

# *Putting Prosperity, People, and Plant in Perspective: The Case of Sustainable Agriculture*



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*Which of these  
represents  
“sustainable  
agriculture”?*



They both could.  
But how would  
we know?



# *What is SUSTAINABILITY?*

- *It is not a four letter word.*
- *It is not a code word for environmental concerns being trump in decision making.*
- *It is not assured by being small; any more than it is assured not to be by being big.*
- *It is about achieving better outcomes across ALL 3 P's: Prosperity, People, and Planet.*
- *Sustainability is a WICKED PROBLEM!*



# *“Wicked Problem”*

## ■ *Rittel & Weber; Conklin*

- No definitive formulation of the problem exists.*
- Solutions are not true or false, but rather better or worse.*
- Stakeholders have radically different frames of reference.*
- Constraints & resources for solution change over time.*
- The problem is never solved.*



# *Sustainability = Wicked Problem*

- *No definitive formulation of the problem exists.*
  - *“A use of resources today is sustainable if it does not constrain the use of resources tomorrow.” Clear but unachievable!*
  - *Triple bottom line (economy, environment, and social justice)*
  - *Prosperity, Planet and People*
- *Solutions are not true or false, but better or worse.*
- *Stakeholders have radically different frames of reference*
  - *Businesses = prosperity*
  - *Environmental groups = planet*
  - *Social justice groups = people*
- *Constraints and resources for solution change over time.*
  - *Power: animal, water, coal, petroleum*
- *The problem is never solved.*

