



Oliver Mohr/pixelio.de

Session: What's your perspective? - Regional & spatial LCA's for biomass resources

Morning Session: 9:30-12:00

Chair: Sinéad O' Keeffe

"Extended Intro" : Sinéad & Stefan Majer

Leipzig, 25.11.2014

Regional bioenergy Assessments

“Assessment of regional bioenergy systems can capture important environmental burdens?”

Traditional energy systems



Oil drilling/oil refining



Coal mining/burning

VS

Regional bioenergy systems



Residues/wastes resources



Land use



Bioenergy plants (source:DBFZ)

Environmental Burdens



Climate change & Air



Source: <http://www.pca.state.mn.us/artwork/newscenter/tab-fox1.jpg>

Water



Ralf Zierold / pixelio.de

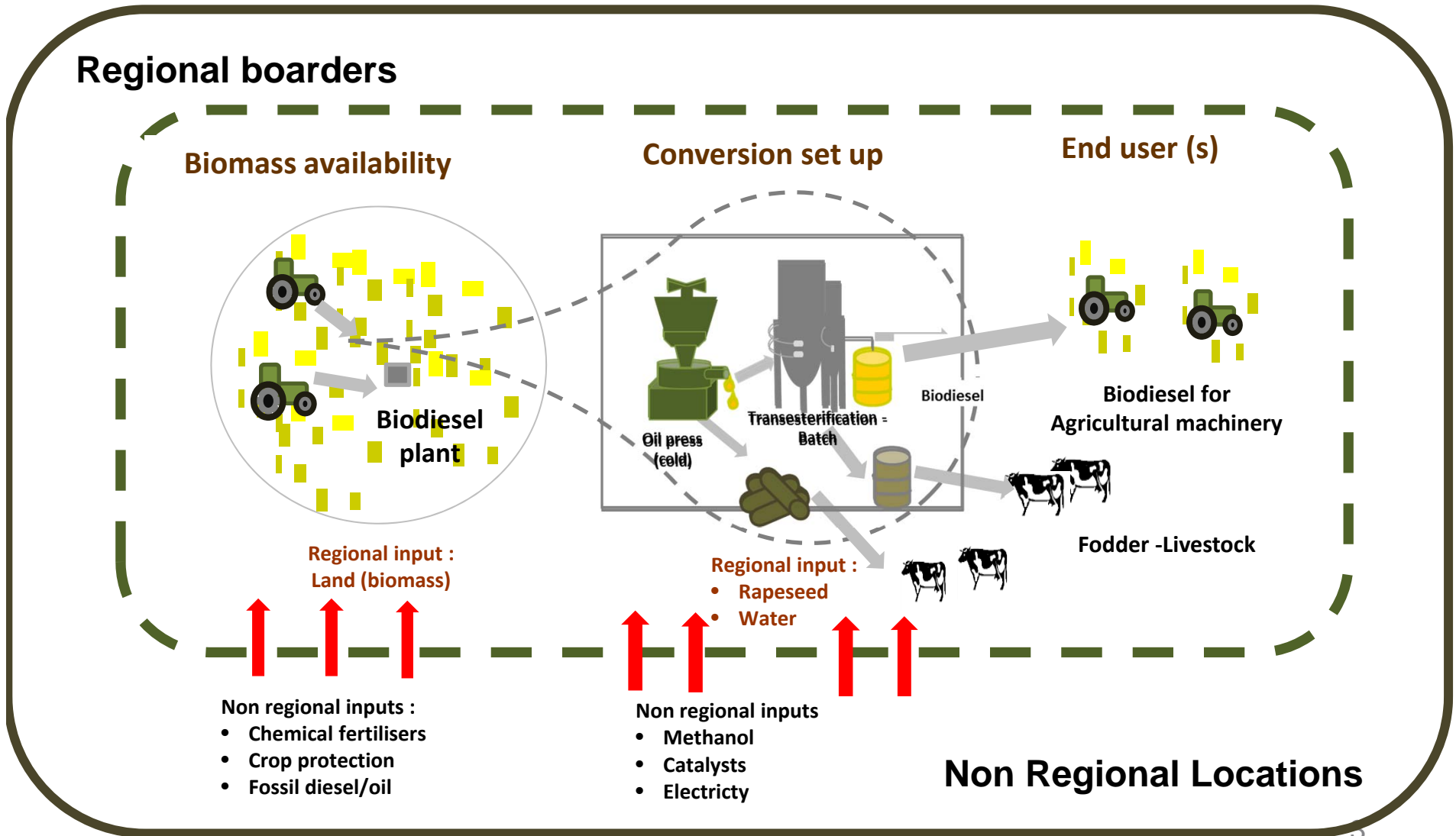
Biodiversity



Joujou / pixelio.de

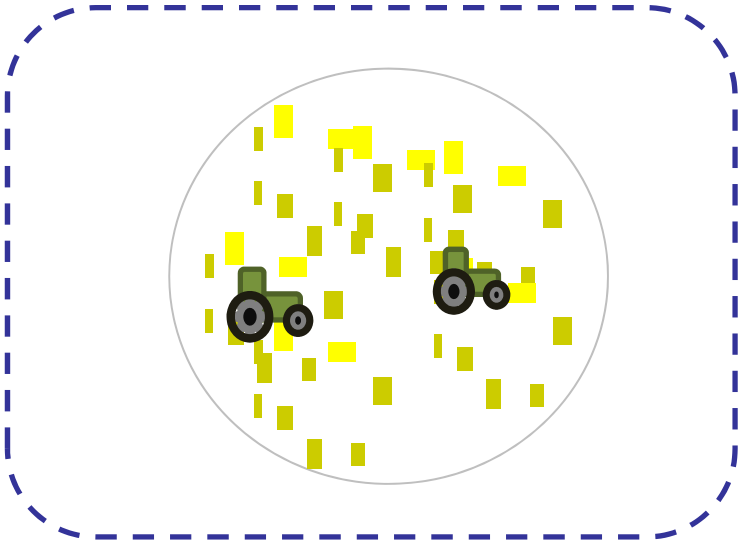
Land use

Aspects of regional LCA thinking for Bioenergy systems



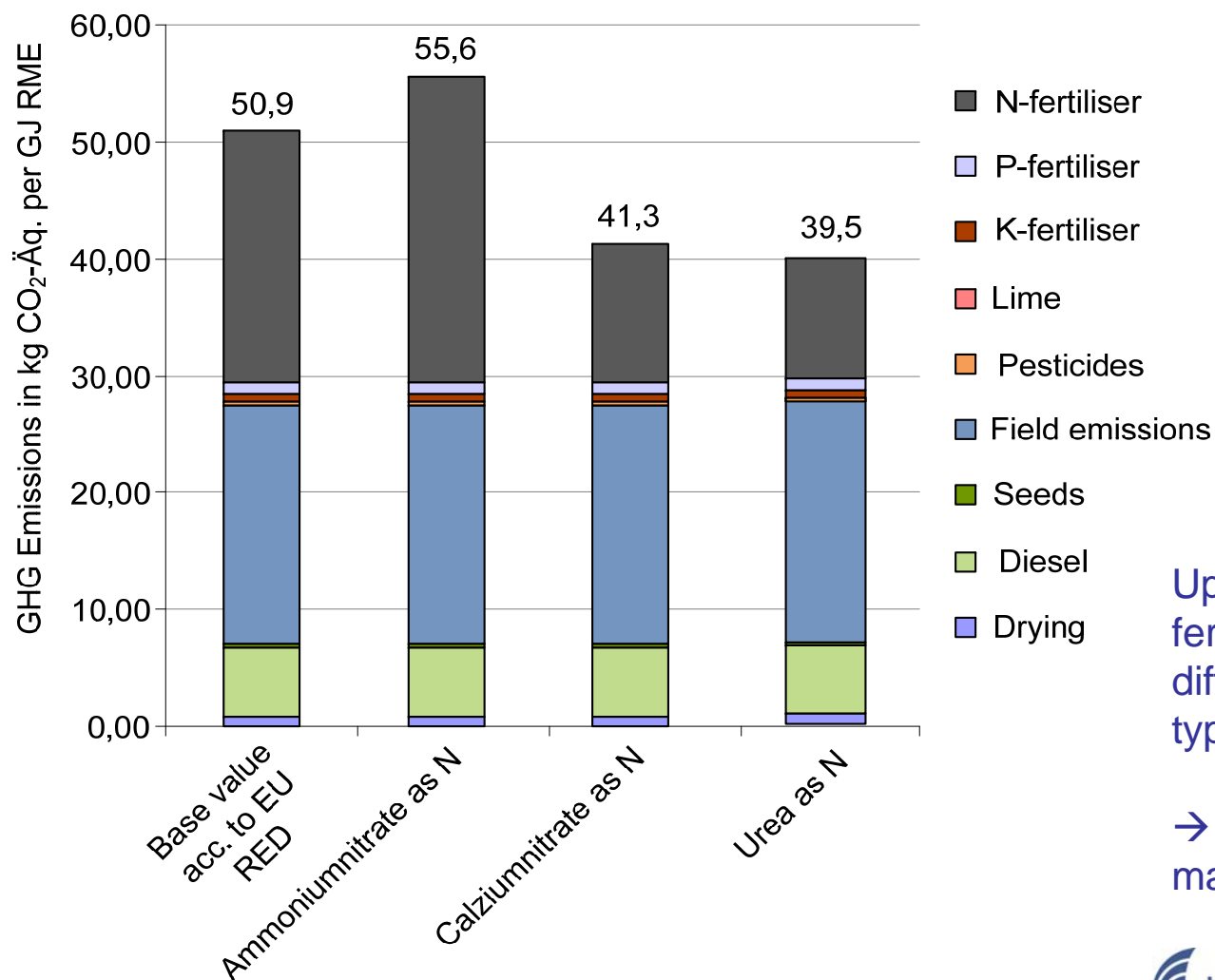
O'Keeffe et al (in prep)

