



International Centre for Trade
and Sustainable Development

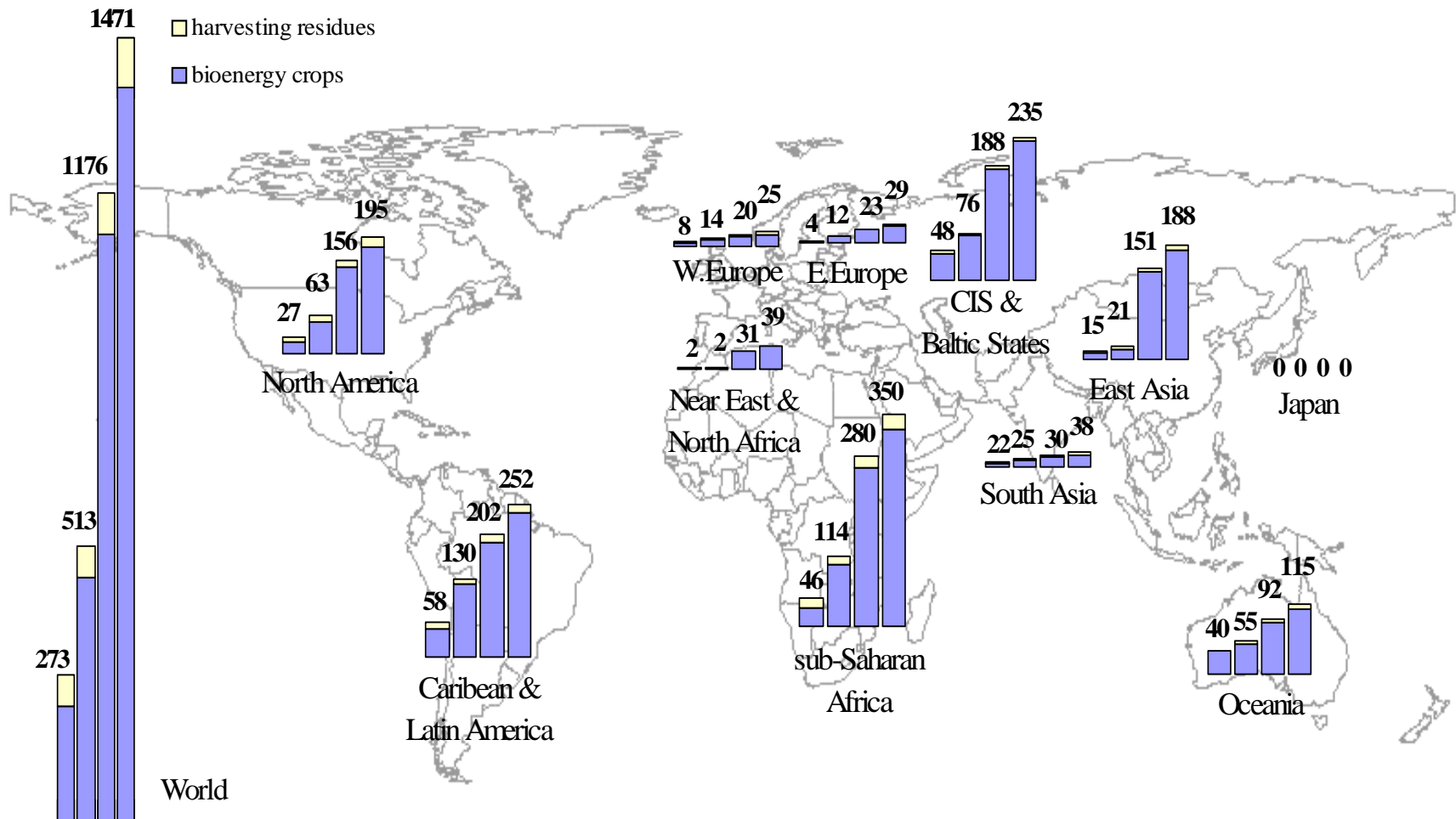
Biofuels Production, Trade and Sustainable Development: Legal and Policy Issues

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Estimated long-term technical production potential



