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Forward Perspectives

Energy Poverty in the Developing World

By [Craig Bettles](#), Futurist

According to the International Energy Agency (IEA), in 2030, 1.4 billion people (down from 1.6 billion currently) will lack electricity despite the prospect of technological progress in the developing world. Two thirds of this number will reside in Sub-Saharan Africa. Eliminating energy poverty while preventing climate change will require sacrifice by developed countries that use the majority of the world's energy and investment in new energy technologies for the world's poor.

Energy poverty is a real problem with a measurable toll in human lives. Approximately 2.6 billion people use fuelwood, charcoal, agricultural waste and animal dung to meet their daily energy needs. More than 4,000 deaths, mostly of women and children, could be prevented every day by eliminating the use of polluting fuels for cooking and heating. In addition, the collection of fuel leads to the environmental degradation of the local environments and consumes valuable time that could be used for more productive activities. Since the majority of fuel collection is done by women and children, modern, efficient energy services in developing countries would leave more time for education and entrepreneurial activities.

The overuse of energy by developed countries raises the prices of global energy supplies and increases global warming. The US, with only 5% of the world's population, consumes 22.5% of the world's energy. It would be simple to argue that developed countries should cut back on energy use to make room for growth in developing countries. However, according to calculations done by the IEA, even if developed countries reduced emissions to zero, it is impossible to get to the best case projection (stabilization of greenhouse gas concentrations at 450 parts per million of carbon dioxide). The projected growth of energy use in the developing world is simply too large.

What is needed is investment in new technologies that can provide clean energy to the world's poor. Luckily, there are a range of technologies on the horizon that could fill this demand. However, all of them require significant investment, not only in technology development, but in infrastructure and training in poor communities. For example:

- **Second generation biofuels**, often called cellulosic ethanol, could enable the use of agricultural waste and other low value plant materials for transportation and cooking fuel. More investment is needed in research, development and infrastructure for second generation biofuels.
- Using **non-food crops for biofuel feed stocks**, such as Jatropha, could improve the productivity of previously marginal land, diversify income streams and create new sources of income for subsistence level farmers. More research and development is needed on the cultivation and use of non-food crop biofuels.
- **Small & micro-hydro plants**, which have smaller environmental impacts, are one of the fastest growing areas in the renewable energy sector. The cost for micro-hydro is relatively small and can be put together by villagers with the right training.
- Like micro-hydro, **small scale wind power** is a fast growing segment of the industry, providing power to single homes and businesses (and often replacing dirty diesel generators). Many of the best land based locations for future wind power sites are in poor, rural areas such as tribal lands in the American West and Midwest, China's grasslands and Gobi desert region and the interior desert and coastal regions of India. However, poor communities need capital to buy and build turbines.
- Using **solar power**, either through small scale PV systems or solar cookers, can reduce environmental or health threats by replacing the noxious fumes and particulates produced by traditional fuels like dung and preserving natural habitats from fuel wood collection. However, poor communities need training, materials and capital to harness the power of the sun.

IAF has been working on pro-poor foresight as part of its ongoing efforts for the Rockefeller Foundation. You can read more about using foresight tools for smart globalization at www.altfutures.com/pro_poor_foresight. Also you can visit Geci Karuri-Sebina and Tanja Hichert's website, www.foresightfordevelopment.org to see pro-poor foresight related activities and networking opportunities which grew out of the workshop facilitated by IAF in March of 2009.

We welcome your reactions and your thoughts on reducing energy poverty. Please send me any comments at cbettles@altfutures.com.

News & Events

Defining Total Fitness for the 21st Century

On December 6th-9th, 2009, IAF will facilitate a workshop for thought leaders in the military and academia to define Total Fitness. Total Fitness has become a top priority for the military in addressing the health, healing, and resilience of our nation's warriors. Defining Total Fitness for the 21st Century will explore the interconnections between physiological, psychological, behavioral, medical, nutritional, spiritual, and social health in order to provide military leaders with tools and metrics to evaluate programs developed to improve the Total Fitness of military personnel. Experts in each of these fields will work with line commanders from all branches of the military to provide a definition of Total Fitness that is useful to those serving in the field.

The workshop will provide the basis for guidance to be issued by ADM Michael Mullen, USN, and Chairman of Joint Chiefs of Staff. Also, IAF expects that the papers presented at the conference will appear in the journal *Military Medicine*. The workshop is also being sponsored by the Samueli Institute and the Uniformed Services University's Consortium for Health and Military Performance (CHAMP). It will take place at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland.

Disparity Foresight Briefing Summary Available Online

On October 20, 2009 The Disparity Reducing Advances Project (DRA Project), in conjunction with the Congressional Black Caucus Health Braintrust, held its fourth Disparity Foresight Briefing on Capitol Hill. Over 80 participants from Congress, Federal Agencies and the policy community attended the meeting on Beyond Health Care Reform: Health & Equity in All Policies.

The briefing focused on factors outside healthcare which directly affect personal or community health, known as the Social Determinants of Health (SDOH). This is part of the "health equity movement." Like the anti-slavery movement, women's rights, civil rights, and environmentalism, the health equity movement will take a long time to develop.

As a number of the speakers and members of the audience pointed out, health equity is not about healthcare, but rather about the lived environment of those who are disproportionately affected by poor health. However, many people narrowly define health equity within the scope of healthcare. The Disparity Briefing broadened that view by highlighting key issues which are not traditionally associated with health, but have significant health impacts. The briefing also stressed the importance of using Health Impact Assessments (HIAs) as a tool to assess the health impact of policies in the communities they affect.

Opening remarks were given by Congresswoman Donna Christensen, Representative of the US Virgin Islands, Second Vice-Chair of the Congressional Black Caucus (CBC), and Chair of the CBC Health Braintrust. Making up the panel were Larry Cohen, Executive Director of Prevention Institute; Brian Smedley, Vice President and Director of Health Policy Institute at the Joint Center for Political and Economic Studies; and Adolph Falcón, Senior Vice President of the National Alliance for Hispanic Health. Clem Bezold, Chairman of the Institute for Alternative Futures and Program Director of the DRA Project, moderated the event.

The Disparity Foresight Briefing was held with support provided by Novo Nordisk. A full summary of the 4th Disparities Foresight Briefing, as well as meeting handouts and slides, are available [here](#). Details on the DRA Project partners, sponsors and reports are available at www.altfutures.com/draproject.

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