



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

4th Quarter 2011 | 26(4)

## CERTIFICATION SCHEMES FOR BIOFUEL SUSTAINABILITY WILL NOT WORK

**Clay Ogg**

JEL Classification: O13

Keywords: Biofuel, Certification, Sustainability, Deforestation, Food Prices, Ethanol, Biodiesel

European leaders offer certification as a remedy for important food and environmental sustainability issues posed by biofuel subsidies and mandates (European Commission, 2011) as do some environmental and wildlife groups. By refusing to purchase uncertified biofuel feedstocks, countries avoid use of fuels produced by destroying rain forests and certain other ecosystems. However, linkages between fuel and food markets undermine claims of biofuel “sustainability.”

An important aspect of biofuel certification is the certification of vegetable oils which can be used as feedstock for biodiesel production. Yet, palm oil or soy oil certification by importing countries fails to connect significantly with the price increase and indirect land use change caused by biofuel demands. In addition, vegetable oil consumed as fuel is identical to vegetable oil consumed as food. Popular biofuel certification schemes, such as that offered by the European Commission (2011), could shift uncertified vegetable oil from fuel uses to food uses without a reduction in use, or an increase in price, of the uncertified product.

Plausible remedies to these problems are explored in this article, such as certifying all vegetable oil, not just the part sold as biofuel. It must be noted that any remedy that successfully protects forest ecosystems will accentuate the food scarcity side of biofuel sustainability problems. Price increases from reducing food availability raise new sustainability issues and create barriers to attracting participation in certification agreements on the part of poor countries that account for much of vegetable oil imports (FAPRI, 2011).

### Disconnect Between Biofuel Problems and Certification Remedies

Biofuel subsidies and mandates create new demands which raise crop prices (Headey, Malaiyandi, and Fan, 2009) and encourage land conversion to crop production (Kim, et al, 2010). Sustainability encompasses both consumer needs and protection of ecosystems. Since corn, soybeans, and wheat often are rotated on the same land, an increase in the price of one crop, such as corn used for ethanol, spreads to the other crops (Headey, Malaiyandi, and Fan, 2009). Higher prices encourage land conversion. Certifying the small portion of crops used to produce fuel does not address the tendency for the above crop prices to rise worldwide, and it does not address the loss of rainforests and other key ecosystems which are caused by the higher crop prices.

Biofuel mandates in Europe and the United States could cause 24-26 million hectares of additional forest land conversion in South America and other forest areas (Kim, et al, 2010). Although Brazil is one of the largest exporters of corn and soybeans, Brazil does not export these crops to the United States. (FAPRI, 2011). This suggests a large disconnect between any U.S. reliance on biofuel certification remedies and the price and land use related sustainability problem caused by U.S. biofuel mandates.

The European Union (EU) accounts for about a sixth of Indonesia’s palm oil exports, but India and China import far more than Europe (FAPRI, 2011). The EU share of world soybean oil imports is only 3%. The European Commission’s biofuel certification remedy simply fails to confront much of the sustainability problem posed by Europe’s biofuel demands.

## **Design Flaws**

In successful certification programs, refusal to purchase the uncertified product causes producers to lose sales, reduces the price of the uncertified product, and reduces its profitability. These consequences provide incentives to produce a product which is more friendly to wildlife or to the environment. For example, illegally harvested ivory might fail to gain certification status causing consumers to shift their purchase to legally harvested ivory.

Unfortunately, vegetable oil produced in tropical countries and sold as fuel is indistinguishable from vegetable oil sold as food. Vegetable oil that fails certification for use as fuel can be sold at virtually the same price for food uses in places like India and China (FAPRI, 2011), who are the major importers of food from Brazil, Indonesia, and other oil crop producing countries. Certification schemes that only sanction biofuel uses therefore can result in offsetting shifts of product between sanctioned fuel and unsanctioned food markets, resulting in no increase in the price or reduction in the quantity of the uncertified vegetable oil. The biofuel certification scheme offered by the European Commission (2011) is potentially misleading as it appears to deny markets to uncertified vegetable oil, but it does not.