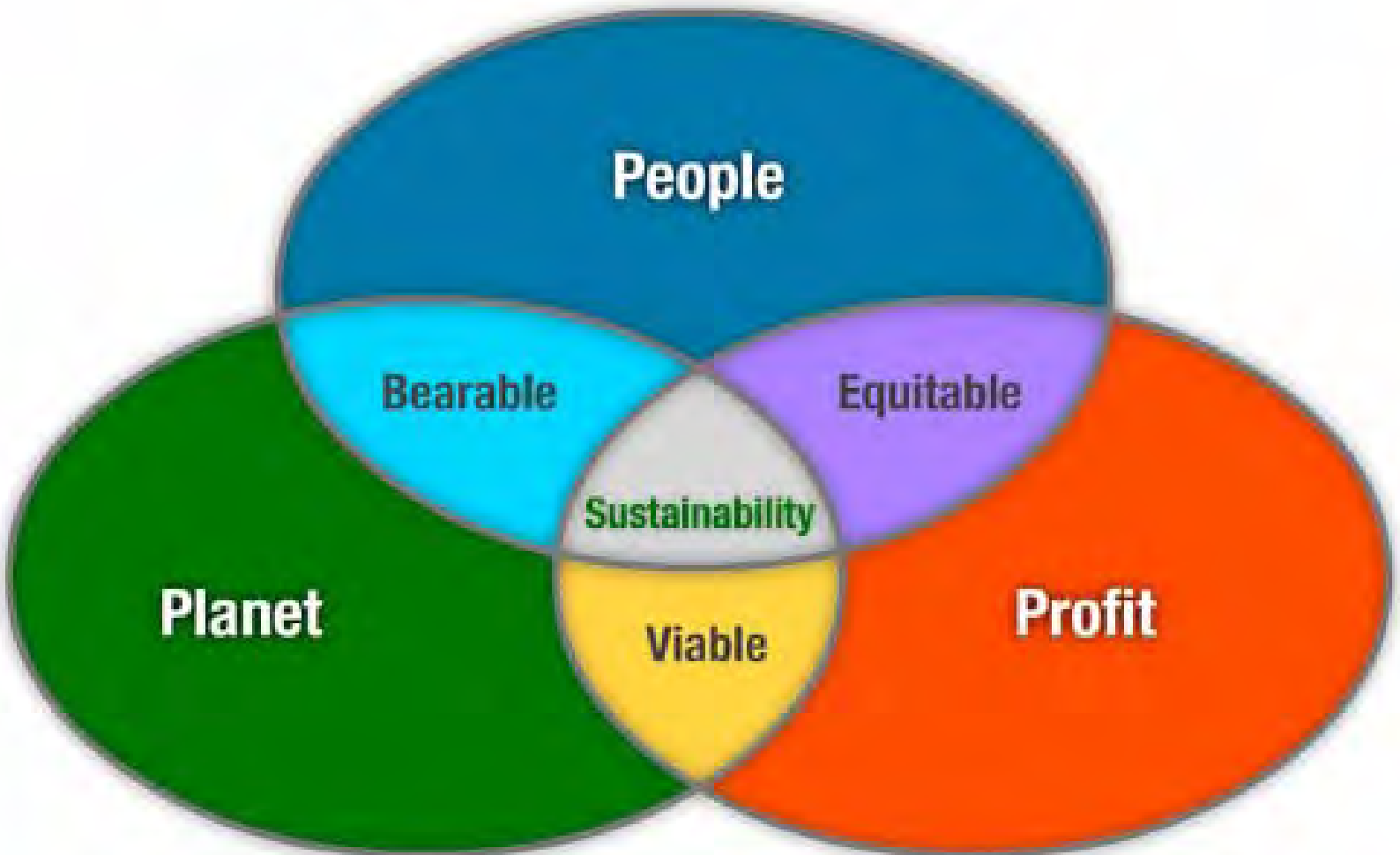


# *Managed, Not Solved!*

- *Wicked problems are not solved; they are managed in such a way as to make progress in a desired direction*
  - *Given actions taken, have we moved toward or away from sustainability?*
- *How is progress against the problem assessed?*
  - *Impact on prosperity, people and plant*
  - *Process engaging relevant stakeholders*



