

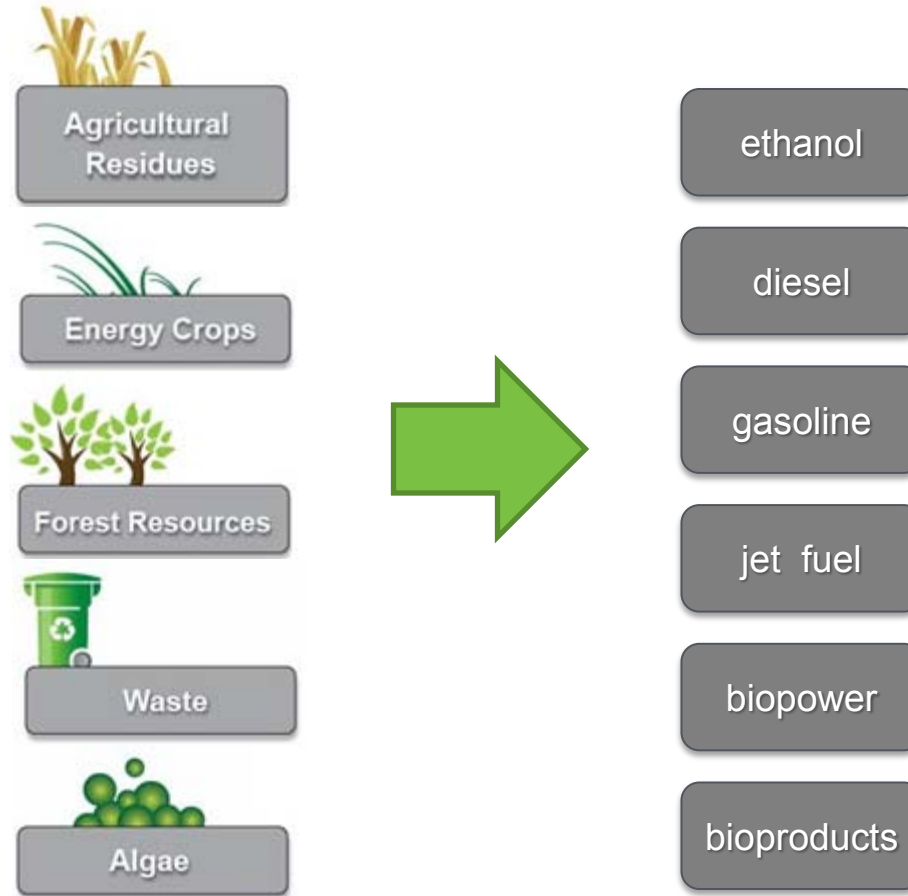


**Sustainability for the Global Biofuels
Industry: Minimizing Risks and
Maximizing Opportunities**

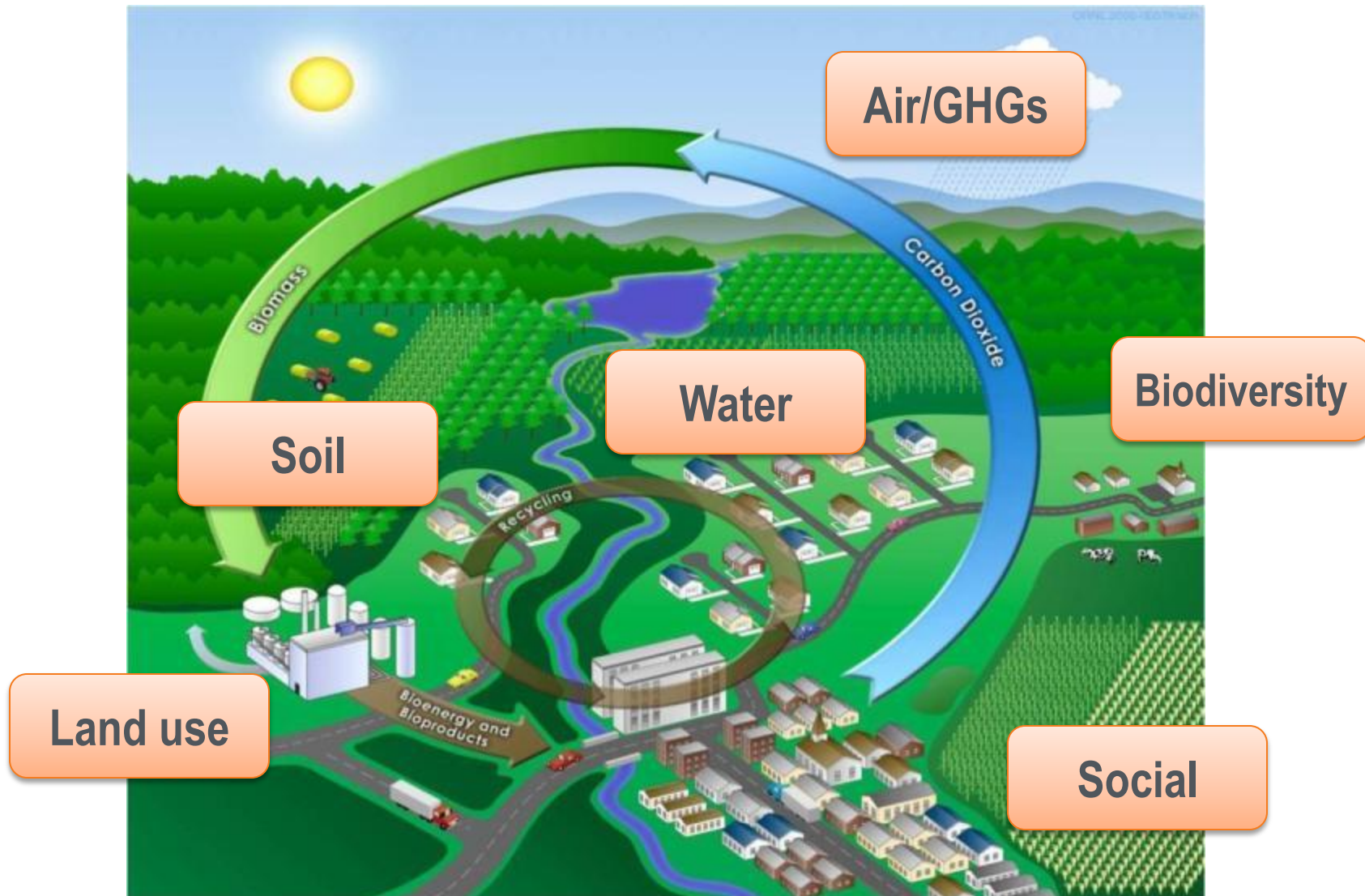
May 17, 2011

Ranyee Chiang, AAAS Fellow,
hosted by the DOE Biomass Program

Bioenergy – Multiple feedstocks and multiple products



Bioenergy systems and impacts



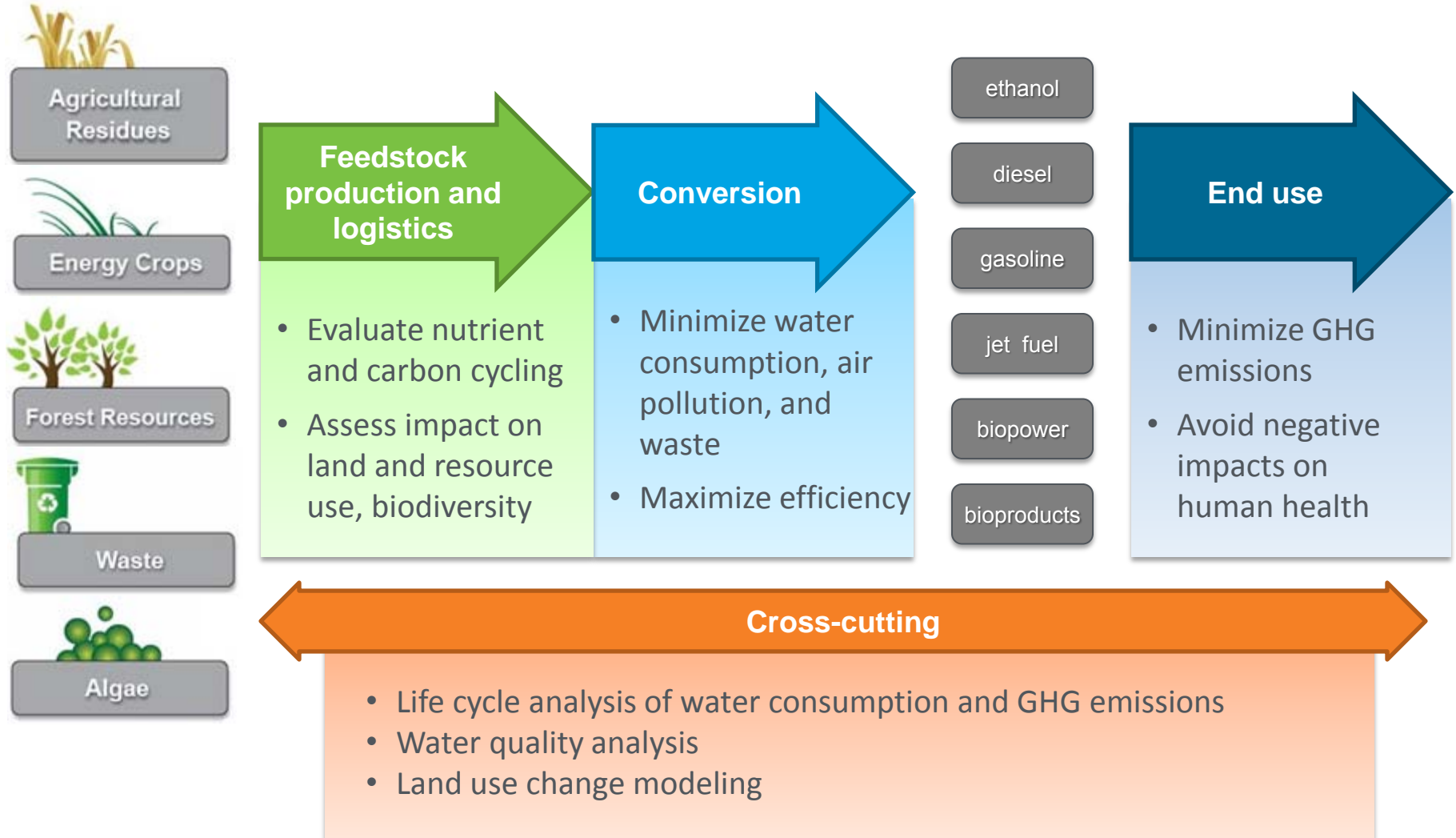


- Cost of production
- Price
- Return on investment
- Long-term market strategies
- Opportunities for all stakeholders along supply chain
- Improve fuel properties

- Energy diversification and security
- Energy access
- Net energy balance
- Rural development and workforce training

- Climate
- Soil quality and agronomics
- Water quality and quantity
- Air quality
- Biological diversity
- Land use

Sustainability across the Biomass Program



- Areas of high biodiversity
- Direct and indirect land use change
- Sustainable markets
- Water availability
- Energy access
- Food security



- Providing data and analysis to inform a variety of U.S. and international discussions on sustainability standards
