

Food or Fuel?

A common objection to biomass energy production is that it could divert agricultural production away from food crops in a hungry world -- even leading to mass starvation in the poor countries.

True or not?

Not true: at best it's an oversimplification of a complex issue. It just doesn't work that way, and neither does hunger.

This is a sound explanation from the **Foundation for Alternative Energy** (FAE) in Slovakia:

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A major criticism often levelled against biomass, particularly against large-scale fuel production, is that it could divert agricultural production away from food crops, especially in developing countries.

The basic argument is that energy-crop programmes compete with food crops in a number of ways (agricultural, rural investment, infrastructure, water, fertilizers, skilled labour etc.) and thus cause food shortages and price increases.

However, this so-called 'food versus fuel' controversy appears to have been exaggerated in many cases. The subject is far more complex than has generally been presented since agricultural and export policy and the politics of food availability are factors of far greater importance.

The argument should be analysed against the background of the world's (or an individual country's or region's) real food situation of food supply and demand (ever-increasing food surpluses in most industrialized and a number of developing countries), the use of food as animal feed, the under-utilized agricultural production potential, the increased potential for agricultural productivity, and the advantages and disadvantages of producing biofuels.

Fuel alcohol in Brazil

The food shortages and price increases that Brazil suffered a few years ago, were blamed on the ProAlcool programme (fuel ethanol). However, a closer examination does not support the view that bioethanol production has adversely affected food production since Brazil is one of the world's largest exporters of agricultural commodities and agricultural production has kept ahead of population growth: in 1976 the production of cereals was 416 kg per capita, and in 1987 -- 418 kg per capita. Of the 55 million ha of land area devoted to primary food crops, only 4.1 million ha (7.5 per cent) was used for sugarcane, which represents only 0.6 per cent of the total area registered for economic use (or 0.3 per cent of Brazil's total area). Of this, only 1.7 million ha was used for ethanol production, so competition between food and crops is not significant.

Furthermore, crop rotation in sugarcane areas has led to an increase in certain food

crops, while some byproducts such as hydrolyzed bagasse and dry yeast are used as animal feed. Some experts (Goldemberg, 1992) believe that 'In fact, the potential for producing food in conjunction with sugarcane appears to be larger than expected and should be explored further'.

Food shortages and price increases in Brazil have resulted from a combination of policies which were biased towards commodity export crops and large acreage increases of such crops, hyper-inflation, currency devaluation, price control of domestic foodstuffs etc. Within this reality, any negative effects that bioethanol production might have had should be considered as part of the overall problem, not the problem.

It is important to mention that developing countries are facing both food and fuel problems. Adoption of agricultural practices should, therefore, take into account this reality and evolve efficient methods of utilising available land and other resources to meet both food and fuel needs (besides other products), e.g., from agroforestry systems."

-- From **"Renewable Energy"**, by Emil Bedi, FAE-SZOPK, Bratislava, Slovakia -- the Foundation for Alternative Energy (FAE) is a Slovak non-governmental organisation committed to environmental protection through the promotion of sustainable energy development: Biomass -- See "FOOD OR FUEL?"

<http://www.seps.sk/zp/fond/dieret/biomass.html>

For more of Emil Bedi's excellent work, see "Energy today basics" at Hakan Falk's **Energy Saving Now** website:

<http://energy.saving.nu/energytoday/basics.shtml>

See also **"Fuel Ethanol and Food Supply"**, Canadian Renewable Fuels Association:

<http://www.greenfuels.org/ethafood.html>

Starvation?

It is also often said that increased bioenergy use in the developed countries, particularly in the US, would cut US food exports and lead to starvation in the Third World.

Aside from lacking the essential analysis of food supply and demand outlined above, this argument leaves out the potential of set-aside land and marginal land, it ignores the large amounts of biomass currently wasted in various ways in the developed countries (from agricultural and forestry residues to commercial food-processing by-products to the huge amounts of waste cooking oil dumped in sewers and landfills, etc), and it relies on a mythical view of the developed nations' role in feeding the world.

These are typical objections to biomass energy production:

1. "Any attempt to grow fuel for general use would require a massive increase in crop yields at a time when we are unlikely to be able to grow enough food to feed everyone without affecting other species. To go 'green' in developed countries at the expense of food production may well result in effective

genocide in other, less developed countries, even our own poor would not be exempt."

2. "Present food shortages throughout the world call attention to the importance of continuing US exports of corn and other grains for human food to reduce malnutrition and starvation. Expanding ethanol production could entail diverting essential cropland from producing corn needed to sustain human life to producing corn for ethanol factories."