# *Impacts?*



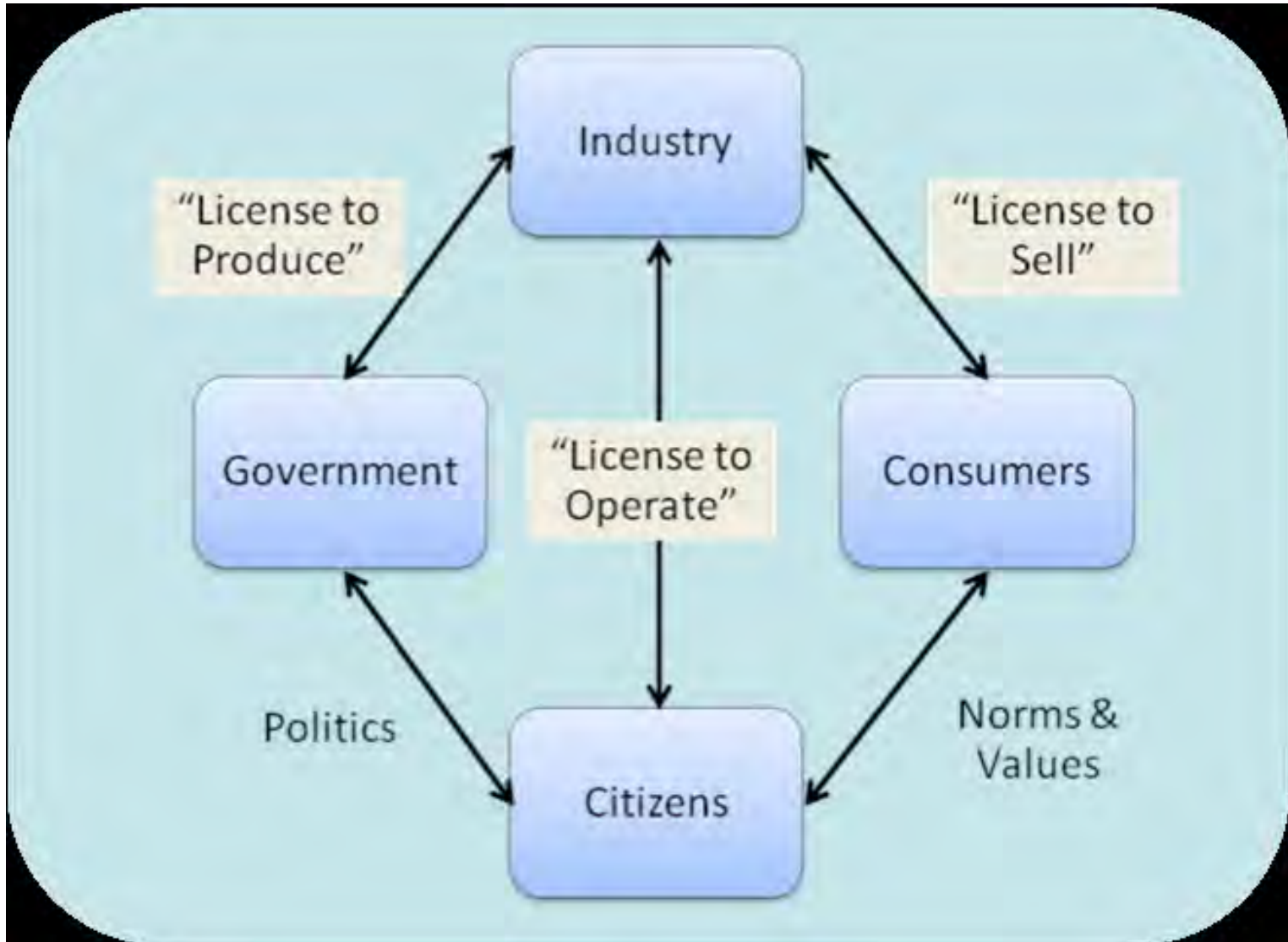
Source: TransForum

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# Stakeholder Process?

Source: TransForum



When you put multiple impacts (3 P's) and multiple stakeholders together, what does managing sustainability look like?



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# *Examples of Managing Sustainability*

- *SAI Platform*
  - *SAI = Sustainable Agriculture Initiative*
  - *Global industry initiative*
- *Brazil's Sugar Cane Industry*
- *TransForum (The Netherlands)*
- *What are the lessons learned?*



# SAI: Created by the Food Industry



# *SAI Platform*

- *To actively support the development of and to communicate worldwide about sustainable agriculture involving the different stakeholders of the food chain.*
- *“Sustainable agriculture is a productive, competitive and efficient way to produce agricultural products, while at the same time protecting and improving the natural environment and social/economic conditions of local communities.”*



# *SAI Action Strategies*

- *SAI Platform conducts activities around:*
  - *Knowledge building & management*
  - *Awareness raising*
  - *Stakeholder involvement*
  - *Support to the implementation of SA practices*
    - *Methods: Case studies; general as well as crop-specific frames to assess agricultural practices; and guidelines for sustainable agricultural practices.*
    - *Working groups: Cereals, Coffee, Dairy, Fruit, Palm oil, Potatoes & Vegetables, Water & Agriculture*
- *Impact on 3 P's and Process*