Feedstock inventory



BIOMASS AVAILABILITY

Aspects for regionalisation within LCI Upstream emissions from fert. prod.

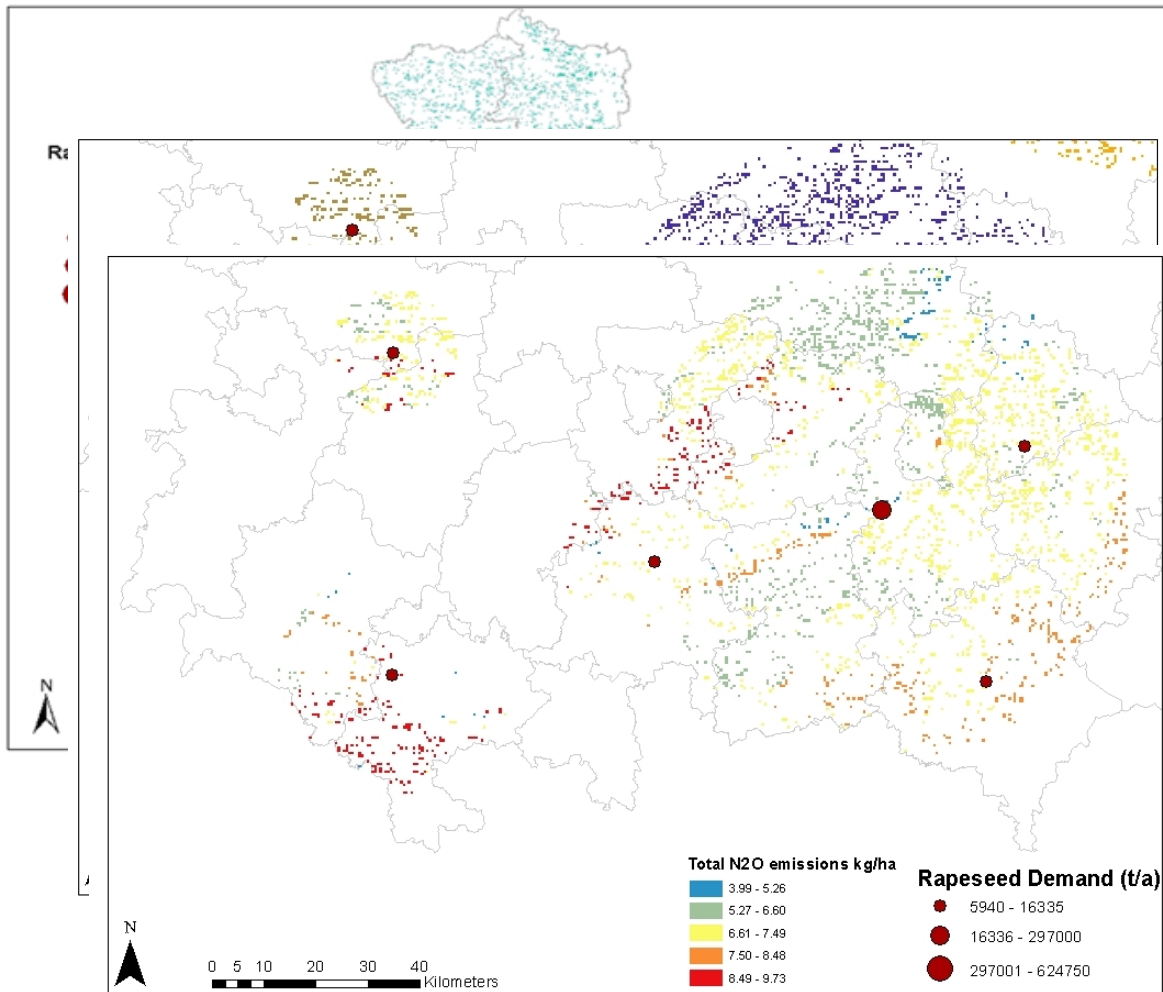


Upstream emissions from fertiliser production strongly differ between fertiliser types.

→ Regional mixture matters!

Calculations based on: JRC values, Ecoinvent, DBFZ 2010

RELCA - LCI modelling Starting point.