## **Certifying All Vegetable Oil**

Certifying all vegetable oil worldwide, not just the part used as biofuel, would be far more effective in protecting rain forests and other ecosystems from agricultural expansion. In fact, certifying all vegetable oil potentially compensates for more damage to forests than those caused by biofuel programs. However, oil crop certification poses other challenges that are typical of certification schemes in general.

Any success in protecting forests will reduce the supply of food and raise crop prices. These higher prices from preventing forest conversion to crops can result in tens of billions of dollars of increased profits for crop exporting countries (ADP, 2010), but food importing countries are major losers.

In contrast to luxury products like fur, ivory, and teak, vegetable oil is a source of calories for the world's poor (Headey, Malaiyandi, and Fan, 2009), and its certification raises sustainability issues. A successful oil crop certification program discourages conversion of certain land to crop production, thereby reducing oil crop supplies, just as biofuel production increases crop demand. The combined effect of a biofuel policy that simultaneously reduces food supply and increases food demand is not sustainable.

Many poor countries invest heavily in protecting their consumers from high crop prices (Headey, Malaiyandi, and Fan, 2009). The above tendency for participation in oil crop certification programs to raise oil crop prices experienced by major importing countries, such as China and India (FAPRI, 2011), likely will discourage them from participating. Lack of participation from these two largest importers of vegetable oil, as well as from many other poor country importers, would greatly undermine oil crop certification efforts.

## **Implications for Policy**

Biofuel certification remedies fail to address the ecosystem damages caused by biofuel demands. Certification schemes for vegetable oil can influence prices and uses of vegetable oil products, but they accentuate the food versus forest and equity problems that sustainable programs intend to solve. Recognizing these limitations hopefully will help to focus the policy process on other, more effective remedies to the problems caused by biofuel subsidies and mandates. These remedies could include reducing the subsidies and mandates.

## **For More Information:**

Avoided Deforestation Partners (ADP). (2010). Tropical deforestation: The threat to American farms and jobs. Washington, DC. Available online: <http://assets.usw.org/our-union/pulp-paper-forestry/farms-here-forests-there-report-5-26-10.pdf>

European Commission. (2011). First EU sustainability schemes for biofuels get the go-ahead. Brussels, Belgium. Available online: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/901&format=HTML&aged=0&language=en&guiLanguage=fr>

Food and Agricultural Policy Research Institute (FAPRI). (2011). FAPRI U.S. and world agricultural outlook. University of Missouri and Iowa State University. Available online: <http://www.fapri.iastate.edu/outlook/>

Headey, D., Malaiyandi, S., and Fan, S. (2009). Navigating the perfect storm: Reflections on the food, energy, and financial crises. International Food Policy Research Institute, IFPRI Discussion Paper 00889, Washington, D.C. Available online: <http://www.ifpri.org/publication/navigating-perfect-storm>

Kim, Y., Sohngen, B., Golub, A., Hertel, T., Rose, S. (2010). *Impact of U.S. and European biofuel policies on forest carbon*. Presented at Agricultural and Applied Economics Association, 2010 Annual Meeting, July 25-27, Denver, Colorado. Available online: [http://ageconsearch.umn.edu/bitstream/61456/2/AAEA\\_11359\\_0503.pdf](http://ageconsearch.umn.edu/bitstream/61456/2/AAEA_11359_0503.pdf)

*Clay Ogg (cogg@defenders.org) is Director of Conservation Economics and Finance, Defenders of Wildlife, Washington, D.C.*

*The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City, the Federal Reserve System, or Purdue University.*

*© 1999-2011 Choices. All rights reserved. Articles may be reproduced or electronically distributed as long as attribution to Choices and the Agricultural & Applied Economics Association is maintained.*

**The farmdoc project distributes Choices in partnership with  
the Agricultural and Applied Economics Association.**

**[click here to visit choicesmagazine.org >>](http://choicesmagazine.org)**