There is no food shortage

The world already grows more than enough food to feed everyone. About a billion people now don't have enough food to meet basic daily needs, but that's NOT because there's not enough food. There's more food per capita now than there's ever been before -- enough to make everyone fat. There's enough to provide at least 4.3 pounds of food per person a day: two and a half pounds of grain, beans and nuts, about a pound of fruits and vegetables, and nearly another pound of meat, milk and eggs.

People starve because they're victims of an inequitable economic system, not because they're victims of scarcity and overpopulation.

It's a myth that most of the food is grown in the rich countries. The US, for instance, is the world's biggest-ever food IMPORTER. "US exports of corn and other grains for human food to reduce malnutrition and starvation" is another myth. Most US grain exports go to feed livestock, not humans. Much of it is also used as feedstock for industry. It can also undercut local food production, leading to less local food security, not more.

Facts

1. The US and the other industrialised countries are the world's major food importers, importing 71% of the total value of food items in world trade (Handbook of International Trade and Development Statistics 1994 (New York and Geneva: United Nations Conference on Trade and Development, 1995), table 3.2).
2. The US imports about \$1.5 billion worth of beef a year (Food and Agriculture Organisation, FAO Trade Yearbook 1995, vol. 49 (Rome: FAO, 1996), 160, table 12).
3. The US imports 54% more in farm commodities than it exports (FAO Trade Yearbook 1995, table 6), much of it from countries where the majority lack a healthy diet. The US is in fact the biggest food importer the world has ever seen.

See:

The Myth of Scarcity

<http://www.foodfirst.org/pubs/backgrdrs/1998/w98v5n1.html>

12 Myths About Hunger

<http://www.foodfirst.org/pubs/backgrdrs/1998/s98v5n3.html>

US grain exports

There are many different fuel crops and many different ways of growing them, from the eco-unfriendly, chemical- and energy-intensive industrial farming methods to sustainable methods which conserve or even improve the environment, with equal or higher yields.

In the US, the main fuel crops are corn (maize), for ethanol, and soybeans producing soy oil for biodiesel. These are the crops which it's alleged should not be diverted from "human food to reduce malnutrition and starvation".

"We have the ability in the United States to grow the grain to feed the world" -- Allen Anderson, Chairman of the **MARC 2000** coalition of agribusiness and transportation interests, testimony before the Senate Agriculture, Nutrition and Forestry Committee, April 30, 1998

"Our mission is to feed and nourish a growing world population" -- **Archer Daniels Midland**, multinational grain trading company, November 22, 1999

"Helping farmers grow a wide variety of goods to feed a growing world" -- **Cargill, Inc.**, multinational grain trading company, November 22, 1999

But research by Mark Muller and Richard Levins of the **Institute for Agriculture and Trade Policy** reveals a rather different picture:

- For every one ton of US corn exported in 1996 to one of the 25 countries with the world's most serious malnutrition problems (Category 5 countries, with at least 35 percent of the population undernourished), 260 tons were exported to a wealthy Organization for Economic Cooperation and Development (OECD) country.
- 20 percent of the total US corn crop is exported; two-thirds of these exports go directly to the 28 industrial OECD countries, where it is mostly used for feeding animals.
- 76 percent of the corn used in the US is used for animal feed.
- Less than three-tenths of one percent of total US corn exports went to the poor Category 5 countries in 1996.
- Less than three percent of total US corn exports in 1996 went to the 24 Category 4 countries (where undernourishment affects at least 20 percent of the population).
- More US corn goes to make alcoholic beverages in the US than is exported to feed the hungry in the world's 25 most undernourished countries combined.
- About one-third of the total US soybean crop is exported; 70 percent of US soybean exports went to 28 industrial OECD countries in 1996.
- No soybeans were exported to Category 5 countries in 1996, while 17.8 million metric tons went to OECD countries.
- In 1998, a year of record-low soybean prices, the 25 most undernourished countries received less than 0.027 percent of total US soybean exports.

See "**Feeding the World?**"

http://www.iatp.org/foodsec/library/admin/uploadedfiles/Feeding_the_World_The_Upper_Mississippi_River_.htm

"The U.S. Department of Agriculture estimates that more than a billion bushels of

corn went unused last year [2000]." -- University of Wisconsin
<http://www.news.wisc.edu/view.html?get=6810>

Fuel Ethanol and Food Supply, Canadian Renewable Fuels Association --
Extensive production of ethanol from grain will not detract from Canada's ability to feed its own citizens and supply large quantities of high-quality grains to export markets.
<http://www.greenfuels.org/ethafood.html>

Half of US food goes to waste, 25/11/2004 -- As the US celebrates Thanksgiving, a new study reveals that almost half the food in the country goes to waste... The new study, from the University of Arizona (UA) in Tucson, indicates that a shocking forty to fifty per cent of all food ready for harvest never gets eaten... Not only is edible food discarded that could feed people who need it, but the rate of loss, even partially corrected, could save US consumers and manufacturers tens of billions of dollars each year.
<http://foodproductiondaily.com/news/ng.asp?id=56340&n=dh330&c=tzlvrsxywshqwyj>

The real causes of hunger

The United Nations Development Programme says the effects of globalisation and increasing economic integration have led to the rich getting richer and the poor getting poorer in nearly every way.

