



Brazilian biofuels and social exclusion: established and concentrated ethanol versus emerging and dispersed biodiesel

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ABSTRACT

Increasing interest in biofuels trade between developed and developing countries has spurred worldwide discussions on issues such as subsidies and the 'food for fuel' crisis. One issue missing in recent discourse is the pressure exerted on developing countries to adopt large-scale mechanized farming practices to increase economic efficiencies. Such approaches often exclude small-scale farmers from participating in the emerging biofuels market, thus exacerbating poverty and social exclusion. Drawing on both qualitative and technical data, we discuss such pressures using Brazilian ethanol and biodiesel production. Pressure from international markets to become more economically efficient may contribute towards the erosion of recent schemes to encourage social benefits for small farmers in biodiesel production. We conclude with trade and policy implications.

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1. Introduction

A confluence of interrelated factors has led to widespread interest in and increased demand for biofuels as a more sustainable energy source when compared with fossil carbon sources such as oil, coal and natural gas. Factors include increased demand for energy in emerging economies like China and India, fluctuating energy prices due to resource depletion, instability in oil producing regions, concerns over environmental impacts such as climate change, and recent technological breakthroughs in agriculture [1]. This increased interest has spurred worldwide discussions on international biofuels trade between developed and developing countries. High profile issues include for example domestic support, subsidies and, the so-called 'food for fuel crisis', where the demand for biofuels may have pushed prices for commodities such as corn, soybean and meat prices to record highs (*c.f.* [1–3]). For example, at the most recent FAO World Food Summit, the dominant discussion was focused on increased food prices triggered by the increase of biofuels production from crops originally used as food [4].

One issue that has drawn less attention in the international trade discourse, and the focus of this paper, is the pressure exerted on developing countries to adopt economically efficient, large-scale

mechanized farming practices, and its potential negative consequences on small-scale farmers. Previous generations of agricultural modernization, such as capital and chemical intensive 'Green Revolution' techniques, the introduction of foreign crops such as coffee and soybeans, and most recently agricultural biotechnology, have increased economic efficiencies and exports, but have also been scrutinized for excluding small farmers from participation [5,6]. These concerns have influenced policy makers in Brazil, a major agricultural exporter and one of the most advanced countries in biofuel technologies and production [7,8], yet one grappling with economic disparity and poverty [8,9]. Nelson & Winter [10] suggest that the emergence of such trade-offs can be expected with economic change, which resolves some problems but also creates negative externalities that must also be addressed. This paper illustrates Brazil's attempts to manage such dynamics.

Concerns over disparity have been termed 'social exclusion', and have been the topic of much discussion in Latin America [11] and an official policy mandate of Brazilian President Luiz Inácio 'Lula' da Silva [8].¹ According to Ocampo [12], a paradox of emerging economies during the 1990s was their ability to produce companies capable of integrating into the global economy, but also a growth in the informal (often illegal) economy; the latter being mostly low-end entrepreneurial ventures and subsistence jobs that Mazza [13] calls 'poverty' employment. Hall et al. [9] suggest that these social

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¹ See also <http://www.fomezero.gov.br/o-que-e>. Accessed December 22, 2008.