

Gender and Bioenergy

ARIANA ARAUJO AND ANDREA QUESADA-AGUILAR
IN COLLABORATION WITH: LORENA AGUILAR, ANDREA ATHANAS AND NADINE MCCORMICK



PHOTO: REUTERS / RAFIUR RAHMAN

- **Bioenergy:** biomass systems (woody, non-woody or organic waste) that produce heat and/or electricity.
- **Biofuels:** liquid fuels derived from biomass that can be used for transport or heating purposes:
 - **bioethanol:** produced from crops such as sugar cane, sugar beet, corn, wheat and barley;
 - **biodiesel:** produced from seeds such as palm, jatropha, rapeseed, sunflower and soy.
- **“First generation” biofuels:** produced from agricultural crops.
- **“Second generation” biofuels:** produced from agricultural waste, wood and grasses.

- In many developing countries, women are responsible both for securing energy for the household and producing crops. Consequently, developments in bioenergy and related biofuel markets have the potential to benefit women if well planned; yet if gender and poverty considerations are not incorporated into bioenergy policies and practices, the livelihoods of women and their families could be threatened.
- Women from poor regions rely heavily on traditional biomass systems to obtain the essential energy for their households. In Mali, Nepal, and Lao PDR, biomass (firewood and charcoal) represents 80% of the country’s national energy consumption and in India approximately 625 million people cook with biomass.
- Women spend three times as much time transporting fuel and water than men, and regularly carry four times as much as men in volume. Biogas systems have in some cases increased a woman’s daily workload because of the additional dung and water that has to be carried.
- In some of the poorest countries (i.e. Afghanistan, Burundi, Eritrea, Mali, Mauritania, and Togo) approximately 5% of all death and disease is caused by indoor air pollution. In other countries (i.e. Angola, Bangladesh, China and India) indoor air pollution is to blame for a total of 1.2 million deaths a year. Globally, dependence on solid fuels is one of the ten most important threats to public health. More efficient appliances and cleaner, alternative forms of energy are needed to combat indoor air pollution.

- First generation biofuels require feedstock based on crops, thereby increasing pressure on food commodity prices and potentially affecting access to food (particularly for people with low incomes) and the long-term stability of food supplies. The grain required to fill the petrol tank of a Range Rover with ethanol is sufficient to feed one person for a year, and assuming that the petrol tank is refilled every two weeks, the amount of grain required annually would feed a hungry African village for a year. Women are already more vulnerable to nutritional problems, (for example, 50% of the women and children in developing countries are anaemic) due to physical, social, economic, gender and cultural issues (e.g. pregnancy, lactation, inequitable food distribution within families).
- Women are the main producers of the world's staple crops (rice, wheat, maize), providing up to 90% of the rural poor's food intake and producing 60–80% of the food in most developing countries. Without special consideration, women are unlikely to benefit from international trade in first generation biofuels as they tend to be marginalized from such activities, thereby limiting their potential income sources. Land tenure for women is often less secure; fewer than 5% of women farmers in developing countries own land. They are therefore more vulnerable to displacement from the uncontrolled expansion of large-scale mono-crop agriculture.
- Producing biofuels for export requires feedstock production based on large-scale monocultures, with their associated impacts on land, water and other resources. Expanded production in addition to the displacement of other land uses will lead to increased levels of deforestation, which is already taking place in Malaysia and Brazil. Forests contribute to the livelihoods of many of the 1.2 billion people living in extreme poverty; 70% of these are women. Uncontrolled biofuel production could worsen the living conditions of women living in poverty, in particular those that rely on the forest for their survival.
- High oil prices reduce women's access to modern fuels and thus make agricultural activities less efficient and more burdensome. By growing biofuel feedstock alongside food crops, women can spread their risk and importantly, gain access to additional energy sources, thus making their own work more efficient and freeing up time to spend on other activities. Women's organizations should be empowered to implement a sustainable "food-and-fuel" system, allowing local energy needs to be met and providing opportunities for income generation from selling biofuels and by-products to broader markets.
- The promotion of international biofuel markets based on first-generation feedstock, and their associated environmental and social risks, will overshadow the potential of community-scale biofuel futures and the associated empowerment of women.
- Bioenergy and biofuels represent only one of many energy options. Women need to be empowered to be able to choose the appropriate mix of sustainable energy options to suit their needs.

Energy is a means of satisfying needs. Both women and men rely on energy for most of their daily activities but they have different needs and roles and the various energy services have different impacts on men and women. In the past, women's energy needs and lifestyles have been ignored, and both traditional fuels and modern energy services have certain limitations that can increase women's problems. Simply abolishing traditional fuels is not a solution because the lack of energy can damage women's health, and limit their ability to care for their families, get an education, earn income, and engage in social and political affairs.

There are many different risks associated with bioenergy – environmental, economic and social – as well as potential opportunities. Understanding and managing these risks in a gender-sensitive way is fundamental to ensure that the opportunities presented by bioenergy reach both men and women.