Catchments – system boundaries for LCI

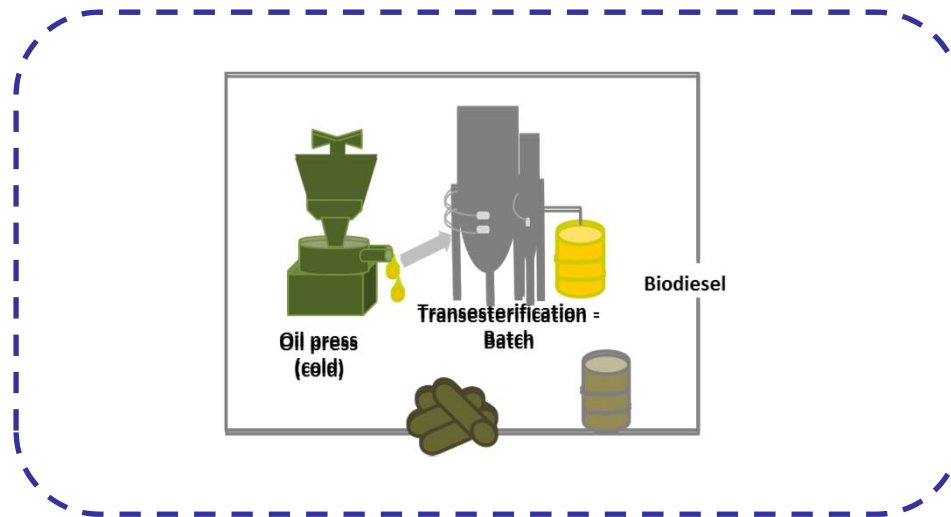
Sourcing of biomass –regional/non regional

Distribution of burdens -Hotspots

Total N2O (Direct & Indirect) -Unpublished preliminary estimations (O'Keeffe et al., in prep)

Simulated Hypothetical catchment areas
& Direct field emissions for Biodiesel plants (IPCC approaches)