Source: Faaij, 2007

A Global Policy Agenda

- **US:** 35 billion gallons of renewable and alternative fuels available by 2017, from some 6.2 billion gallons of ethanol in 2007
- **EU:** EU: mandatory target that biofuels must provide 10 percent of member states' transport fuels by 2020
- **Brazil:** in addition to ethanol blending targets, all diesel fuel must contain 2% biodiesel by 2008, increasing to 5% by 2013
- **Columbia** mandates the use of 10% ethanol in all gasoline sold in cities with populations exceeding 500,000
- **Japan:** long-term intention of replacing 20% oil demand with biofuels or gas-to-liquid (GTL) fuels by 2030.
- In **Canada**, the government aims for 45 percent of the country's gasoline consumption to contain 10 percent ethanol by 2010.
- **Thailand** has mandated an ambitious 10 percent ethanol mix in gasoline starting in 2007.
- **China** is making E10 blends mandatory in five provinces that account for 16% of national passenger cars
- Several African countries including **Ethiopia, Ghana, Kenya, Malawi, Nigeria, Senegal, South Africa**, and **Zimbabwe plan** to expand biofuels production and use (Worldwatch 2006)

World Biofuels Consumption by Scenario (Mtoe)

	2004	2010		2015		2030	
		RS	AS	RS	AS	RS	AS
OECD	8.9	30.5	34.7	39.0	51.6	51.8	84.2
North America	7.0	15.4	17.4	20.5	28.8	24.2	45.7
<i>US</i>	<i>6.8</i>	<i>14.9</i>	<i>16.4</i>	<i>19.8</i>	<i>27.5</i>	<i>22.8</i>	<i>42.9</i>
<i>Canada</i>	<i>0.1</i>	<i>0.6</i>	<i>1.0</i>	<i>0.7</i>	<i>1.3</i>	<i>1.3</i>	<i>2.8</i>
Europe	2.0	14.8	16.4	18.0	21.5	26.6	35.6
Pacific	0.0	0.3	0.8	0.4	1.4	1.0	2.9
Transition economies	0.0	0.1	0.1	0.1	0.2	0.3	0.5
Russia	0.0	0.1	0.1	0.1	0.2	0.3	0.5
Developing countries	6.5	10.9	14.0	15.3	21.1	40.4	62.0
Developing Asia	0.0	1.9	4.6	3.7	8.5	16.1	32.8
<i>China</i>	<i>0.0</i>	<i>0.7</i>	<i>1.2</i>	<i>1.5</i>	<i>2.7</i>	<i>7.9</i>	<i>13.0</i>
<i>India</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2</i>	<i>0.3</i>	<i>2.4</i>	<i>4.5</i>
<i>Indonesia</i>	<i>0.0</i>	<i>0.2</i>	<i>0.3</i>	<i>0.4</i>	<i>0.6</i>	<i>1.5</i>	<i>2.3</i>
Middle East	0.0	0.1	0.1	0.1	0.1	0.5	0.6
Africa	0.0	0.6	0.7	1.1	1.2	3.4	3.5
<i>North Africa</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.6</i>	<i>0.5</i>
Latin America	6.4	8.4	8.6	10.4	11.2	20.3	25.1
<i>Brazil</i>	<i>6.4</i>	<i>8.3</i>	<i>8.6</i>	<i>10.4</i>	<i>11.0</i>	<i>20.3</i>	<i>23.0</i>
World	15.4	41.5	48.8	54.4	73.0	92.4	146.7