# Brazil

## SUGAR CANE

- approx. 5 million ha
- 60,000 producers
- all-year-round harvest

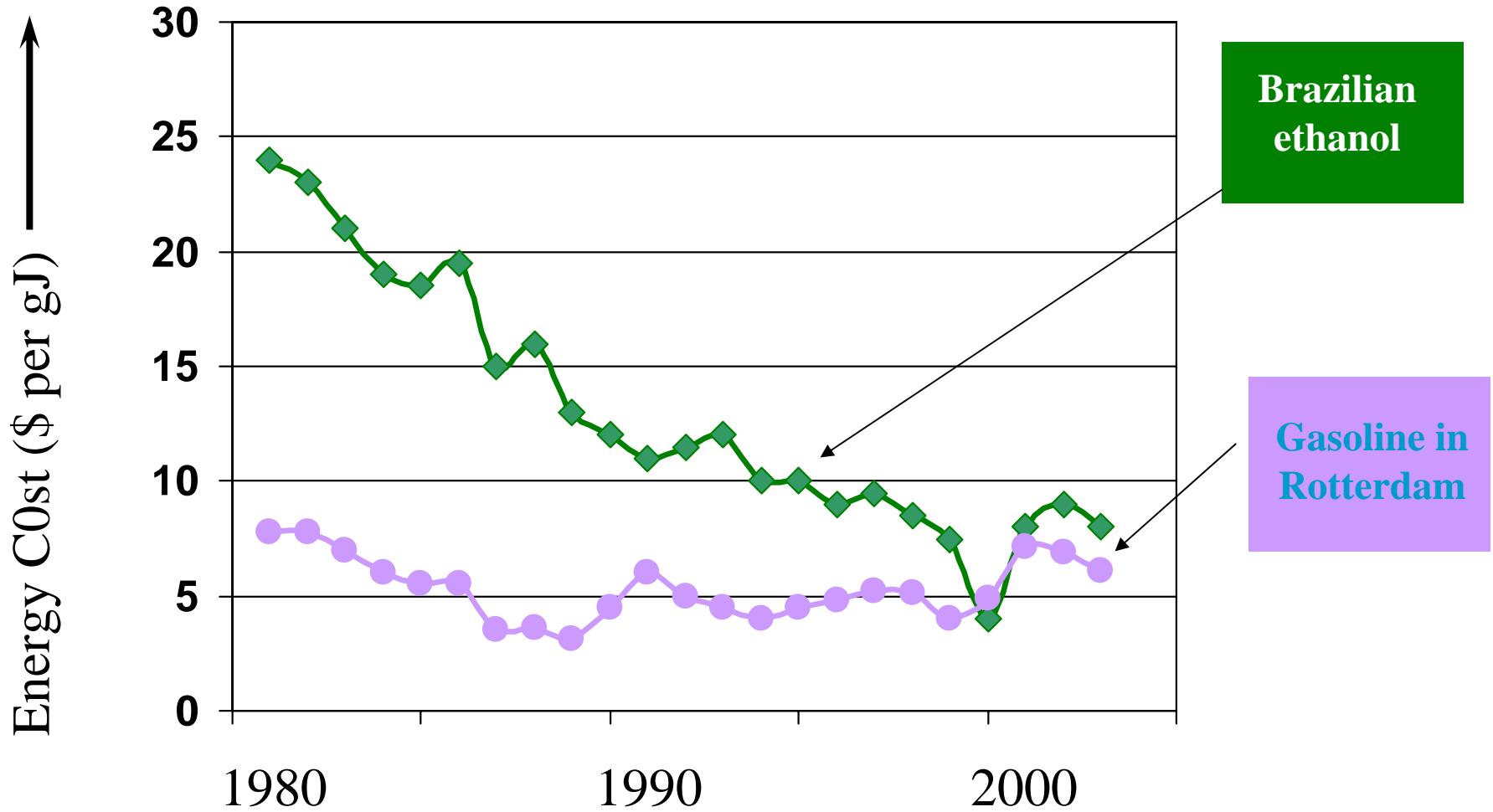
~ 10% of total cultivated land