The use of biofuels could solve women's energy needs as long as consideration is taken of women's basic needs, and of how their use might increase women's workload, might affect or improve their health, and reduce or increase household income. For example, producing biodiesel from jatropha could potentially lead to landscape restoration as jatropha can grow in desert-like conditions and, when planted as a "living hedge", it can reduce soil erosion, and increase nitrification and water retention. Small-scale community jatropha projects have also been shown to empower women. For example, women in Ghana use the jatropha biodiesel for the production of shea butter and in Mali, jatropha seeds are used to produce soap. In Kenya, local biofuel markets provide farmers with cash which in turn can support the switch from fuel-wood to cleaner, more efficient energy sources.

A gender perspective in the analysis of biofuels is necessary in order to understand men and women's energy use and needs. It will enable biofuel initiatives to embrace the various requirements and fulfil, in an equitable manner, the community's energy needs. Energy services should respond not to which kind of energy is best for the users (men and women), but should be about enabling women to choose which option adapts better to their needs, context and possibilities.

Recommendations

- A gender perspective must be mainstreamed into planning and policy-making related to biofuels, to ensure that the concerns and needs of both men and women are taken into account. Women's involvement in the development and implementation of biofuel policies is imperative because current policies may be undermining food security, degrading ecosystems and preventing rural farmers, especially women, from benefiting from biofuel markets.
- Biofuel production and use should be accompanied by adaptive measures that will maintain and enhance patterns of sustainability, while avoiding negative impacts on the health and socio-economic status of women and other marginalized groups.

- Biofuels could improve environmental conditions and people's living conditions if they are developed in an effective and considerate manner.
- Women should have access to credit, carbon fund markets, and information, to enable them to learn about and decide which modern biomass resources and technologies can fulfil their needs.
- Governments should use disaggregated data to identify and quantify the different energy needs of women and men, in order to design and implement appropriate policies and programmes, and to evaluate the results. Government officials should be trained in bringing a gender perspective into their work.
- Public and private energy expenditure and investment programmes must include gender-sensitive budgets to make sure that the targeting of policies and resources is equitable.
- Most poor women in developing countries cannot afford to pay for energy services. Poor households spend about 15–28% of their income on energy while 2 billion people do not have access to electricity. Empowering women to provide their own energy is a key policy for sustainable development. This requires extension services to enable effective sustainable planting, and loans for purchasing seeds, plants, oil presses and generators.
- Women should have access to training programmes relating to the energy service sector. They will then be able to participate in decision-making, scientific development, technical implementation and practical use of biofuels or any other alternative energy source.
- In order for bioenergy markets to be developed in a sustainable, equitable and gender-sensitive way, a coordinated approach is required, given its cross-cutting nature, building on relevant policy fora including the CSD, CBD, UNFCCC and UNCCD.

Clancy, J., Oparaocha, S. and Roehr, U. (2004). **Gender Equity and Renewable Energies**. Thematic Background Paper No. 12, International Conference for Renewable Energies. Bonn.

Commission on Sustainable Development 15th Session. (2007). **Women as a Major Groups Statement on Inter-linkages and cross-cutting issues**. www.un.org/esa/sustdev/csd/csd15/statements/women_2may_linkages.pdf

Denton, F. (2002). **Gender: The Missing Link to Energy for Sustainable Development**. Policy Paper for WSSD, Johannesburg, South Africa.

FAO. (2007a). **Bioenergy could drive rural development – experts weigh bio-power impact**. www.fao.org

FAO. (2007b). **Gender and food security nutrition**. <http://www.fao.org/Gender/en/nutr-e.htm>

FAO. (2007c). **Women's contributions to agricultural production and food security: Current status and perspectives**. http://fao.org/DOCREP/x0198e/x098e02.htm#P166_12601

IUCN Energy, Ecosystems, and Livelihoods Initiative. (2007). **Bio-fuels: Managing risks into opportunities**. Programme of work concept note.

Karlsson, G. (2006). **Where Energy is Women's Business: National and Regional Reports from Africa, Asia, Latin America and the Pacific**. ENERGIA. The Netherlands.

Karlsson, G. (2007). **Women's business? It would be far easier to alleviate poverty and promote economic development if women had a greater say in energy decision making**. www.energia.org

Lynas, M. (2006). **Frankenstein fuels**. New Statesman 7 August.

McNeely, J.A. (2007). **Green Energy or just a new set of problems**. Switzerland: IUCN.

Pimentel, D. and Patzek, T.W. (2005). **Ethanol production using corn, switchgrass, and wood; biodiesel production using soybean and sunflower**. Natural Resources Research 14(1).

Sugrue, A. (2006). **Why the development of biofuels can benefit the rural poor – Biofuels as a future source of energy for women in rural settlements in South Africa**. Women in Environment Conference – *Empowering Women for Environmental Action*. CURES Southern Africa/EcoCity. South Africa.