

ACCESS TO ENERGY: THE KEY TO POVERTY ALLEVIATION

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ABSTRACT

The relation between access to energy and indicators of development is well-established. It is predicted that access to energy will become an acute problem in developing countries in the near future, mainly under the impact of population growth and the rising cost of fuels. Reliance on non-fossil fuels is also expected to increase significantly. Hence, developing ways of managing energy in order to promote access to energy for the most vulnerable sections of the population is a necessity.

This paper analyses the examples of three SIDS with different characteristics: Mauritius, Seychelles and the Comoros Islands. Three distinct methodologies are proposed for alleviation poverty, and promoting development in general, for the different types of economies and social set-up that these three SIDS represent.

Recommendations of a regional nature as well as avenues of international cooperation are also discussed. The ultimate outcome is to provided different SIDS with effective models of sustainable development for all, including the most vulnerable groups.

KEYWORDS: Energy, Development, Poverty, SIDS

Relationship between access to energy and development

The annual energy consumption in Africa and in India is less than 0.7 toe per inhabitant. This is 10 times less than the corresponding figure for North America and 7 times less than that for Western Europe. The poorest 2 billion inhabitants of our world consume even less, that is less than 0.2 toe yearly for each person. As far as electricity is concerned, the developing countries together consume less than 10% of the energy demand in the industrialised world. In fact, 99% of the people with no access to electricity are in the developing countries amounting to a total of more than 1.6 billion people or one quarter of the world population. Some 2.4 billion people rely on traditional biomass for cooking and heating purposes in developing countries. In sub-Saharan Africa and in Indonesia, about 90% and 75% of the population respectively are in such a condition (Fall, 2004; IEA, 2002).

By 2030, the situation is not likely to improve significantly even according to the most favourable scenario. It is expected that at least 1.4 billion people will lack electricity and 2.6 billion people will rely on traditional biomass in 25 years from now (IEA, 2002). If population increase is a factor that can render the problem more acute, the impact of urbanisation is likely to improve the access to energy for the poor. However, the rising cost of energy, including oil, and the growing scarcity of traditional fuels are parameters that can worsen the situation.

The Small Island Developing States (SIDS)

A critical review of the literature indicates that researchers have focused mostly on the larger developing states. In most of their analysis, little reference has been made to the SIDS. Most of the recommendations and strategies proposed for poverty alleviation, enhancing access to energy and development make no special allowance for the case of the SIDS. It is important to point out that the SIDS differ remarkably from other countries in relation to the issue of the energy and poverty. Five key distinct characteristics of the SIDS are underlined below:

- a) Access to energy resources is more difficult in the SIDS because of their limited surface areas. Almost all of the SIDS are net importers of energy, mostly in the form of fossil fuels.
- b) Most SIDS have a high reliance on traditional biomass derived from fragile ecosystems.
- c) The SIDS are vulnerable to disruption in energy supply for several reasons like transport problems, bad weather and lack of storage capacity.
- d) Electricity supply through the grid is not feasible in many instances in different regions of the SIDS.
- e) The concept of poverty in the SIDS is inherently different from that in the rest of the world as it is influenced by the lifestyle of the inhabitants. For example, access to energy may not lead to poverty reduction if it only means having employees at work for longer hours or having people sitting in front of their television till late at night.

The tsunami that struck the Indian Ocean in late 2004 has demonstrated the vulnerability of the SIDS. Access to energy is a key component if an alert system is to work through distant regions separating the SIDS from each other and from neighbouring countries. In

case of calamities, evacuation and humanitarian aid cannot reach through in the absence of energy.

With respect to the SIDS, policies adopted should have a two-fold dimension:

- a) The most vulnerable sections of the population should be at the centre of policies to promote the access of energy. If energy does reach the latter, then it is almost certain that others that are relatively better off will also have access to it.
- b) If poverty is to be alleviated, it is possible to do so only through sustainable development. Foreign aid cannot be the solution. Energy Management is an essential tool for sustainable development.

The SIDS have widely different characteristics and categorizing them is an awesome task. As far as the issue of energy and poverty is concerned, it is appropriate to distinguish 3 categories of countries amongst the SIDS:

- Category A refers to the SIDS with a relatively low population: from a few thousands to less than 100 000 inhabitants. No consideration is here given to the level of development.
- Category B refers to the SIDS with a population of more than 100 000 inhabitants and listed amongst the least developing countries.
- Category C refers to the SIDS with a population of more than 100 000 inhabitants and not listed amongst the least developing countries.

