

# Sustainability Quick Scan



Translating scientific knowledge  
on sustainability to a wider public

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# Sustainability Quick Scan



- Elske van de Fliert (Zero-e)
  - Combustion technology
  - Mobility solutions
  - Natural Gas / alternative fuel infrastructure
  
- Hans Langeveld
  - Agronomy (Farming systems)
  - Modelling land use, sustainable production
  - Biomass production and utilization
  - Standard for GHG calculation



# Sustainability Quick Scan



## Contents

- Systems for social, sustainability performance
- Dimensions of sustainability
- Data issues
- Sustainability Quick Scan: examples
- Current developments

Zero-e

# Sustainability Quick Scan



## Systems to depict sustainable performance

- Quality standards
  - ISO
  - Eurepgap
- Special markets
  - FSC
- Dedicated institutions
  - RSPO

The logo for Zero-e, consisting of the text "Zero-e" in a blue, handwritten-style font. A blue circle with a diagonal slash is superimposed over the "o".

Zero-e

# Sustainability Quick Scan



## Systems to depict sustainable performance: Cramer commission

- Government assigned
- Technical commission
- Large scale biomass imports
- Three dimensions of sustainability
  - People, Planet, Profit

The logo for Zero-e, featuring the text "Zero-e" in a blue, stylized font. The letter "o" is replaced by a blue circular symbol with a diagonal slash through it. The logo is set against a light blue rectangular background.

Zero-e

# Sustainability Quick Scan



## Dimensions

- GHG emission reduction
  - Alternative systems
- Impact on biodiversity
  - Issue of measuring
- Competition for natural resources
  - Scale

The logo for Zero-e, featuring the text "Zero-e" in a blue, cursive font. A blue circular symbol with a diagonal slash is positioned over the "o".

Zero-e

Table 1: Grading of all standards for the selected criteria. Source: Msimuko et al. (2007)

<u>Standards</u>	<u>GHG emissions</u>	<u>Environment</u>	<u>Biodiversity</u>	<u>Social well-being</u>	<u>Competition with food</u>	<u>Economic prosperity</u>	<u>Traceability &amp; crop management</u>	(total "scores")
<i>SQF 1000</i>	1	1	0	1	1	0	2	6
<i>SQF 2000</i>	0	1	0	1	1	0	1	4
<i>EUREPGAP</i>	2	2	2	1	0	0	2	9
<i>ISO 14001</i>	1	1	0	1	0	0	1	4
<i>SAN</i>	0	2	1	1	0	1	1	6
<i>FLO</i>	0	1	1	1	0	1	0	4
<i>FSC</i>	1	1	2	2	1	1	2	10
<i>SA8000</i>	0	0	0	1	0	0	0	1
<i>Eugene</i>	1	1	0	0	0	0	0	2
<i>Cerflor</i>	0	1	1	2	0	2	2	8
<i>EU regulation 2092/91</i>	1	2	2	1	0	0	2	8
<i>USDA NOP</i>	0	2	2	1	0	0	2	7
<i>IFOAM</i>	1	2	2	2	0	2	2	11
<i>ILO</i>	0	1	1	1	0	0	0	3
<i>EMAS</i>	2	2	2	1	0	0	0	7
<i>ETI</i>	0	0	0	1	0	0	0	1
<i>Green Gold Label</i>	0	1	1	1	0	0	1	4
<i>RSPO</i>	0	1	1	1	1	1	1	6
<i>RTRS</i>	1	1	1	1	0	1	0	5
(total "scores")	11	23	19	21	4	9	19	

0	not included	criterion is <i>not</i> described
1	partly included	criterion is described <i>partly</i>
2	included	criterion is described <i>extensively</i>



# Sustainability Quick Scan



## Data issues

- Data types
  - Disciplines
  - Scientific vs informal
- Availability
- Data interpretation
  - Quantification
  - Labelling