~ 1% of total land available for agriculture

**N-NE**  
(20% land)  
harvest: sept/march

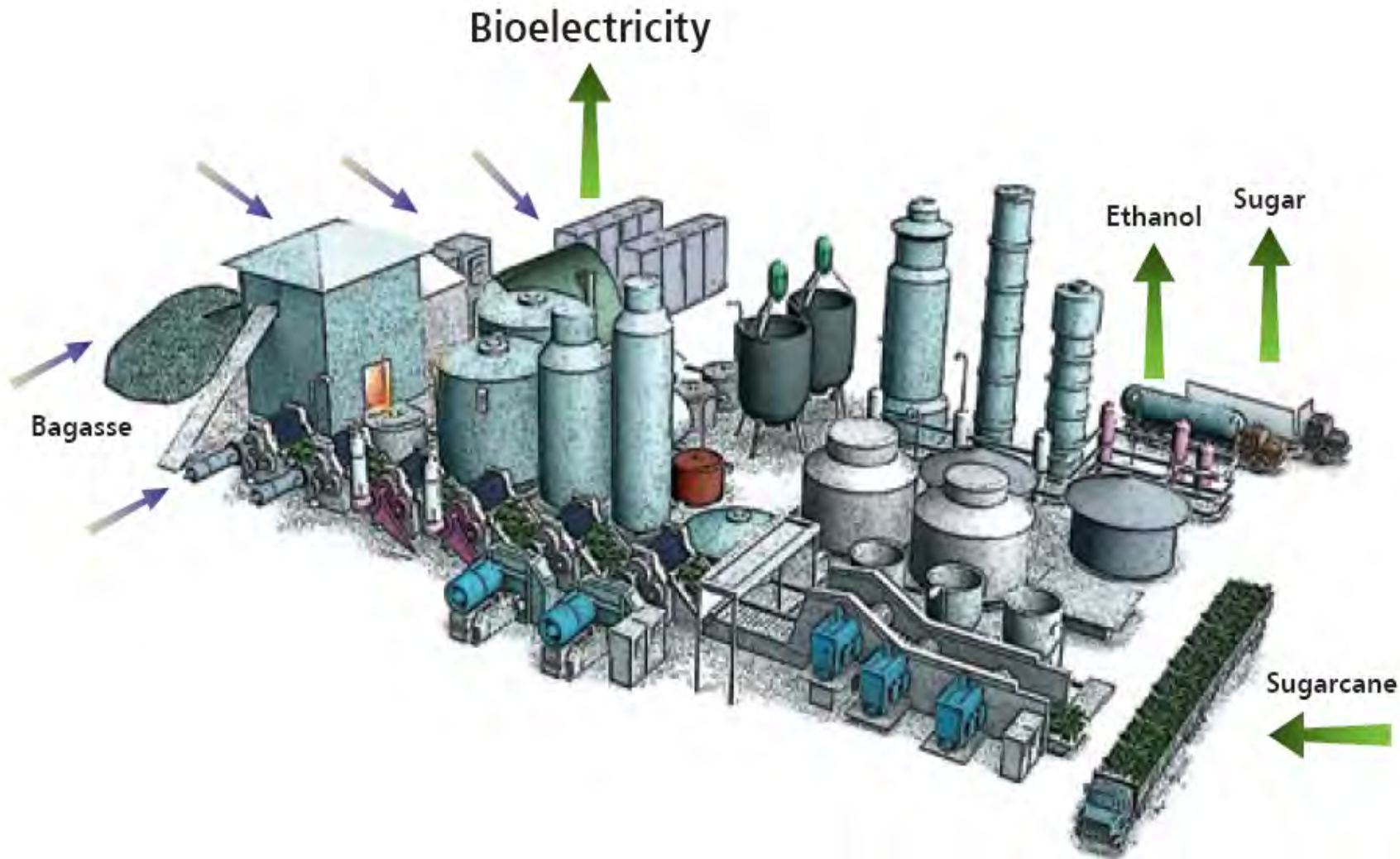
**C-S**  
(80% land)  
harvest: april/november

