Oil Seeds to Jet Fuels: The Community Connection

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Context

- Decreasing world-wide demand for carbon-based fuels
- Changing, unstable global energy markets
- National energy policies now place more emphasis on renewable energy
- Concerns related to production, transportation and consumption
  - Greenhouse gases & air pollution
  - Jobs
  - Contamination of water and soil
Renewable Energy & Biomass

- New ways to generate energy
- Reduces nonrenewable fossil fuel use
- Based on renewable natural capital
New sources of renewable energy

BUT – the pressure is for drop-in technology. Anything too innovative, such as hydrogen, would require way too much re-engineering.
• Align interests along the supply chain
  • Effective networks
    • Agricultural community
      • Extension
      • Farmers Organization
    • Business networks
      • Elevators
      • Local processing
  • Farmer adoption
  • Outreach and Extension needs
Natural Capital

- Climate/weather – increasing volatility
  - wheat systems shifting to corn-soybean systems
- Oil quality
- Erucic acid content
- Harvest/standability
- Timing of harvest
- New pests
- Some interested in cover crops
- Rotation advantages
Cultural Capital

• Continuous planning
• Identity as
  • Independent
  • Innovative
  • Risk manager
• Value complexity
• Moderate tolerance of risk
• Concern for soil quality
Human Capital

- Farmers’ preferred methods of gaining information
  - field days; seminars; face-to-face
  - community education events; internet.

- Knowledge of
  - Market alternatives; Production alternatives;
  - Trustworthy sources of information

- Labor availability (seasonality of labor use)

- Risk aversion

- Willingness to change in light of new opportunities provided by
  - New markets; New production systems; New climate conditions; New technology availability
Social Capital

• Existing canola grower organizations
  • Can other crop associations be involved seeing oil seeds as a rotation/cover crop?
  • Link to direct seeding and shared concern with soil quality

• Trust in the players in the supply chain
  • Community linkages important

• Contact with trusted person with authority
Political capital

• Terms of crop insurance
  • Need production record to be covered
  • Coverage while transitioning
  • Yield insurance
  • Price insurance

• Tax credits for inputs and machinery

• Dependency on monopsony buyers
1978 **Energy Tax Act**: Fed gasoline excise tax exemption for blenders of ethanol of 4 cents per gallon for a blend of up to 10% ethanol.

1980 **Energy Security Act**: Created a loan guarantee program for the construction of ethanol plants.

1980 **Crude Oil Windfall Profit Tax Act**: Ethanol excise tax exemption was extended until 1992 and an income tax credit of 40 cents per gallon was created.

1980 **Omnibus Reconciliation Act**: Ethanol import tariff was created.

1980 **Gasohol Competition Act**: Prevented gasoline marketers from discouraging the use of gasoline blended with ethanol.

1982 **Surface Transportation Assistance Act**: The excise tax exemption was raised to 5 cents per gallon of gasohol and gas excise tax was raised to 9 cents.

1984 **Tax Reform Act**: Excise tax exemption increased to 6 cents per gallon of blended gasohol, income tax credit raised to 60 cents per gallon of ethanol.
Policy History of Alternative Fuels

- **1990 Clean Air Act Amendments**: Required gasoline in 31 urban areas to contain higher percentage of oxygen to reduce air pollution, ethanol fulfilled this requirement.
- **1998 Transportation Efficiency Act of the 21st Century**: Lowered excise tax exemption to 5.1 cents per gallon of gasohol, lowered income tax credit to 51 cents per gallon of ethanol and extended both through 2007.
- **2004 American Jobs Creation Act**: Replaced the excise tax exemption with a tax credit and renamed the program the Volumetric Ethanol Excise Tax Credit (VEETC).
- **2005 Energy Policy Act**: Created the Renewable Fuels Standard (RFS) mandating the production of 7.5 billion gallons of ethanol to be blended by 2012.
• Local market for co-product
• Crop insurance
• Contracts/futures/hedging
• Risk management/diversity
• When paid
• Price
• Storage fees
• Shipping fees (how far to the purchase point)
• Local capital willingness to invest in pressing plant
• City or county willingness to float bonds to build a plant
Built Capital

- Field Equipment
- Elevators/storage
- Crushing plants
- Processing plants
- Transportation
- Herbicide/chemicals
Feedstock development does not guarantee feedstock production

• This will require a risky shift
  • Overcoming accustomed ways of cropping, harvesting and marketing

• In an era of distrust of government (although the Armed Forces may have more credibility)

• Willing to share information with private companies to reap advantages of “big data”, but not with public agencies or universities
When community matters

• Transparent negotiation of contracts as mechanisms of coordination
  • Past negative experiences with contracts
  • General distrust of government

• Working together to provide the technology and logistics to support oil seed production.

• Negotiate a county-level record to qualify for crop insurance

• Building labor force capacity for harvest, planting and logistics.
  •
Canola and community capitals