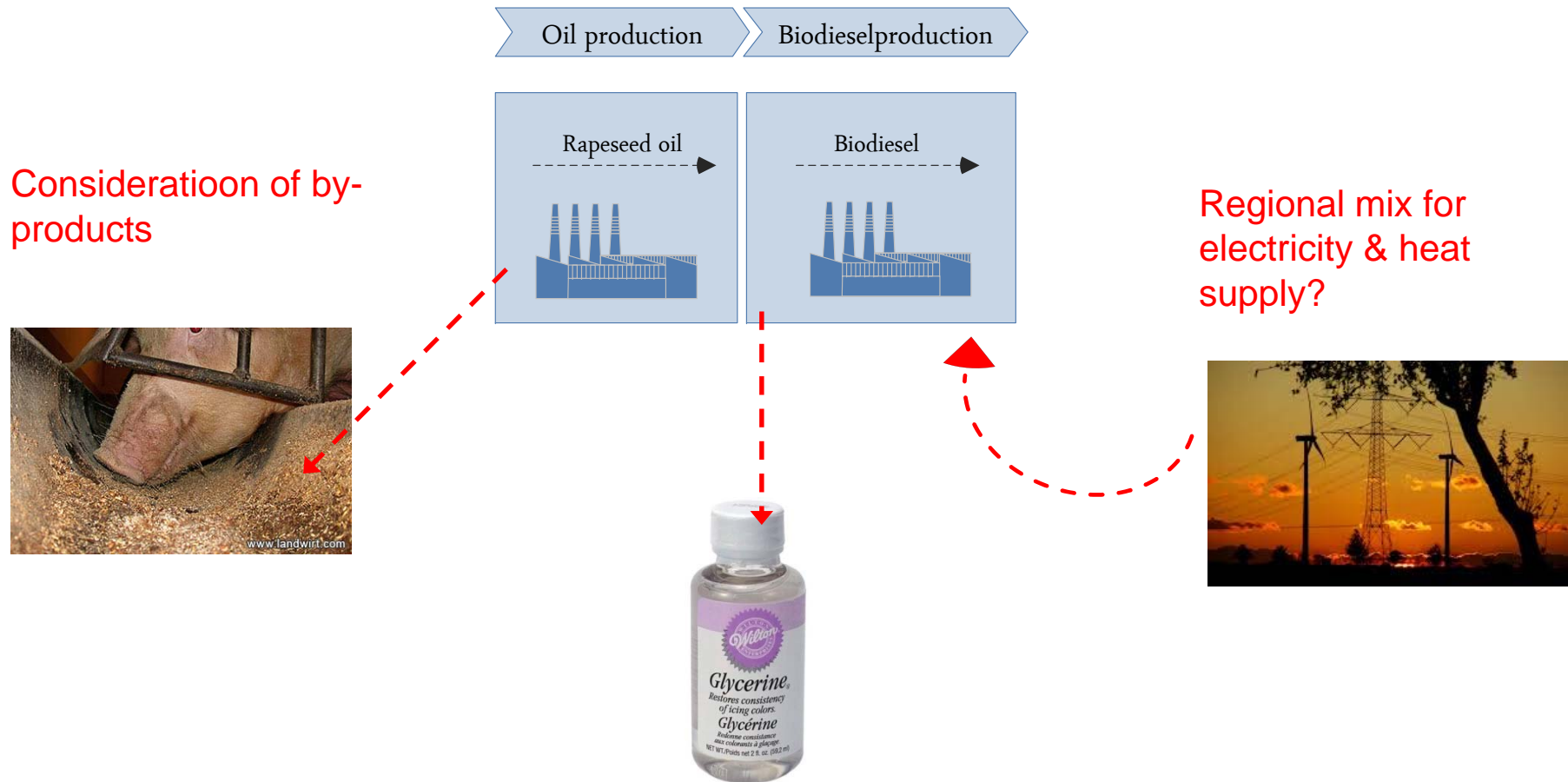
Approach for Conversion systems' inventory