# The Importance of Sticking to It



-- Goldemberg, 2003

# Brazilian Cane Processor



# *Machine Harvesting of Cane*



*Machine harvesting of sugar cane*



# *Sustainable?*

- *Prosperity: Improved*
  - *Free from importing energy*
  - *Capable of exporting energy*
- *Planet: Improved*
  - *9 barrels of oil equivalent for every barrel put into industry*
  - *Elimination of burning cane fields*
- *People: ???*
  - *Positive impacts of prosperity and plants*
  - *300,000 to 500,000 uneducated, unskilled workers being put out of work in rural Brazil*



# TransForum

- *60 million euros, 50/50 funding partnership between private and public sectors of agriculture in the Netherlands*
- *Goal: Increase the sustainability of Dutch agriculture.*
- *TransForum operates on five working hypotheses:*
  - *Sustainable development is a dynamic system property.*
  - *Sustainable development needs system innovation.*
  - *System innovation is a non-linear learning process.*
  - *System innovation requires active participation of relevant key players from knowledge institutes, governmental bodies, civil society organisations and the business community.*
  - *The program requires transdisciplinary collaboration of all relevant players.*

Wicked  
Problem

How to  
Manage



# *TransForum*

- *TransForum sponsors three types of projects:*
  - *Practice projects (30; the experiments)*
  - *Scientific projects (solutions to specifics; verifying the general)*
  - *Learning projects (establishing a new innovation system)*
- *Collectively projects are managed through . . .*
  - *Co-creation of new knowledge*
  - *Incentives for co-creation*
  - *Innovation from mutual creation through experimental design*
  - *Collective entrepreneurship involving all of the stakeholders*
  - *Shared leadership through extensive guidance committees*



# *Example: Green Care Amsterdam*

- *Concept: Use small urban farm settings to deliver care to clients with anxiety and depression disorders.*
- *Who gains?*
  - *Care institutions: rehabilitation process takes place in society*
  - *National health care organizations: proven interventions*
  - *Knowledge institutions: sustainable engagement; translating experiences to national and European level*
  - *Farmers (102 farmers): professionalization and income stream*
  - *Landzijde: intermediary organization plays a crucial role; professional approach; a national example*
  - *Insurance companies: development of protocols and procedures*
  - *Clients: small scale environment, external focus on ag activities instead of personal problems*



# *So What Are the Lessons?*

- *All three dimensions of sustainability must be addressed: THERE ARE 3 P's!!!*
- *Relevant stakeholders must be at the table.*
  - *If not all, then as many as possible.*
- *New knowledge is central to managing sustainability.*
  - *Existing knowledge is suspect.*
  - *New knowledge is required given no known meta-procedure to “produce” sustainability.*
  - *New knowledge is required about the set of mutual interests among the stakeholders.*
  - *New paradigms are needed to remake tradeoffs (win-lose) into complements (win-win).*



# *So What Are the Lessons?*

- *Tame solutions do not exist for sustainability.*
  - *Not reducible to one set of standards*
  - *Beyond the realm of normal science*
- *Sustainability is managed, not solved.*
  - *Don't get stuck on the definition.*
  - *Monitor progress (strive for better, not ideal).*
  - *Experiment.*
  - *Learn.*
  - *Engage.*





# *“Managing” Sustainability*

- *Given the need for new knowledge and stakeholder buy in, managing sustainability requires a “transformational” process.*
  - *Co-creation of new knowledge*
  - *System innovation achieved through experimental design (e.g. adaptive management)*
  - *Collective entrepreneurship (industry, NGOs, government, academy)*
  - *Shared leadership, e.g. collective engagement, network management*



# *Concluding Thoughts*

- *Wicked problems will be more relevant to what all of us are asked to do.*
- *New knowledge is critical to progress in managing wicked problems.*
- *Multiple stakeholders are needed to share/create the new knowledge.*
- *A transformational process, characterized by co-creation and shared leadership, is essential to achieving progress against wicked problems.*
- *Sustainability is a wicked problem!*
- *Prosperity, People and Plant all matter!*

