Chapter 8
Are Biofuels a Factor of Sustainable Development in a Food Insecurity Context in Africa?
Case Study of Burkina Faso

Marie-Hélène Dabat
Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), Burkina Faso

Joël Blin
Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), Burkina Faso & 2iE, Institut International d'Ingénierie de l'Eau et de l'Environnement, Burkina Faso

Elodie Hanff
2iE, Institut International d'Ingénierie de l'Eau et de l'Environnement, Burkina Faso

ABSTRACT

Bearing in mind the strong link between energy and development, and given the country's heavy reliance on imported fossil fuels, this chapter discusses the opportunity for substituting fossil fuels with biofuels in a Sahelian country, Burkina Faso. Biofuel opportunities are discussed taking into account technical, agronomic, and land potentials in this country. Diversification of energy resources with biofuels would reduce the growth of fuel imports in the short term, improve overall public finances, provide a chance to develop agriculture, and provide benefits for the locals. However, if they are to generate sustainable socio-economic development, biofuel projects need to be mindful of food security and economic incentives, and should be part of national agricultural strategies. The chapter shows that a number of conditions must be met to ensure the advantages of biofuels outweigh the disadvantages: prioritising domestic use over exports; supporting the emergence of decentralised systems; localising dedicated crops in order to avoid competition with food crops; regulating the edible oil market; removing technical obstacles to production and processing; and prioritising projects implying family-farming rather than agri-business.

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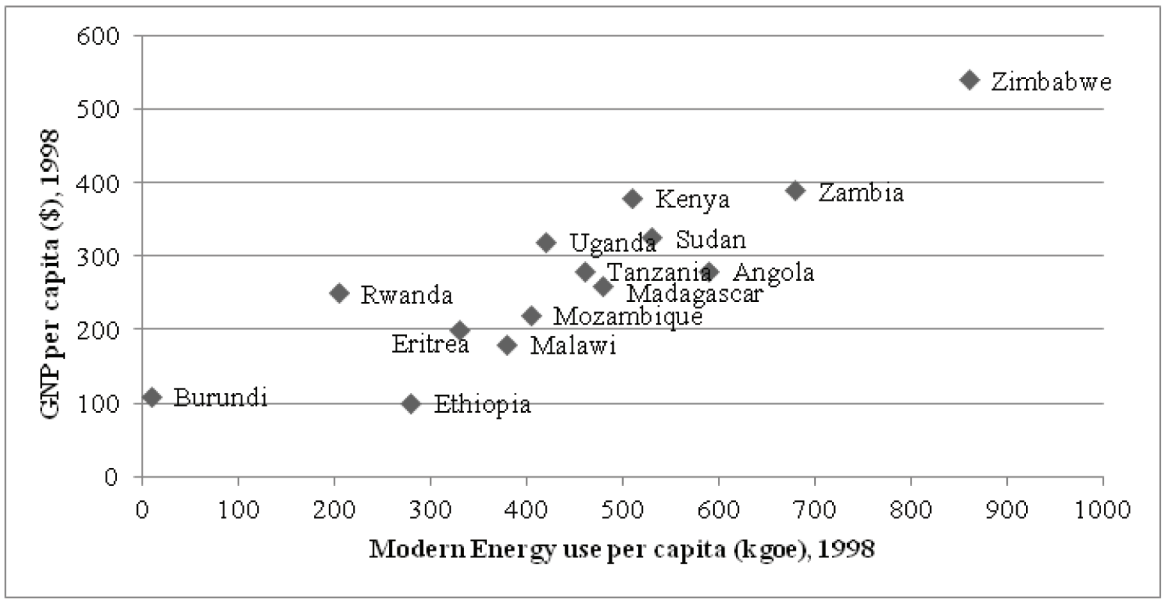
Figure 1. Modern energy use per capita (kgoe) vs GNP per capita ($) (MCPEA, 2008)



INTRODUCTION

The World Commission on Environment and Development suggests that development is sustainable where it "*meets the needs of the present without compromising the ability of future generations to meet their own needs*" (UND, 1986). In addition, energy has been defined by the United Nations Development Programme (UNDP) (McDade, Lallement, & Saghir, 2006) as playing a key role in sustainable development and poverty alleviation efforts. As specified in the energy objectives (NEPAD, 2001) of the New Partnership for Africa's Development (NEPAD), ensuring the provision of adequate, affordable, efficient and reliable high-quality energy services with minimum adverse effects on the environment for a sustained period is crucial for African countries. Although there are no specific Millennium Development Goals (MDG) (UN, 2005) relating to energy, it will be impossible to achieve MDGs, and among them food security, without improving the quality and quantity of energy services in the developing world (Clare, 2002; ECOWAS & WAEMU, 2006).

Many studies (ECOWAS & WAEMU, 2006; Karekezi, 2002; Martinez & Ebenhack, 2008; Sebitosi & Pillay, 2005) have shown the net positive link between energy consumption and development. For example, the African Energy Policy Research Network has demonstrated (see Figure 1) the correlation between Gross National Product (GNP) and per capita energy use in Africa (AFREPREN/FWD, 2002).

While energy is not the sole factor for sustainable development, Africa needs to improve reliability and to search for more abundant, cheap energy in order to enable economic growth (IEA, 2008) and ensure the well-being of its populations. It also needs to reverse environmental degradation and health impacts that are associated with the use of traditional fuels in rural areas (Amigun, Sigamoney, & von Blottnitz, 2008; Toonen, 2009).

Energy generates electricity for a variety of applications, including domestic purposes, off-grid rural electrification, small and medium enterprises and industrial needs. Roughly 1.6 billion people, mostly in developing countries, are reported as lacking access to basic electricity