

Social and Gender Dimensions of the Biofuels and Food Debates

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Regional Contexts and Global Issues

- Brazil
- US
- China

**ANNUAL WORLD ETHANOL PRODUCTION BY COUNTRY
(MILLIONS OF GALLONS, ALL ETHANOL GRADES)**

Source: F.O. Licht

<http://www.ethanolrfa.org/industry/statistics/>

COUNTRY	2004	2005	2006
BRAZIL	3,989	4,227	4,491
U.S.	3,535	4,264	4,855
CHINA	964	1,004	1,017
INDIA	462	449	502
World TOTAL	10,770	12,150	13,489

Key Social Dimensions

- Employment and working conditions
- Property Rights
- Intrahousehold decisions & allocation; control of income
- Net producers or consumers, links to food prices
- Technological change, sustainability & resiliency

Brazil

- Largest producer of ethanol for many years without increase in world grain/food prices
- Mainly large farms, not driving people off small farms
- Regional differences, Sao Paulo now produces over 60% of ethanol
- Gendered work, mainly male; many migrants from NE
- Working conditions have been problematic; more mechanization now

Sugarcane Workers Brazil, 2006

Source: Moraes, 2008 from PNAD data 2006

	Workers #	Age Average years	Male Emp. share	Education Average years
Brazil total	532,263	34.5	92%	3.7
North- Northeast	263,291	33.4	95%	2.5
Center- South	268,972	35.6	89%	4.8
Sao Paulo	156,279	36.3	88.1%	5.0

Brazil, cont.

- In 2008, Brazil had been gearing up for more global production opportunities
- Some small-scale production of biofuels from mamona/castor beans in NE for poor women and families
- Need to increase educational opportunities of cane workers and others to help with loss of jobs during mechanization.

U.S.

- Rapid increase in corn-based ethanol production in 2000s; exceeded Brazil by mid-2000s.
- Ethanol plants in US
Jan 2008, 139 plants; by Oct. 2008, 177 plants; 2009 impact of recession
- Highly subsidized

U.S., cont.

- Women not very visible in much of fossil fuel and biofuel process, but engaged at many levels
- Examining small communities in Illinois using CCF
- Social networks, entrepreneurship, social capital -- gender roles in building community capacity and resilience
- Limited employment opportunities
- Impacts of changing technologies and global linkages

Storing maize in fall -- China banned use of food grains for biofuel production in 2007



Biofuels in China

- Began program in early 2000s
- In 2004, compulsory use of 10% ethanol blended in gasoline (E10) in 5 provinces: Helongjiang, Jilin, Liaoning, Henan, and Anhui
- In 2006, expanded E10 program to 27 cities in Shandong, Jiangsu, Hebei, and Hubei

China: Ethanol Production and Subsidies

Source: IISD, 2008

	Units	2004	2005	2006
Production Capacity	Million tonnes	1.14	1.34	1.56
Subsidies	Million RMB	680	730	780
	Million US\$	100	107	115

China, cont.

- Could earn higher incomes as farmers
 - Entrepreneurial activities
 - Cheaper energy
 - Possibly cleaner energy in homes
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- Biodiversity
 - Marginal land
 - Price volatility

Global Gender Aspects and Regional Variations

- Improve understanding of links between food and biofuels
- Land, Property Rights, and Crops
- Net sellers or consumers?
- Impacts on control of income within family
- Changing technologies

Global Gender Policy Issues for Biofuels and Food

- Include gender in analysis of taxes and mandates
- Crises will come -- prepare early
- Social safety net emphasis
 - consider time constraints
 - Early childhood nutrition focus
- Clarify property rights
- Involve women at all levels of policy design and implementation