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Group of Twenty

Enabling access to reliable energy in Low Income Developing Countries (LIDCs)

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Forum:	Group of Twenty
Issue:	Enabling access to reliable energy in Low Income Developing Countries (LIDCs)
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Introduction

Access to reliable energy is of vital importance at this day and age. That being said, in some LIDCs, such as in Liberia, the access rate to electricity can be as low as 4,1% by the general population. The World Bank defines LIDCs as countries with a Gross National Income per capita of less than $1,026.

Access to reliable energy can prove vital under many conditions. “For those living in extreme poverty, a lack of access to energy services dramatically affects and undermines health, limits opportunities for education and development, and can reduce a family's potential to rise up out of poverty. The problem of energy access for the poor has become even more acute because of the increased vulnerability brought about by climate change, the global financial crisis and volatile energy prices.”

According to 2013 statistics by the WorldBank, approximately 850 million people live in low-income conditions, with 30% of them living in rural areas. All of the LIDCs combined have a GDP of only 629 billion US Dollars. For some perspective, USA alone has a GDP of 16.77 *trillion* dollars, and has a population of around 350 million. The poverty level is the main factor that affects the accessibility of reliable energy sources. The lacking infrastructure makes it especially unaffordable for the people living in LIDCs to access reliable energy sources. In developing countries alone, 1.5 billion people do not have access to electricity. The fact that reliable energy sources aren’t accessible can even be life risking due to the toxic nature of some alternative energy sources, which will be outlined below.

Definition of Key Terms

LIDC

Low Income Developing Countries: Countries with a Gross National Income per capita of less than $1,026.

Gross Domestic Product (GDP)

Gross Domestic Product: The monetary value of all goods and services produced within a nation's geographic borders over a specified period of time.

Millennium Development Goals (MDG)

The MDG's are eight international development goals. While the goals don't directly address our issue at hand, many branches of the Millennium Summit have submitted reports on reliable energy access.

Extreme Poverty

Extreme poverty, or absolute poverty, was originally defined by the United Nations in 1995 as "a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services." Currently, extreme poverty widely refers to earning below the international poverty line of $1.25/day (in 2005 prices), set by the World Bank. This measure is the equivalent to earning $1.00 a day in 1996 US prices, hence the widely used expression, living on "less than a dollar a day." The vast majority of those in extreme poverty – 96% – reside in South Asia, Sub-Saharan Africa, The West Indies, East Asia and the Pacific; nearly half live in India and China alone.

More Economically Developed Countries (MEDCs)

Similarly, these are countries that are more economically developed. Again, these are countries that are relatively wealthier. An example could be Denmark, USA, Japan etc.

General Overview

Access to reliable energy, as explained in the introduction, is a significant issue, particularly in LIDCs. Energy sources include, but are not limited to: natural gas, petroleum, methanol, and most importantly electricity, which can be reliably produced by winder energy, water turbine etc. The reason why electricity is arguably the most important energy source that should be open to be accessed by everyone is because it is capable of powering the most essential things in our life. Illumination, heating, communication devices etc. are all

powered by electricity. However, the use of electricity can be less efficient and therefore more expensive in certain categories, for which electricity isn't widely used. To name a few, powering a vehicle, temperature adjustment devices etc. mostly use natural gas and oil because of their high thermal conductivity and significant release of energy during combustion. It is important to outline the difference between energy sources, since building the infrastructure for access to reliable energy means there has to be certain realistic priorities, the decision as to how and which specific energy resource will be most effectively provided will be a decision made by the delegates.

Access to electricity

Access to reliable energy is a bigger issue in developing countries, more so in LIDCs.

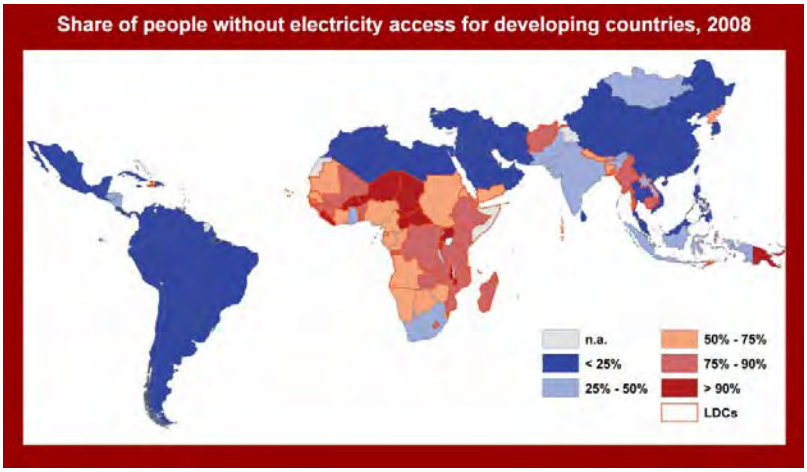

Figure 1 Electricity access for developing countries. Digital image. UNDP. N.p., n.d. Web. 20 Aug. 2015. <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Sustainable%20Energy/energy-access-situation-in-developing-countries.pdf>.