 - **Council on Sustainable Biomass Production**
 - **Global Bioenergy Partnership**
 - **International Standards Organization**
 - **Roundtable on Sustainable Biofuels**
- Bioenergy chapter of IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation

Sustainability, LUC, Data & Modeling

Maggie Stevens, Keith Kline, Oak Ridge National Laboratory

Helena Chum, National Renewable Energy Laboratory

- Brazil-US Co-sponsorship of Sustainability Research
 - Improve understanding of key sustainability variables (land use change, sustainable feedstock production) and identify incentives to increase positive effects of energy production
 - Research improves sustainable cellulosic supply estimates and market analysis
- Approach: Develop Improved Sustainability Assessment Capacity
 - Data, methods and tools for modeling and Land-Use Change (LUC) analysis
 - Define parameters and monitoring protocols; test hypotheses





BIOENERGY KNOWLEDGE DISCOVERY FRAMEWORK U.S. DEPARTMENT OF ENERGY

Budhu Bhaduri, Aaron Myers, Sunil Movva et al. Oak Ridge National Laboratory

- Collaboration, data management, analysis, and visualization tools designed to support bioenergy infrastructure research
- Integrates bioenergy spatial data with socioeconomic and industrial factors to improve planning, development, and management decisions



Visit bioenergykdf.net



- Introduction to Sustainable Biofuel Crops Project (Christine Dragisic)
- Global spatial analysis: Identifying risks and opportunities for feedstock production (Jenny Hewson)
- Responsible Cultivation Areas (Christine Dragisic)
- Analysis and tools for sound decision making (Christine Dragisic)
- Brazil field study: forest restoration in sugarcane landscapes (Lucio Bede)
- Indonesia field study: land use planning field study in oil palm landscapes (Christine Dragisic)
- Policy engagement: US, Guatemala, Suriname, Ecuador (Manuel Oliva)
- Roundtable engagement and developing markets for sustainably produced biofuels (Tim Killeen)
- Future priorities and discussion (Chris Dragisic)

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<http://www1.eere.energy.gov/biomass/>