UN statistics provide evidence of the widening gap between rich and poor: In nine years, the income ratio between the top 20% and the bottom 20% has increased from 60:1 to 74:1. Eighty countries have less revenue than they did a decade ago. The assets of the 200 richest people exceed the combined income of 41% of the world's total population. The assets of the top three billionaires are more than the combined GNP of all least developed countries and their 600 million people. The overall consumption of the richest fifth of the world's people is 16 times that of the poorest fifth. About 840 million people are malnourished. Nearly 340 million women are not expected to survive to age 40. Nearly 160 million children are malnourished. More than 250 million children are working as child labourers.

Human Development Report 1999

<http://www.undp.org/hdro/report.html>

UN Human Development Report finds social inequality and poverty increasing worldwide

<http://www.wsws.org/articles/1999/aug1999/un-a06.shtml>

Of the world's 6 billion people, 2.8 billion live on less than \$2 a day, and 1.2 billion on less than \$1 a day.

Global Poverty Report: Genoa G8 Summit July 2001

http://www.worldbank.org/poverty/library/G8_2001.htm

World Development Report 2000/2001: Attacking Poverty

<http://www.worldbank.org/poverty/wdrpoverty/index.htm>

The true picture may even be worse -- both the World Bank and the United Nations Development Programme, which produces the annual Human Development Report, have been accused of massaging the numbers on poverty.

"Global Falsehoods: How the World Bank and the UNDP Distort the Figures on Global Poverty" by Michel Chossudovsky, Professor of Economics, University of Ottawa

http://www.transnational.org/features/chossu_worldbank.html

"World Bank dilutes report -- Agencies claim poverty document was censored"
Guardian (London) September 13, 2000

<http://www.guardian.co.uk/Archive/Article/0,4273,4063044,00.html>

"World Bank cooks poverty statistics" by Chakravarthi Raghavan, Chief Editor of SUNS (South-North Development Monitor), Third World Network Features, August 2000

<http://csf.colorado.edu/mail/homeless/2001/msg00289.html>

Economic growth is projected as the road to overcome global poverty. With economic growth of \$100 the rich 20% of the world population pocket \$83 and the poorest 20% get \$1.40. Global economic growth is therefore a highly inefficient way to help the global poor.

In probably the most comprehensive study to date, Mark Weisbrot, Dean Baker and other researchers at the Center for Economic and Policy Research found that economic growth and rates of improvement in life expectancy, child mortality, education levels and literacy all declined in the era of global corporatization (1980-2000) compared to 1960-1980. "For economic growth and almost all of the other indicators, the last 20 years have shown a very clear decline in progress as compared with the previous two decades... The poorest group went from a per capita GDP growth rate of 1.9 percent annually in 1960-80, to a *decline* of 0.5 percent per year (1980-2000). By almost every measure, the progress achieved in the two decades of globalization has been considerably less than the progress in the period from 1960 to 1980", especially in the low and middle-income countries. Millions of people who could have escaped a lifetime of poverty under the former rules of market economics under democratic limits were unable to do so under the new rules of global corporate governance. -- **The Scorecard on Globalization 1980-2000 - Twenty Years of Diminished Progress**, by Mark Weisbrot, Dean Baker, Egor Kraev and Judy Chen July 11, 2001

http://www.cepr.net/globalization/scorecard_on_globalization.htm

Wealth extraction causes poverty, and poverty causes hunger.

See [Poverty and hunger](#) -- The causes of poverty, The myth of scarcity

Fuel AND food

In any event, with most biofuels you remove the energy and are still left with the food -- or "feed" more often (for livestock). With ethanol the feed value is enhanced: the distillers dried grains by-product is more nutritious than the original unprocessed grain (because of the yeast). With biodiesel you're left with the oilseed cake after the oil has been pressed out -- again, depending on what seed is used, this is usually a highly nutritious, high-protein livestock feed.

With biofuels you CAN have your cake and eat it.

As for poor countries, local production of biofuels from locally grown crops, where appropriate, can cut dependence and cash expenditure on imported fuels, increase community self-reliance, and provide a spur for local job creation and growth. It can also cut dependence on fuel wood, which is often scarce and causes immense health problems through indoor air-pollution. And, as we've seen above, growing biofuels crops can encourage food-crop production rather than reducing it.