As we can see from the diagram to the right, some developing countries can have a lack of access to electricity that affects more than 90% of the population. While developing countries that are making significant industrial progress, such as China and Brazil, are doing relatively well, the LIDCs such as Niger and Chad are able to provide stable electricity to less than 10% of their population. "Modern energy services are crucial to human well-being and to a country's economic development; and yet globally over 1.3 billion people are without access to electricity and 2.6 billion people are without clean cooking facilities. More than 95% of these people are either in sub-Saharan African or developing Asia and 84% are in rural areas."

As mentioned before, serious infrastructure is required to provide electricity, especially to the rural areas of countries. At this point, it may not be a realistic attempt to force all the governments to build the infrastructure to provide electricity. LIDCs, as their name suggests, are the poorest of the poor countries, and more often than not the governments are corrupt due to poverty and even if that isn't the case, most LIDCs do not have the funds for such large scale projects.

Access to modern fuels

Modern fuels include gas and most importantly kerosene, aside from electricity.

The map to the right displays a critical situation. While access to electricity is indeed in a bad state overall, the access to modern fuels in general is worse, and especially affects the mid-African countries but also East Asian ones.

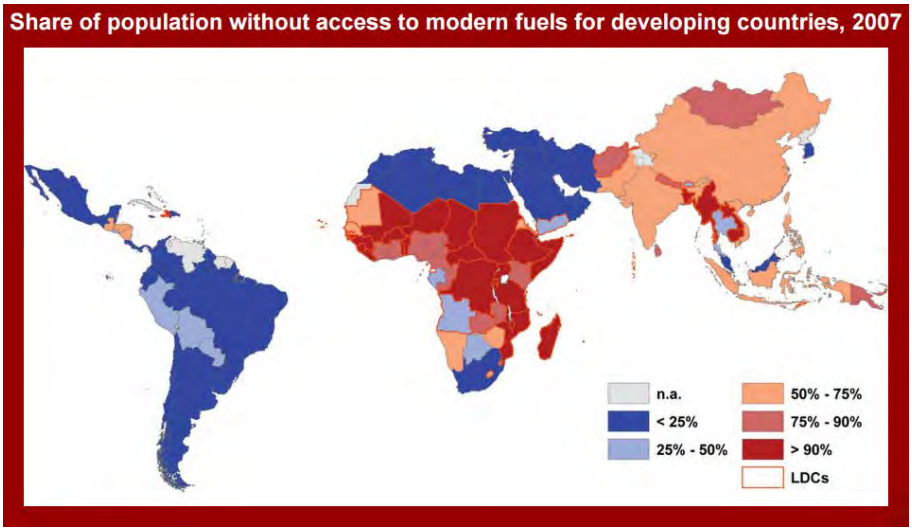

Figure 2 Modern fuel access for developing countries. Digital image. UNDP. N.p., n.d. Web. 20 Aug. 2015. <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Sustainable%20Energy/energy-access-situation-in-developing-countries.pdf>.

For this reason, solid energy sources that occur naturally in the nature and are easier to access are widely used. One such energy source is wood, which has the biggest share of usage in developing countries. Usage of wood is not necessarily a bad thing and doesn't have many negative consequences aside from potential deforestation; however it is a very primitive energy source and is not able to satisfy most of the energy needs of humans. 42% of the population in developing countries uses wood as their primary fuel for cooking food. Certain tree types carry toxic chemicals when burned, and without proper information, it may potentially be poisonous for humans when used to cook wood. For example, Ficus trees carry toxic chemicals and even though are not very commonly used as it is rare to be found, they is still dangerous for humans.

Other solid fuels are often used as well, such as coal, and can be potentially very dangerous.

Dangers of solid fuels

In developing countries, the indoor smoke of solid fuels cause almost 2 million premature deaths every year. 44% of the deaths are from pneumonia in children under 5 years 54% from chronic obstructive pulmonary diseases (COPD) in adults 2% from Alung cancer in adults (as a result of coal use), all these statistics being derived from the World Health Organization. The lack of reliable energy is forcing people to

use such solid fuels which, as can be said with information provided above, cause a lot of harm. It is important to note that globally, women are more affected than men.

Progress

There has been significant progress in the accessibility of reliable energy resources, and many LIDCs have set goals to be met in the future. Electricity access rates have risen from 20%s since the 2000's up to 60%s in the present. While, of course, these are huge steps in the right direction, the issue remains. Especially with the rural populations decreasing, the rate of access to reliable energy sources is expected to rise in the upcoming years. All countries that follow the Millennium Development Goals are expected to meet certain standards of giving people access to modern fuels and for the MDG to be completely met, 1.9 billion additional people need to be provided access to modern fuels.