CONVERSION SYSTEMS

Aspects for regionalisation within LCI

Example Biomassconversion



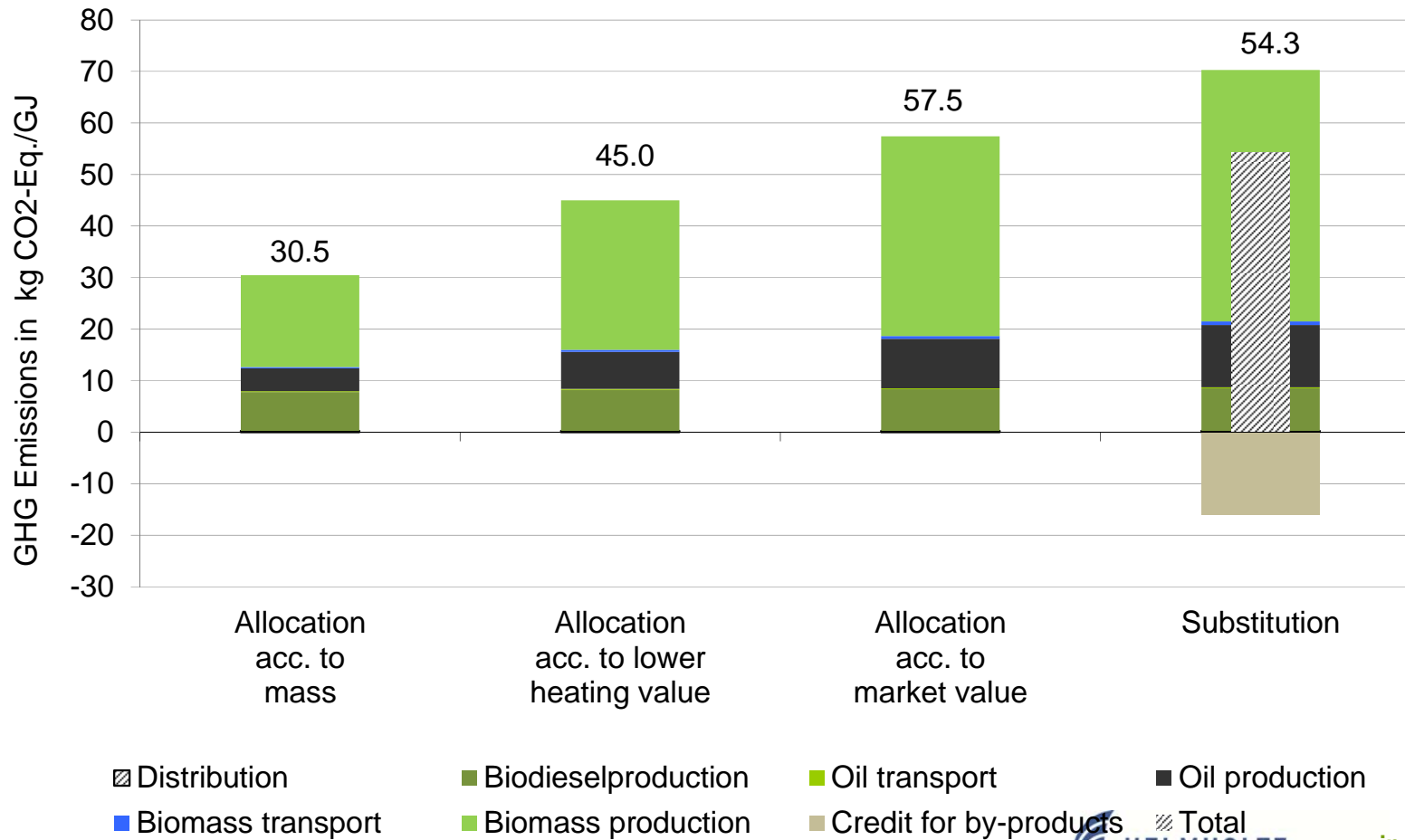
→ Consequences for LCI, LCIA and interpretation (reference systems)

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UMWELTFORSCHUNG
UFZ



Consideration of by-products – different approaches



Key Issues to discuss today

Regional biomass production and conversion:

How do we account for environmental impacts using LCA approaches?

Regional/spatial approaches in LCA in general:

How do we deal with data quality/resolutions and limitations?

Life cycle thinking- regional approaches:

What are the best alternative options in a finite area, but are we limited just to that within future bioeconomies ?

Agenda

Time	Presentation	Presenters	Institute
9:40-10:00	NEW!!Extended intro: Regional aspects in LCA for Bioenergy Systems	Sinéad O' Keefe Stefan Majer	UFZ/DBFZ
10:00-10:30	LCA of biogas production in Central Germany	Steffen Schock	UFZ
Short Pause			
10:40- 11:05	Regional integrated assessment of environmental and socio-economic impacts of biofuel production demonstrated for Mozambique	Floor van der Hilst	Utrecht University, Netherlands
11:05-11:30	Life cycle assessment (LCA) of bioenergy and relevance of regionalisation	Stephan Pfister	ETH Zurich, Switzerland
11:30-12:00 Panel discussion			