Obviously, there should be cases of countries that do not fit squarely into any one of these categories. Nevertheless, it is worthwhile to look at examples of the Seychelles, the Comoros and Mauritius for Categories A, B and C respectively.

Category A

The Seychelles has 82 000 inhabitants. It is a vast archipelago but most inhabitants are on the islands of Mahe, Praslin and La Digue. Tourism and fishery are the most important industries and the annual per capita income is \$ 8000. The annual energy consumption is 1.1 toe per capita, derived mostly from imported fossil fuel. Over 95% of the population has access to electricity. As far as residential energy consumption for cooking is concerned, about 90% of households use LPG.

Like most Category A islands, the Seychelles face the double challenge of providing energy to inhabitants living on separate islands and of supporting the development of its tourism and fishing industries. It has succeeded thus far in meeting these requirements by:

- investing in power generation from imported fuel oil (in Mahé and Praslin) to sustain an annual growth of 9% in electricity demand. The electricity consumption per capita is now above 2 729 kWh (Razanajatovo, 2004).
- conducting a national campaign for replacing kerosene stoves by LPG cookers. More than 20% of households shifted to LPG taking advantage of incentives offered by the Government.

- promoting the installation of photovoltaic units like on ile de Cousin and ile Curieuse.

Poverty is not a real problem in the Seychelles but the future will be difficult for low-income earners if the reliance on imported fossil fuel is not reduced. Promoting the use of renewables, particularly solar power, is the way forward for both economic and environmental reasons.

Category B

The Comoro Islands have around 600 000 inhabitants out of which more than 70 % live in rural areas. The annual income per capita is around \$ 300 and the country is among one of the poorest in the world standing 141st in the UNDP human development index list. If the surface area of the archipelago is around 1660 squared kilometres (excluding the island of Mayotte), the population density can be as high as 555 inhabitants per square km in places like Anjouan. Energy in the form of fossil fuel account for about 10% of imports in real terms. With only 2 out of the 12 hydropower plants in operation, electricity is provided largely from diesel-run power plants. The annual electricity production is around 30 GWh, much less than is needed to meet residential and industrial requirements. The electricity demand is increasing at a high rate of about 30% annually: however, for most people access to electricity is a myth. Traditional biomass still accounts for more than 75% of the energy demand and the per capita energy consumption is less than 0.5 toe annually (Elahee, 2004).

The country is in urgent need of development to come out of the grip of poverty. Political instability has been a major hindrance to the implementation of energy programmes. Unauthorised or unmetered connections as well as unpaid bills have taken gigantic proportions. The institutional set up is not adequate and significant investment is required in the energy sector. Renewable energy, particularly in the form of hydropower and solar, is underutilised.

Category C

Mauritius with its stable population of 1.1 million inhabitants has a remarkable record in Africa and in the developing world. Access to electricity approaches 100%. The annual per capita electricity consumption is about 1350 kWh with a yearly growth of about 6%. The island has an income per head of about \$ 4000 with an economy relying on textile exports, its sugar industry, tourism and a fast-developing services sector. Use of traditional biomass is negligible as LPG has gained increasing acceptance in households in both urban and rural areas. If indeed poverty is not an acute problem, it is a fact that the country's heavy reliance on fossil fuel is a threat to both its economy and its ecology. Currently more than 75 % of the electricity production is derived from fuel oil or from coal. The increase in the world energy prices will have repercussions on the most vulnerable consumers of the island.

To sustain the development of the island, the cogeneration capacity based on renewable sources like bagasse has to be increased. Solar energy has yet to penetrate Mauritian

households in spite of the existing potential. Efficiency improvement measures are lacking everywhere, from power generation and distribution to industrial applications, from transport to the residential sector.

Conclusions

Category A countries should use their potential of renewable energy by implementing feasible projects to benefit vulnerable groups. Category B countries are in need of strong energy programmes to enable development to take off, and hence, alleviate poverty. Category C countries should apply proper Energy Management in order to sustain their development. On a regional basis, cooperation is needed to promote transfer of technology and know-how as well as the circulation of information. International cooperation will go a long way into favouring the penetration of renewable energy in the SIDS. Finally, access to energy should be recognized as a basic social right for all citizens of the world.

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