

# Indirect Land Use Change due to Bioenergy Production

## ExCo 63 Workshop: The Impact of Indirect Land Use Change (ILUC)

Rotterdam, The Netherlands

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TRADITION of INNOVATION

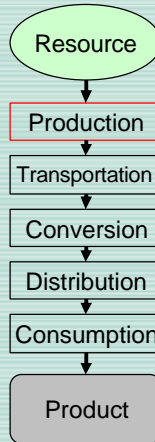
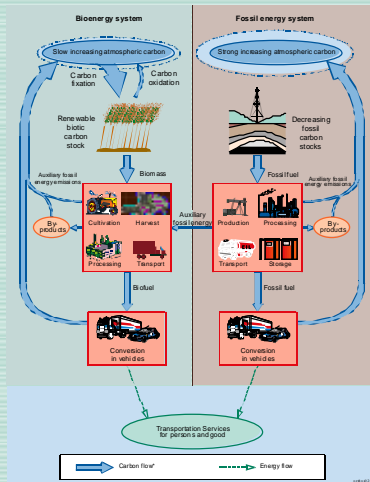
May 09

ISO 9001 certified

## Overview

- Definition
- Example
- Task 38 Meetings
- Solutions

# Task 38 – Standard Methodology



# Comparing Systems

## Bioenergy system

Energy Crop

Food Crop

Food Crop 2

Grassland

Corn

Wheat

Meat

## Fossil fuel system

Food Crop

Food Crop 2

Grassland

Unused land

Corn

Wheat

Meat

## Key Points

- **iLUC must be included in GHG balances**
- **iLUC potentially large**
  - Repayment of GHG debt – 10s of years
  - Timing
- **iLUC not proximal**
- **iLUC → dLUC**
  - if all lands are within the boundary
- **iLUC not limited to bioenergy production on agricultural lands**

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## Task 38 Participation

- **Dubrovnik, 2007**
  - Expert Consultation on Sustainable Biomass
- **Paris, 2008**
  - EEA/OECD Meeting
- **Helsinki, 2009**
  - Land Use Changes due to Bioenergy:  
Quantifying and Managing Climate Change and Other  
Environmental Impacts
    - Direct Land Use Change
    - Indirect Land Use Change

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## Helsinki – Key Presentations

- **Human Appropriated Net Primary Production (HANPP)**
  - H. Haberl, Klagenfurt University
- **dLUC and iLUC and the 10% EU Target**
  - B. Dehue, Ecofys
- **U.S. EPA Analysis for Federal Renewable Energy Fuel Standard**
  - V. Camobreco, U.S. EPA
- **Biofuels and LUC in a Multiple Policy Setting**
  - P. Havlik, IIASA
- **The iLUC Factor Approach**
  - U. Fritsche, Oeko-Institute
- **Brazilian Sugarcane Expansion**
  - G. Berndes, Chalmers University

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## iLUC - Solutions

- **Estimation**
  - Economic modelling
  - Incorporation into LCA
    - iLUC Factor
- **Design**
  - Increase the efficiency of biomass utilization,
  - Increase productivity of agricultural land use
    - Yields
    - Abandoned lands
  - Integrated land use strategies
- **Policy**
  - Include all lands (dLUC)
  - Strong international agreement on REDD

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