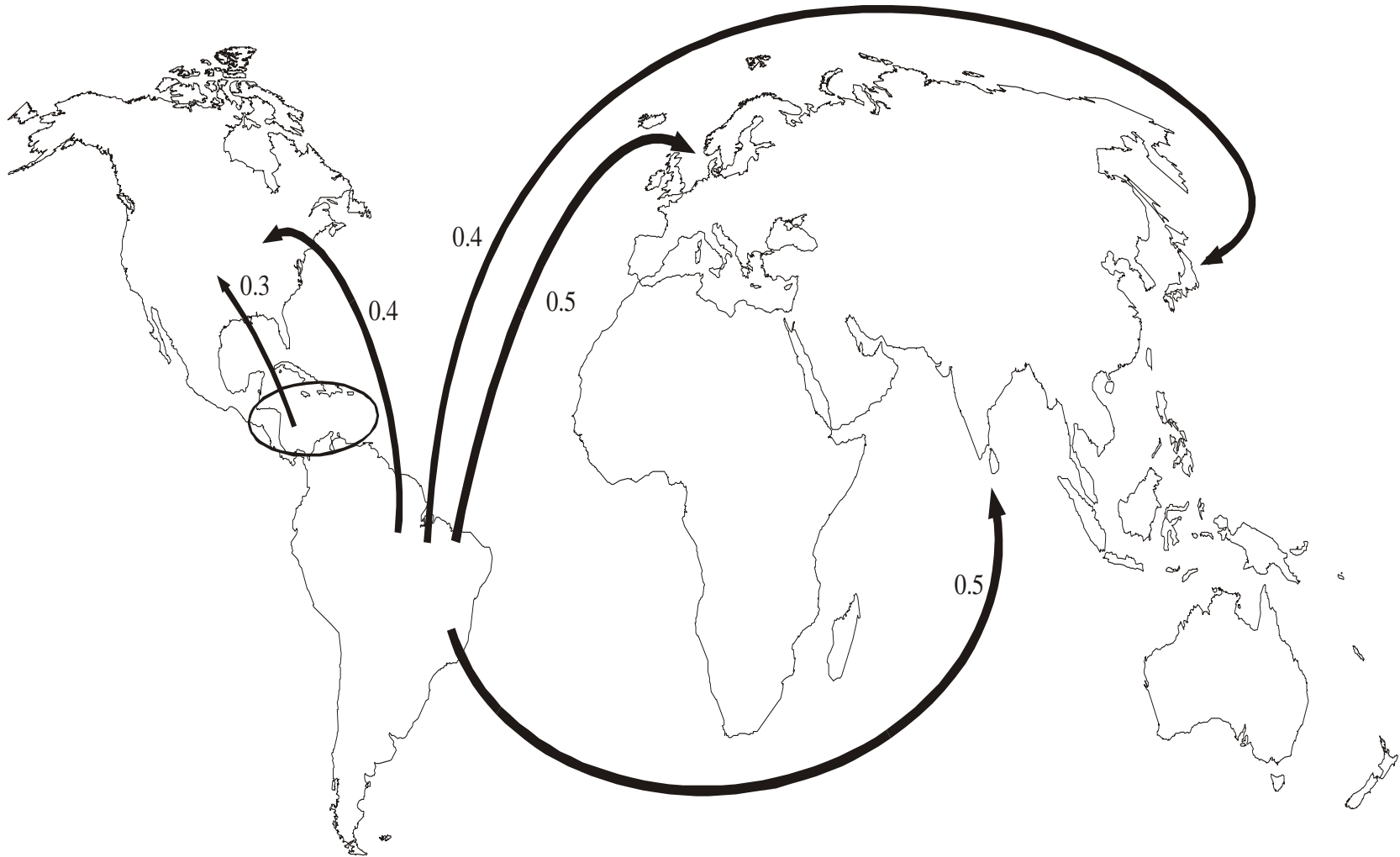
Source: IEA 2006 Note: RS = Reference Scenario; AS = Alternative Scenario.

Production costs of ethanol

Country	Feedstock	Production cost (US\$/litre)
Brazil	Sugar cane	0.20
India	Sugar cane	0.40
United States	Maize	0.80
United Kingdom	Sugar beet	0.97
Europe	Wheat	0.76
Zambia	Sugar cane	0.50

Goldemberg et al. ICTSD, forthcoming. Sources: UK DTI 2003; USDA, 2004

Major ethanol trade streams in 2004, in BI. The total volume of the trade was approximately 4 GI in 2004



Sources: Rosillo-Calle and Walte, 2006, Walter et al., 2007, in A. Faaij, ICTSD, forthcoming.

Ethanol exporting/importing countries in 2005

Import	%	Export	%
USA	18	Brazil	48
Japan	11	USA	6
India	8	France	6
Germany	8	S. Africa	6
Netherlands	8	China	5
UK	6	UK	5
Korea	5	Netherlands	4
France	4	Germany	2
Others	32	Others	18

Source: Walter et al., 2007, in A. Faaij, ICTSD, forthcoming.

