The Food vs. Fuel Debate

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In the news... and often

High and volatile food prices are the new normal: we must act now.

Poor people are being hit hard. The international community must invest in agriculture, crop diversification and rural livelihoods.

In the news... and often

US corn ethanol cut poor nations $6.6 bln - study

10 Years Of Driving Sustainability. A Business Model For The Future.
Food availability

• Population growth
  – More mouths to feed, mostly in developing countries and in cities
• Shifting dietary trends
  – More protein, more calories
    • Dietary diversification and adaptation (urban lifestyle > convenience foods)
    • Vegetable oil a major contributor to increased calorie intake
• Do we produce enough food?
  – Currently, yes
  – Food distribution is the primary challenge

Hunger dimensions

• Hunger is a multidimensional phenomenon
  – poverty and food availability, food access, nutritional balance, etc.
• Most food insecurity is in rural South and SE Asia
  – rural poor tend to be ‘net’ food purchasers
  – hidden hunger: lack of dietary diversity and poor quality food intake
• Significant vulnerability to drought and other disasters
  – 350 million affected in 2010; mostly in Asia and sub-Saharan Africa
  – many of those affected already suffering from acute food-insecurity
Future food production requirements

• Future agricultural production needs a major boost
  — Production must grow 60% above 2005-07 levels to meet 2050 needs
• More of the same?
  — 170% production growth since the 1960s mostly due to increased yield
    • Intensification at a cost?
    • The role and significance of new technological applications?
• Land availability constraints
  — 12% of all land areas currently cropped; not many options available
    • Best expansion prospects in LatAm and sub-Saharan Africa

Oilcrops

• Steady increase in global demand
  — Two decades of growth in developed and developing markets
    • Annual growth of 4.3% compared with 2.3% for all agriculture
    • 40% of the growth increase due to developing country food demand (e.g., China)
    • Strong demand for protein rich livestock feed
• A handful of crops dominate
  — 168 million tonnes of oilseeds and oilcrops gathered in 2010
  — Oil palm, soybean, rapeseed and sunflower-seed: 75% all production
    • 40% of supply used in non-food applications, and increasingly biodiesel
Oilpalm affordability

Sources:
FAO (L) / UNCTAD (R)

World prices for selected edible oils

Palm oil price trend and forecast

Sources: FAO (L) / UNCTAD (R)

Oilpalm productivity

Sources: FAO (L) / Lester, 2006 (R)

Oilcrop yields / ha / year (2002-2004 ave.)

Competitive biodiesel yield
Projected growth in biofuels

Trends and forecast in biofuel growth

Share of edible oil as biodiesel by country / region

Policy developments

<table>
<thead>
<tr>
<th>Country</th>
<th>Policy Details</th>
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<tbody>
<tr>
<td>China</td>
<td>12th Five-Year Plan: goal of utilizing 5 million tonnes of bio-ethanol</td>
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<tr>
<td></td>
<td>No promotion of biodiesel</td>
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<tr>
<td>EU</td>
<td>Renewable energy policy: Plans to limit food-based biofuels to 5% of all transport fuel by year 2020 (effectively the same as current usage)</td>
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<tr>
<td>India</td>
<td>National Biofuel Policy: Indicative target of 20% blending of biofuels by 2017</td>
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<tr>
<td>Indonesia</td>
<td>Renewable Energy Policy: Raised subsidy for biodiesel manufacturers in 2012</td>
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<tr>
<td>Malaysia</td>
<td>Renewable Energy Policy: Implemented mandatory sale of palm oil-based biodiesel (B5) in parts of the country</td>
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<tr>
<td>USA</td>
<td>Renewable Energy Policy: Determined that palm oil-based biodiesel does not qualify as renewable fuel under US bioenergy policy due to insufficient reduction in GHG emissions</td>
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A basis for sustainable palm oil biodiesel?

- Grow on degraded land
  - Low conservation value and low carbon stock
- Reduce GHG emissions at mills
  - Methane capture and other technologies
- Develop regional export markets (India and China)
  - Complement 1\textsuperscript{st} and 2\textsuperscript{nd} generation domestic biofuel developments
- Comply with BEFSCI\textsuperscript{*} principles: bioenergy production should be...
  - ...sustainable and should safeguard and, if possible, foster food security

\textsuperscript{*} Bioenergy and Food Security Criteria and Indicators (FAO)