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Zero-e

# Sustainability Quick Scan

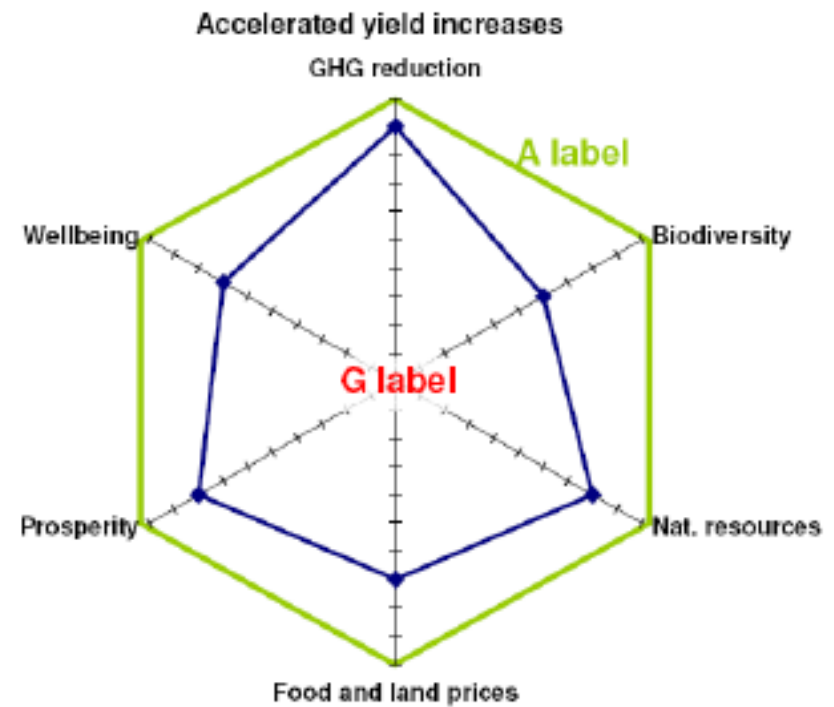
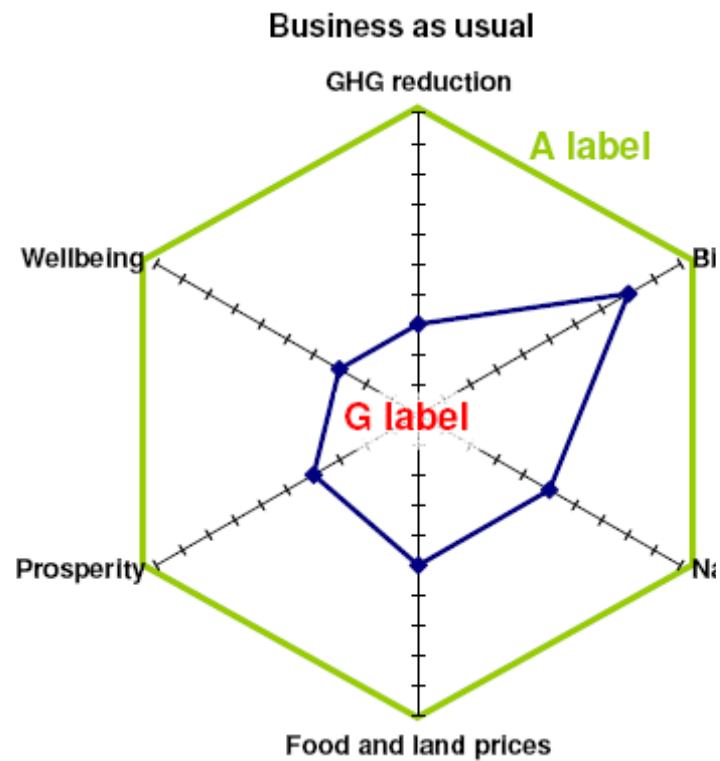


## Applications

- Cane ethanol Brazil
  - BAU vs grassland improvement
- Ukraine biofuel production
- Biogas from energy crops / residues
- Bioethanol in Indonesia
- Biofuel engine performance