Key trade and sustainable development questions

- ❖ There is an emerging global market, with serious indication that global trade in bioenergy is likely to grow.
- ❖ A fundamental question is: *how can we make sure that such a global trade promotes sustainable development?*
- ❖ A subsequent question being: *what role can trade policy and trade regulatory frameworks play to that effect?*

Key sustainable development considerations

- ❖ Delivering opportunities for economic growth and development
- ❖ Ensuring environmental sustainability, including climate change benefits
- ❖ Promoting social development, improved livelihoods and equity

Opportunities for economic growth and development

- ❖ Trade that leads to economic diversification and value addition
 - ❖ The “primary commodity supply lock-in effect”: markets in the north will tend to operate in such a way that producers in the south will grow and provide raw materials (palm oil, pure vegetable oil, soy) for processing in the north, leading to no or little value-addition in poor countries.
 - ❖ E.g. EU *ad valorem* equivalent tariff on biodiesel (end product) is 6.5 percent. It is between 3.2 to 5.1 percent for vegetable oils destined for technical or industrial, while oilseeds, such as soybeans, have duty-free market access >>> “the cotton syndrome”
- ❖ Tariff reform: Brazilian exporters face tariffs that add 25 percent to the price of their product in the United States, and over 50 percent in the European Union
- ❖ Disciplines on subsidies: The total of subsidies provided by OECD governments in 2006 amounted to at least US\$ 11 billion dollars (Global Subsidies Initiative, 2007).
- ❖ Potential liberalisation of biofuels under negotiations on environmental goods and services (Doha paragraph 31(iii))
- ❖ Trade benefits that trickle-down to low producers: The trade system can provide opportunities for trade, but is ill-equipped to guarantee fair distribution of benefits from trade (domestic policy matter)

Environmental sustainability

- ❖ Unregulated global trade in bioenergy likely to lead to surge in production at the cost of the natural environment and ecosystems, food security and imbalances in agricultural markets.
 - ❖ Is certification the answer?
- ❖ The international trade system (WTO agreement on technical barriers to trade) allows countries to adopt technical regulations on conditions of non-discrimination and transparency, making use of existing international standards.
- ❖ The problem: there are no internationally agreed sustainability criteria on biofuels.
- ❖ Impact on developing countries: Increase in production cost
 - ❖ Meeting some of the proposed criteria would increase total production costs of bioethanol in Brazil by between 35 and 88 percent (Smeets *et al.* 2006)

Biomass certification and its trade implications

Criteria in line with WTO when:	Remarks
Related to post-import impacts	Visible in physical characteristics of the product
Voluntary and based on consumer preference, unspecified to a specific product	These can include environmental or socio-economic criteria
Needed to protect human, animal or plant life or health or relating to conservation exhaustible natural resources (GATT Art XX)	Criteria can be mandatory – criteria applicable are e.g. air emissions or GHG balance
Internationally agreed upon with broad consensus	More complicated for criteria with impacts on local / regional level
No international provisions exist within WTO for linking trade with social issues and labour standards	Socio-economic criteria through voluntary standards possible at this stage

A. Faaij, ICTSD, forthcoming.

Social development, improved livelihoods and equity

- ❖ Food security: The WTO is not the best forum for addressing this problem from a social point of view. This will relate more to domestic policy and intervention by other international bodies.
- ❖ Labor standards, as they relate to the prohibition of forced labor or child labor are a body of international law deemed applicable in the trade domain. However, the international trade system has no mechanism that guarantees prices to the producers. In fact, price support measures are considered subsidies, and therefore *a priori* prohibited.
- ❖ There is a risk that meeting global demand overrides local energy needs e.g. Guatemala is a large producer of ethanol, but virtually all of which its production is destined for export.
- ❖ Equity: Free markets will favour needs of urban and global markets against those of rural markets: pure vegetable oil (e.g. from Jatropha) can be produced and directly use as a cooking fuel or to power water pumping systems in rural areas; but once turned into biodiesel it becomes a commodity for the urban, not rural markets.

Concluding points

- ❖ Trade policies and trade regulatory frameworks should provide conditions for fair and equitable market access
- ❖ There is need for an effort to better integrate environmental and social standards in the trade system – but a first step is to devise agreed norms at the international level
- ❖ Global policy coherence and policy intervention at the national level are, at present, better tools for dealing with many of the non-trade concerns related food security, social justice and environmental sustainability



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Thank you

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