Why this issue is beneficial to resolve

- Modern fuels reduce time spent collecting fuel (such as firewood) and increase time for income-generating activities.
- Improved lighting reduces expenditure and boosts productivity.
- Refrigeration reduces food and crop waste.
- Lighting allows children to study at night.
- Energy access can help rural schools to attract teachers.
- Improved cooking facilities free-up time spent collecting wood, for education.
- Electricity allows use of Information Technologies in education, and access to Internet.
- Access to modern fuels lifts the burden on women and girls allowing more time to gain an education or earn a living.
- Reduction of smoke inhalation and household heating can improve child health and save lives.
- Health services are improved through lighting, heating and refrigeration.
- Improved lighting reduces deaths and injury from burns and fires.
- Modern fuels for cooking help improve health status of pregnant women and mothers.
- Lighting, heating and refrigeration improve health services and reduce childbirth complications.
- Health and well-being is improved, especially for women, through access to modern fuels.

- Access to clean fuels reduces deforestation.
- Improved cook-stoves reduce greenhouse gas emissions.
- Information exchange and dialogue is improved through access to communications and Information Technologies.

Major Parties Involved and Their Views

UNDP (United Nations Development Programme)

The United Nations Development Programme is the United Nations' global development network, and aside from its main focuses, it also helps countries achieve the Millennium Development Goals. Due to the fact that this issue isn't exactly controversial per se, in the sense that the goal remains the same for all countries which is enabling access to reliable energy, the view doesn't differ with the UNDP either. The UNDP believes that "Policies and national programs must be drastically enhanced to tackle in any significant way energy poverty." which means that the UNDP recognizes this issue as one that needs urgent solving with drastic measures.

International Energy Agency (IEA)

The International Energy Agency is an intergovernmental organization which was initially dedicated to responding to physical disruptions of oil and provides statistics about other energy sectors. The IEA isn't an activist organization and does not aim to solve the issue of lack of access to reliable energy sources, but provides us with a good outlook of the situation of the energy sectors and what we need to pursue to solve the issue.

United Nations Foundation

The United Nations Foundation was launched in 1998, attempting to solve issues of child health, climate change and energy, sustainable development, technology and supporting the United Nations. One of the aims of the United Nations Foundation is to achieve universal and sustainable energy access.

Timeline of Events

The issue is one that didn't just appear out of nowhere, but much like global warming, is an issue that was progressively formed. The Millennium Development Goals was set in the 90's and the aim was to achieve the goals by 2015. While it has been partially successful, the issue at hand has not been solved, but there has been progress. There hasn't been any particular event to be mapped, but rather many countries setting goals to provide reliable access to energy for as many people as possible. Other than that, significant dates to be mentioned are:

Date	Description of event
1965	United Nations Development Programme formed
1974	International Energy Agency founded
1990	Human Development Index established
1998	United Nations Foundation launched

UN involvement, Relevant Resolutions, Treaties and Events

- UN Millennium Declaration, September 2000.
- Resolution: Promotion of new and renewable sources of energy, 20 March 2013. General Assembly.

Evaluation of Previous Attempts to Resolve the Issue

Building the necessary infrastructure to provide reliable energy sources is of course one of the main issues to be resolved. That being said, there have been many attempts to overcome that issue in different ways. Renewable energy sources such as the usage of solar panels are able to provide electricity to households on its own without any need of complex infrastructure and constant provision by the government on rural areas. The setback is that solar panels are very expensive and at this point of time, it is simply unrealistic to provide solar panels to billions of people.

Possible Solutions

As mentioned previously, poverty is one of the main reasons of why this issue exists. Most countries don't have the necessary funds to provide all areas with reliable energy access. As a solution, the WB, IMF and other organizations alike could lend money to LIDCs with the sole purpose of enabling access to reliable energy sources to as many people as possible. This, however, means billions and maybe even trillions in spending and to what extent will the countries be able to pay that money back is an issue. In MUN, it is assumed that the UN has unlimited funds, therefore unless the financial matters are examined closely, it is possible to suggest the UN to fund LIDCs to solve this issue.

It must also be addressed that MEDCs have the potential to help many LIDCs with this issue. That being said, countries that have been previously colonized and are in the midst of areas where this issue is the most significant (Morocco, South Africa etc.) display much lower levels of inability to access energy sources compared to their neighboring countries. With one or two exceptions, the few countries with still existing colonized lands appear to be able to provide those lands with good levels of energy access (such as the Dutch Caribbean). Regardless of the countries' status, MEDCs could in a sense partner up with LIDCs to enable sustainable energy access to LIDCs.

One other possible solution is to improve on the previous attempt. Of course, it is still unrealistic to provide everyone with self-sufficient energy providing technology. But the production of such technology can be made a lot more effective and cheaper, provided that the UN and its sub-branches are able to collaborate. To what extent is it realistic to solve the issue by focusing our research on coming up with cheaper technology is one that must be considered by the delegates.

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Appendices

Appendix I

The UNDP Reports on energy access in developing countries:

http://content.undp.org/go/newsroom/publications/environment-energy/www-ee-library/sustainable-energy/undp-who-report-on-energy-access-in-developing-countries-review-of-ldcs---ssas.en

Appendix II

A short IMF Report on LIDCs:

http://www.imf.org/external/np/pp/eng/2014/060314.pdf

Appendix III

Energy Services for the Millennium Development Goals: