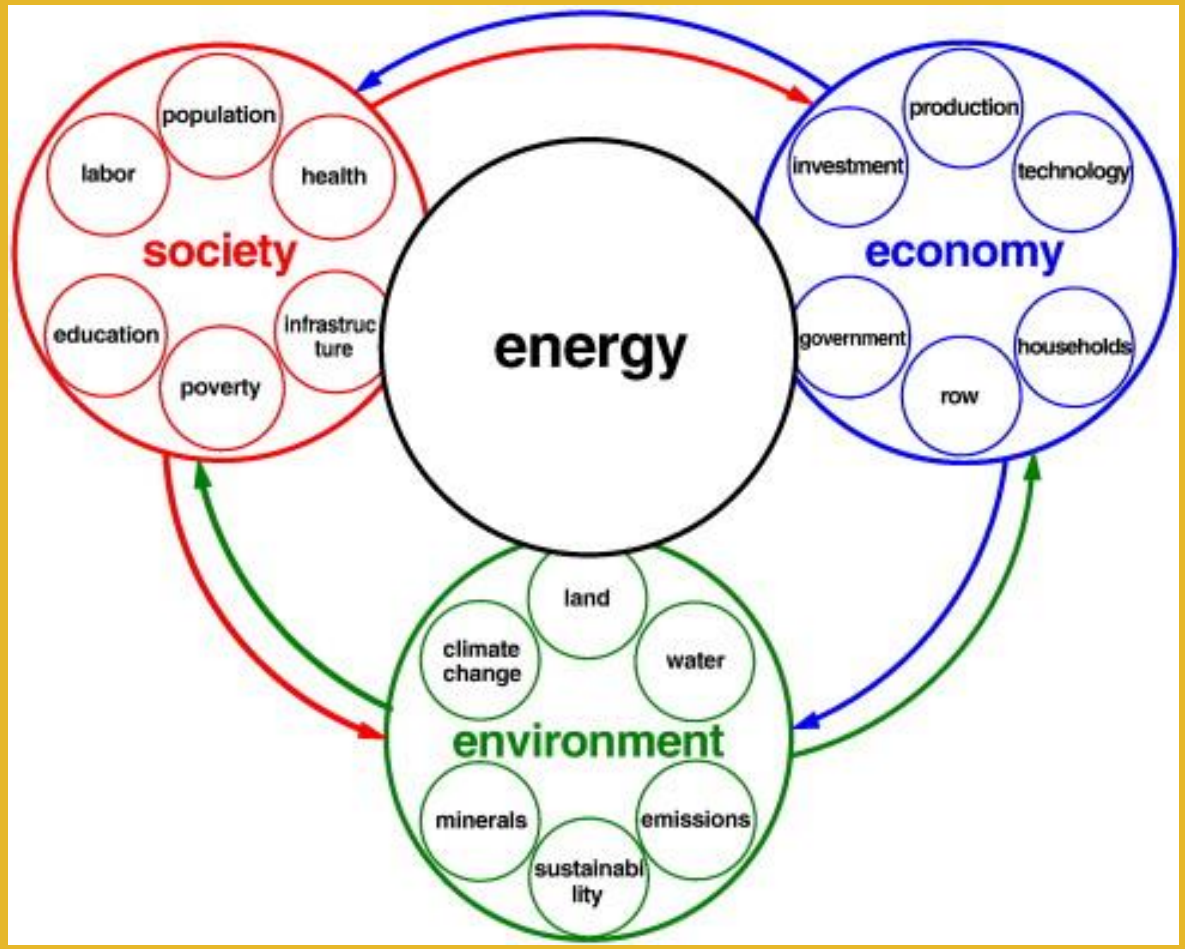
Energy Nexus with the three Dimensions of Sustainable Development

- Energy is a Means rather than an End ….affecting the Social, Economic and Environmental Dimensions of Sustainable Development

- Energy is a key factor for People, Planet, Prosperity and Peace



SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all (by 2030)

Target 7.1 Ensure Universal Access

40% of World Population has no Access to Sustainable Energy

Target 7.2 Increase Renewable Energy

Renewable Energy Share in Final Consumption only 18% and in Electricity 23%

Two-thirds of GHG emissions are from the global energy sector

Target 7.3 Double energy efficiency

Energy efficiency improvements still too slow (only 2.2% intensity reduction)

Many countries implementing energy efficiency programs

Target 7.a Enhance international cooperation and promote investment

Target 7.b Expand infrastructure and upgrade technology

Progress Towards Achieving SDG 7 by 2030

- ✓ **PROGRESS HAS BEEN MADE …..BUT MUCH MORE IS NECESSARY**
- ✓ **None of the Energy Targets of the SDG7 will be met by 2030 if the current trends continue**

