FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Forestry Department

BIOENERGY AND THE MILLENNIUM DEVELOPMENT GOALS

Many factors converge in making bioenergy a key component and a viable opportunity in the struggle towards the achievement of the Millennium Development Goals (MDGs). Although the sustainable access to energy is not treated as a priority in itself in the MDGs, most of them have a direct energy implication, particularly Goal 1 (Eradicate extreme poverty and hunger) and Goal 7 (Ensure environmental sustainability) (Box 1). Specific reference to bioenergy was made at the 2002 World Summit on Sustainable Development (WSSD), where energy was high on the agenda. According to the WSSD Johannesburg Declaration, energy must be considered a human need on a par with other basic human needs (clean water, sanitation, shelter, health care, food security and biodiversity) (Box 2).

There is a deeply rooted interrelation between poverty, access to energy and environmental sustainability, as deducted from the following:

- The number of people living with less than US$1/day, target of MDG 1, is about the same as the number of the people without access to commercial energy: two billion people.
- Four out of five of these people live in rural areas in developing countries, mainly in South Asia and Africa. Particularly serious is the situation in sub-Saharan Africa, where more than 92 percent of the rural population is without electricity.
- In these countries biofuels, and particularly fuelwood and charcoal, are not only vital to the nutritional needs of rural and urban households, but are also often essential for their cottage activities and food processing enterprises.
- Fuelwood and charcoal are primary forest products, absorbing around 60 percent of worldwide wood removals, a share that rises to over 80 percent in developing countries, with peaks of over 90 percent in Sub-Saharan Africa and some South Asian countries, putting considerable pressure on forests and trees outside forests.

Box 1: Millennium Development Goals

1 - Eradicate extreme poverty and hunger
2 - Achieve universal primary education
3 - Promote gender equality and empower women
4 - Reduce child mortality
5 - Improve maternal health
6 - Combat HIV/AIDS, malaria and other diseases
7 - Ensure environmental sustainability
8 - Develop a global partnership for development

Box2: WSSD Plan of Implementation

The World Summit on Sustainable Development (WSSD) in Johannesburg specifically addressed the bioenergy issue in several parts of the WSSD Plan of Implementation (PI), emphasizing that "access to energy facilitates the eradication of poverty".

Relevant PI paragraphs:

Chapter II (Poverty eradication)
Para 9 (b) Improve accesses to modern biomass technologies and fuelwood sources and supplies and commercialize biomass operations, including the use of agricultural residues, in rural areas and where such practices are sustainable
Para 9 (c) Promote a sustainable use of biomass and, as appropriate, other renewable energies through improvement of current patterns of use, such as management of resources, more efficient use of fuelwood and new or improved products and technologies
Para 20 (g) Develop and utilize indigenous energy sources and infrastructures for various local uses and promote rural community participation

Chapter IV (Protecting and managing the natural resource base of economic and social development)
Para 45: "Forests and trees cover nearly one third of the Earth's surface. Sustainable forest management of both natural and planted forests and for timber and non-timber products is essential to achieving sustainable development as well as a critical means to eradicate poverty, significantly reduce deforestation, halt the loss of forest biodiversity and land and resource degradation and improve food security and access to safe drinking water and affordable energy".

Sale and trading in woodfuels provide many people, including the urban poor, with jobs and income. For farmers with limited forest stocks or with land not needed for food production, fuelwood or wood for charcoal represent profitable products or by-products of trees growing on farms. For many, woodfuel production, selling or trading is their main source of income. For many more, it provides a supplemental, transitional, seasonal or occasional income. Woodfuel production can also be associated with particular age-groups and in many places, also serves as a 'safety net' activity in times of hardship.

Need driven rather than properly managed, woodfuel exploitation is often unsustainable with consequent degradation of natural resources, thus adding to the more conspicuous processes of deforestation caused by farmland and ranchland expansion. The big challenge for us in forestry is to assure and modernize this primary forest function whilst simultaneously achieving sustainability.

How does bioenergy contribute to MDG achievement?

Bioenergy projects contribute to the eradication of extreme poverty and to ensure environmental sustainability in several aspects among which the following may be highlighted:

Economics

- Bioenergy projects not only can save external currencies through the substitution of imported fossil fuels, but may also act as sustainable development mechanisms. In fact, increasing the use of biomass for energy (from sustainable resource management) leads to improved economic development and poverty alleviation, especially in rural areas. Moreover, bioenergy projects will provide greater diversification and income opportunities for agriculture, agro-industries and forestry: they will increase the access of small rural industries to energy services; and will enhance the value of rural resources, encouraging private and public sector participation and investments. Locally produced bioenergy will boost national energy security and reduce the oil import bill.

Employment

- Increasing the use of biomass for energy attracts investments towards rural areas, generating new business opportunities for small-and medium-sized enterprises in biofuel production, preparation, transportation, trade and use, and generates incomes (and jobs) for the people living in and around these areas. In fact, bioelectricity production has the highest employment-creation potential among renewable energy options; and when compared to electricity production using conventional energy sources, it can create several times the number of direct jobs with a lower investment cost per job generated.

Social development

- Modern bioenergy systems will increase both access to and reliability of energy services for households in rural areas, thus improving the quality of life.
- The development of socially and culturally sustainable biomass production systems will inevitably stimulate governance options, equity and gender equality, especially in view of women's central role in household energy management.

Micro and macro environmental benefits

- Reduced indoor air pollution from wood energy combustion in poor households associated to the characteristics of cooking devices with positive impacts particularly on women and children.
- Resource conservation and ecosystem rehabilitation (through sustainable biomass production in marginal lands – such as energy plantations and crops – and by replacing unregulated mining of wood resources).
- Reduced CO_2 emissions by using cleaner fuels, such as ethanol and biodiesel (from unsustainable to sustainable; from fossil to renewable).

Experience from different countries around the world supports the view that bioenergy can be a lever for rural development and regeneration in areas where investment is most needed and the creation of jobs is most difficult.

Obviously, bioenergy is not a panacea for all energy problems. Long lasting solutions should be considered together with other energy options taking due consideration of local characteristics and situations. However, the choice of the most appropriate energy option in relation to poverty reduction and environmental sustainability must consider a combination of local factors such as: existing productive enterprises, local energy resources, and technical characteristics of production/consumption patterns, emissions control and sustainable land-use practices.

Planners and operators of development programmes in forestry, agriculture and energy domains are recognizing the socio-economic and environmental benefits of bioenergy projects and are now seeing bioenergy as a way to reduce poverty and improve livelihoods in rural areas, overcoming the negative perception of bioenergy as a key symptom of under-development or an environmental hazard.

In FAO, the development and promotion of sustainable bioenergy systems are carried out through inter-departmental cooperation between the Wood Energy and the Agro-energy components.

For additional information:
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