Zero-e

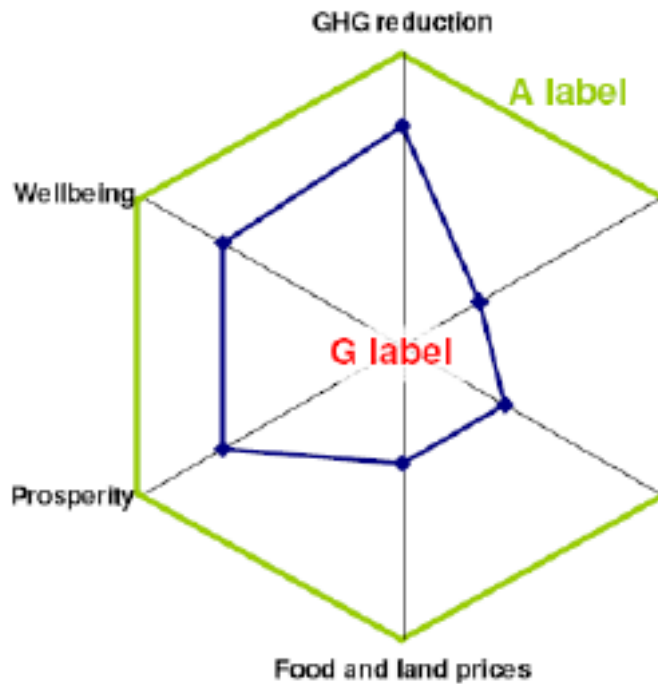
# Ukraine



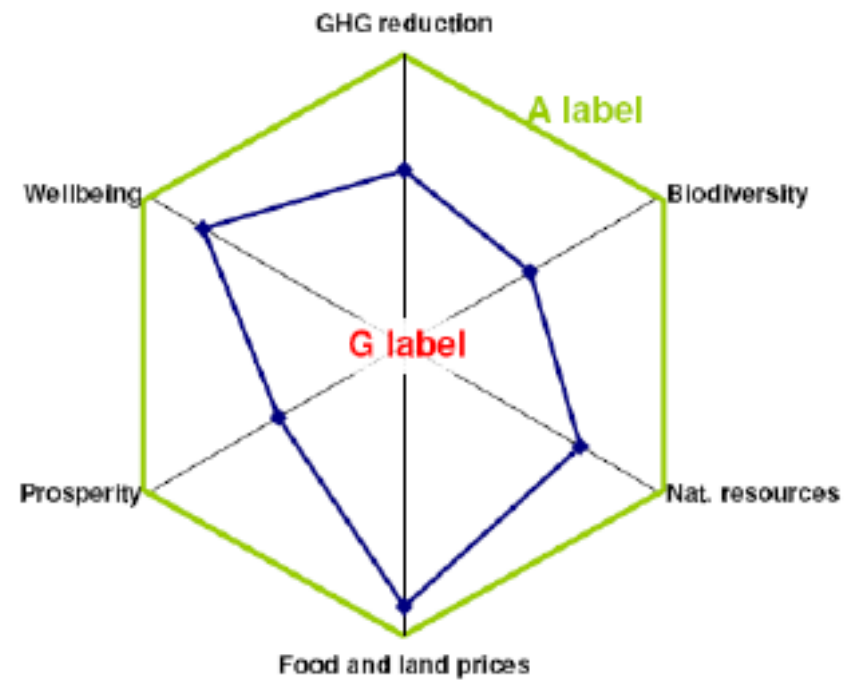
# Bioethanol in Indonesia



Large scale cane ethanol production

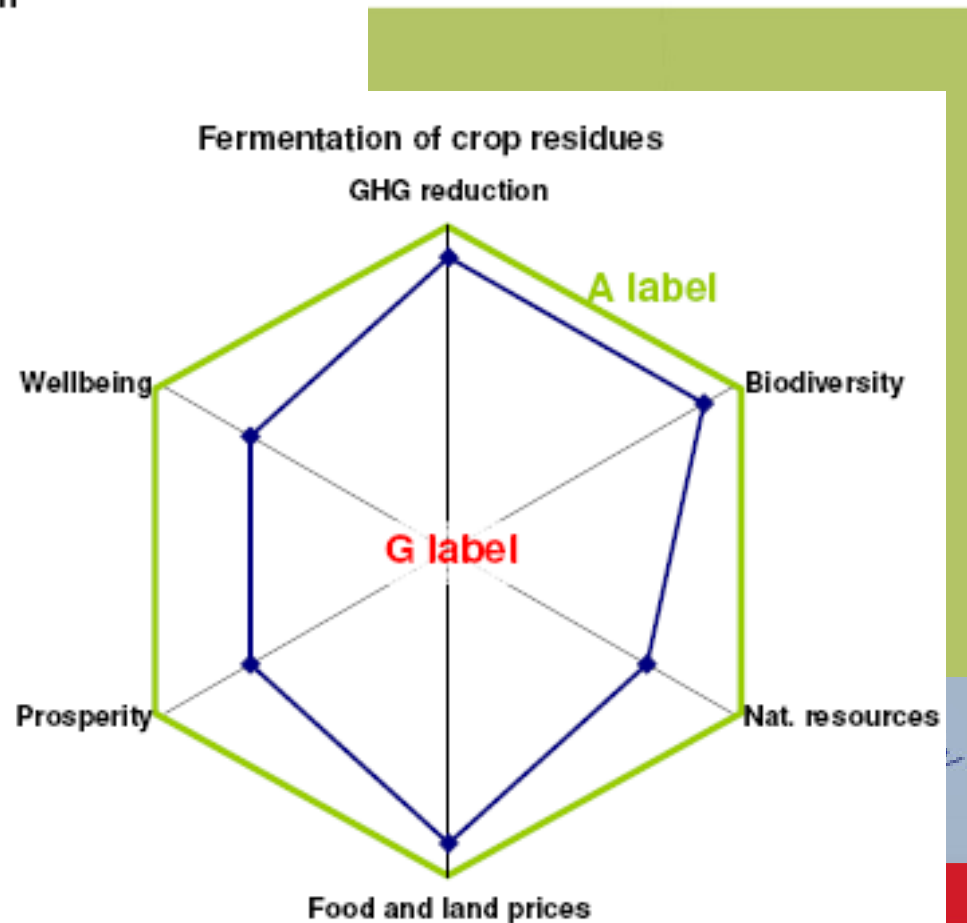
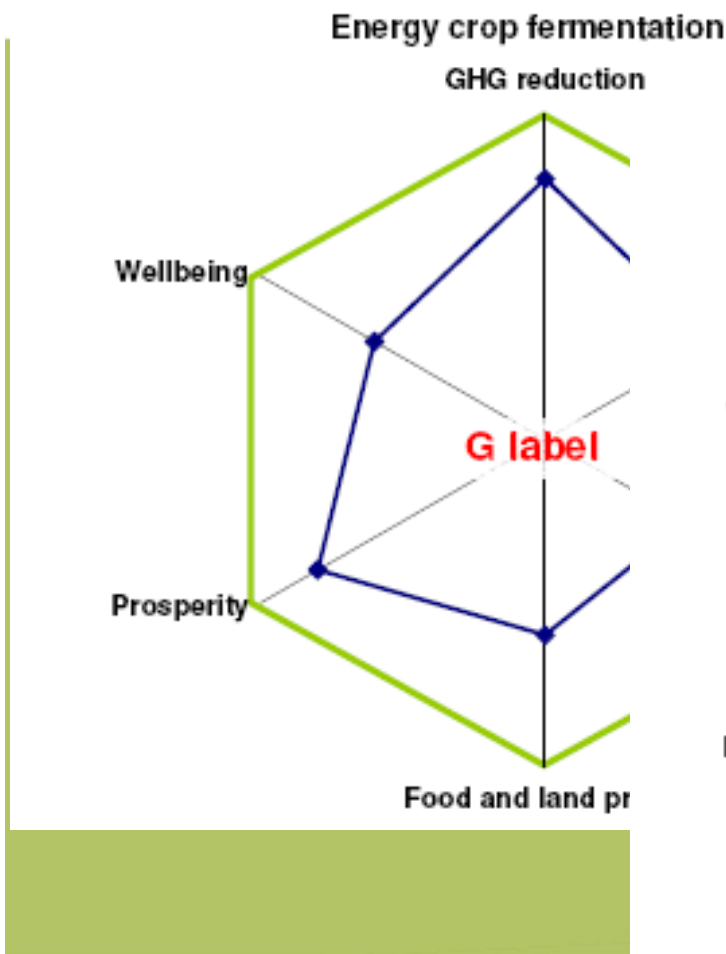


Small scale sugar palm ethanol production



- Integration in la

# Biogas production



# Biofuels, GHG and RED



$$E = e_{ec} + e_l + e_p + e_{td} + e_u - e_{sca} - e_{ccs} - e_{ccr} - e_{ee}$$

$E$  = total emissions from the use of the fuel;

$e_{ec}$  = emissions from the extraction or cultivation of raw materials;

$e_l$  = annualised emissions from carbon stock changes caused by land-use change;

$e_p$  = emissions from processing;

$e_{td}$  = emissions from transport and distribution;

# Biofuels, GHG and RED



## Current developments

- CEN European Normalisation Centre
- ISO GHG / IIUC calculation
- RED
  - \* Commission: Sustainability criteria
  - \* National Biomass Action Plans
  - \* National standard GHG calculations
- Debate, policy, public opinion