ACCESS TO SUSTAINABLE ENERGY

Key to Eradicating Poverty (SDG1)

- 3 billion depend on solid unsustainable biomass for cooking
- 1 billion people without electricity
- Over 80% live in rural areas
- Largest shares in Sub-Saharan Africa and Developing Asia

Major Challenge: Ending Energy Poverty, SDG1

Lack of sustainable energy correlates with high infant mortality, illiteracy, and with low life expectancy

Energy Production and Consumption and Per Capita Energy Use

1. Inequity in electricity use on a per capita basis

Data: 2016 IEA Atlas of Energy

2. Sustainable Production and Consumption

- Behavioral change in the developed countries as to become more efficient in consumption of energy as reflected on a per capita basis

3. Need to increase access in developing countries to satisfy minimum requirements

- Technology transfer and international cooperation to allow more access to clean energy in developing countries

Per capita Electricity Use

Country	KWh/person
• USA	12,830
• S.Korea	10,620
• Australia	9,910
• France	7,150
• Pakistan	500
• Ghana	360
• Bangladesh	350
• Angola	320
• Nigeria	140

Sustainable Energy and Health

- **4 million premature deaths** per year due to **indoor air pollution** -- more than Malaria, HIV/AIDS, and Tuberculosis combined

Sustainable Energy and Health

- Many clinics in developing countries without electricity
- Impossible to keep medications, vaccines, milk, etc.
- Many children are born at night
- New Efforts to provide renewable energy to isolated clinics in rural areas

Sustainable Energy and Education

- Worldwide about 30% of students in primary education attend schools without electricity

Energy, Water, Agriculture and Food Security

- Solar Photovoltaic technology could support farms
- Solar energy allows to pump water for irrigation
- Renewable energy supporting the production of food

Energy and Women's Empowerment (SDG5 Gender, SDG8 Economic growth)

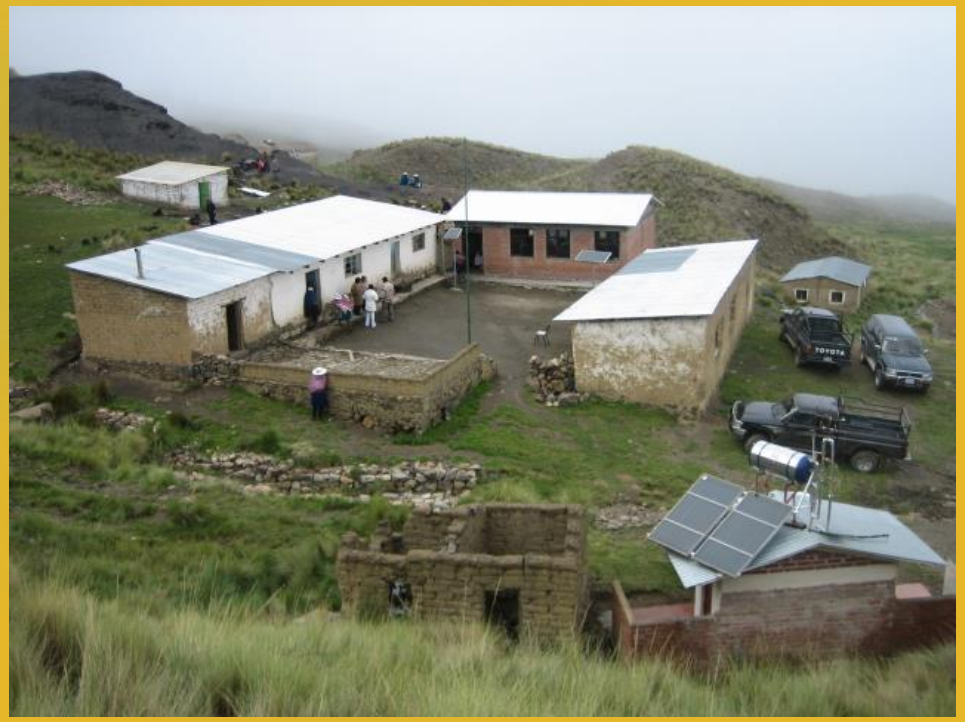
- Women spend many hours looking for wood to use as fuel
- Renewable energy could empower women
- Enhancing the well-being of families
- Promoting economic growth

A Holistic / integrated Approach to the Sustainable Development Goals

- **To accomplish the Sustainable Development Goals, integrated and holistic approaches are needed to**:
  - ✓ Take advantage of synergies
  - ✓ Allow for efficient solutions
  - ✓ Avoid negative unintended consequences when sectoral approaches alone are used
  - ✓ Assess competing alternatives for development (trade-offs)

Example of Nexus Approach to Energy Access
School in Rural Community of Bolivia

School of Totora, rural area in the Andean Mountains
In the Province of Tiquipaya
In Bolivia, South America



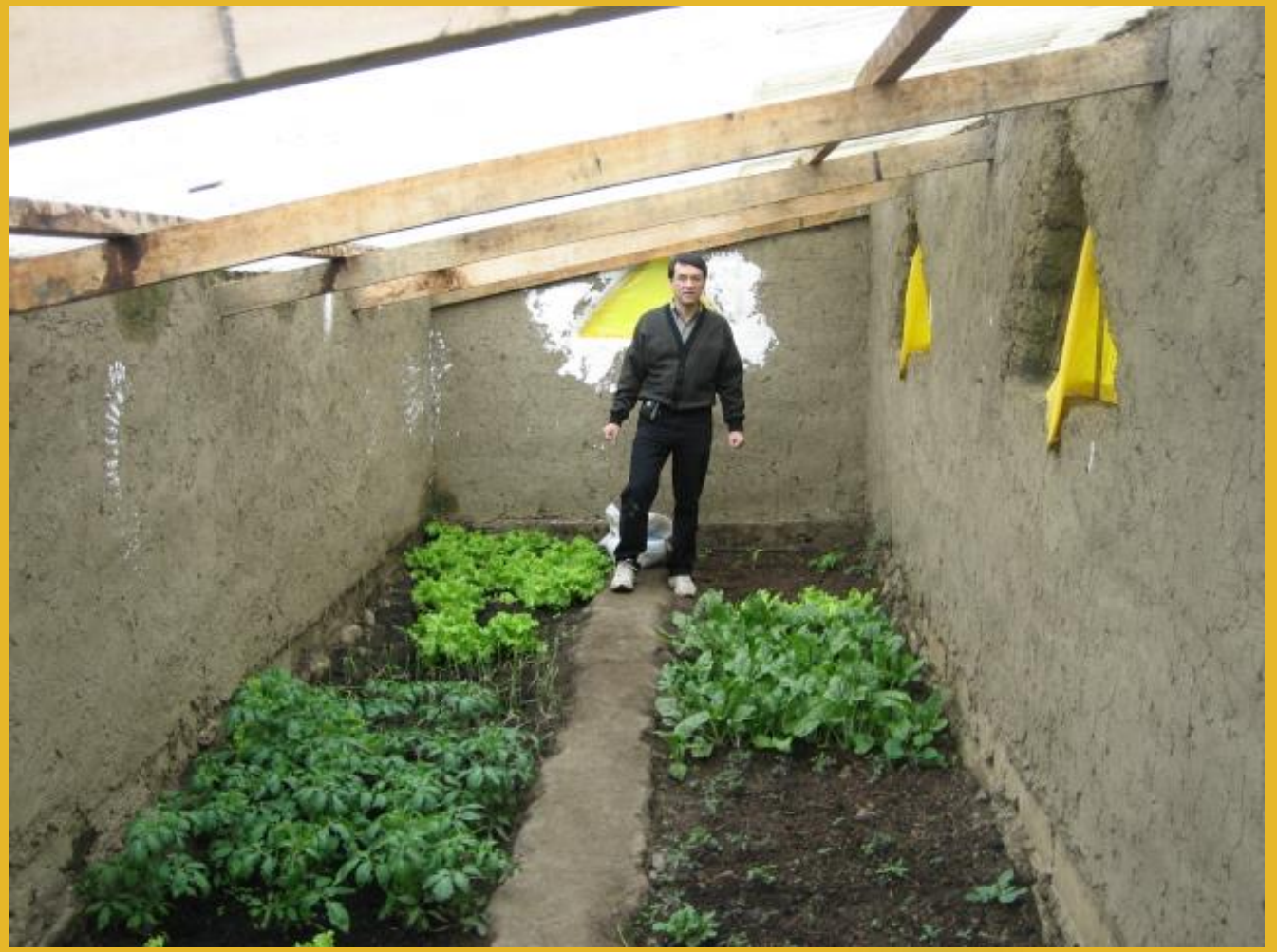
Solar System for Water Heating

- Over 5,000 mts altitude, very cold water
- Solar System for water heating
- Hot water for hand washing
- And for showers

Synergies: Nexus of Energy, Health, Food Security School in Rural Community of Bolivia

- Efficient fuelwood stove
- With chimney to avoid indoor pollution

Synergies on Energy, Education, Water, Health, Gender, Agriculture/Food Security, & Poverty



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Thank You For Your Attention!

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