# Sustainability Quick Scan

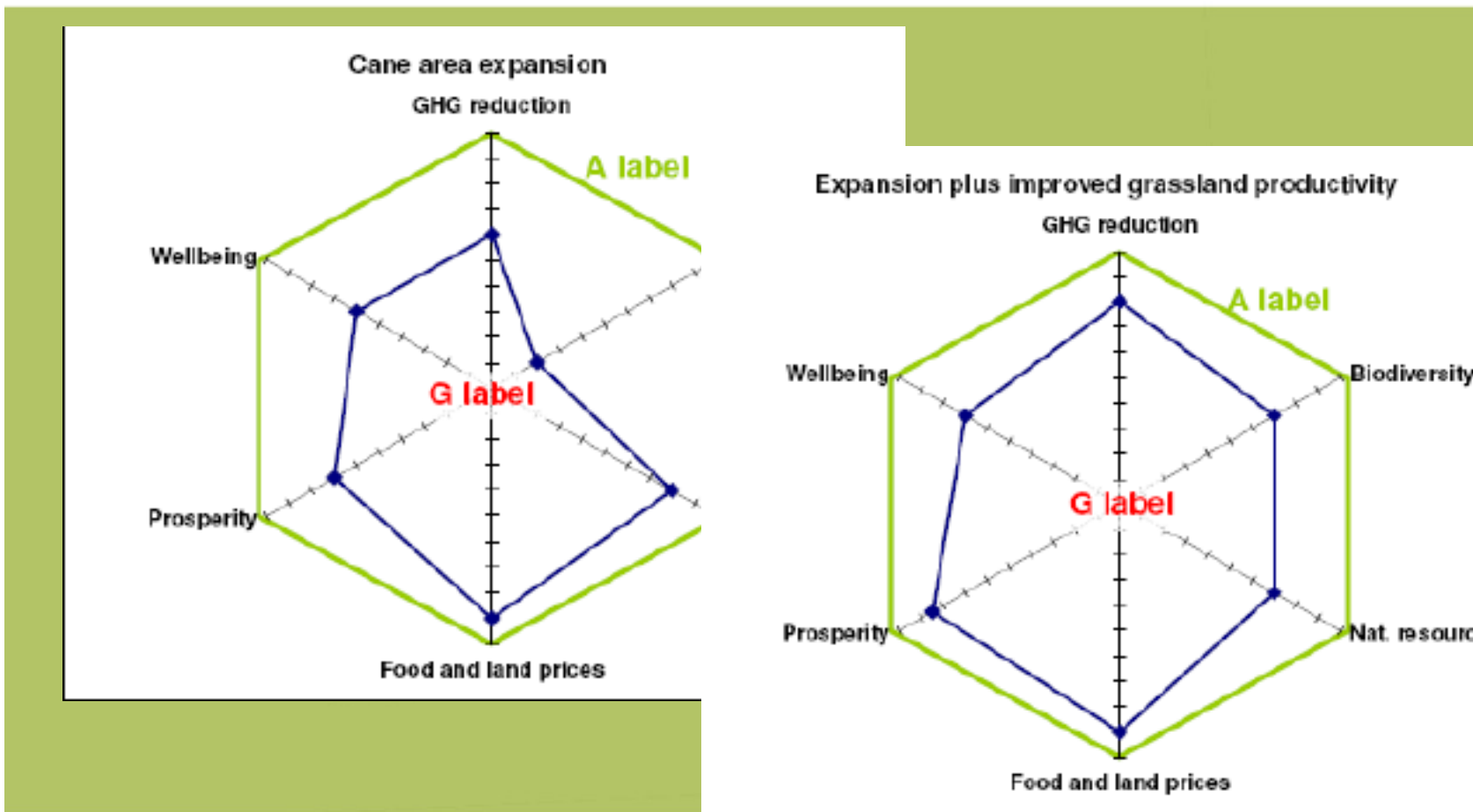


Find out more

- Online version:  
[http://www.biomassresearch.eu/sustainability\\_test.htm](http://www.biomassresearch.eu/sustainability_test.htm)
- [vandefliert@zero-e.nl](mailto:vandefliert@zero-e.nl)
- [info@biomassresearch.eu](mailto:info@biomassresearch.eu)

Zero-e

# Cane expansion



## Saab 9-3 - BioPower

