

Biohub and inclusive value chains

Lotte Asveld



Clean Shipping



How to build inclusive and sustainable and inclusive value chains for marine biofuels?



IBIS: Inclusive Biobased Innovations

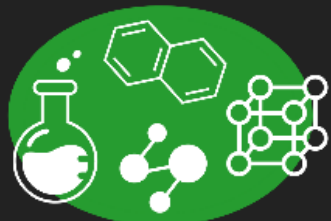
CARBONAGRO



Overall results



Raw materials from natural resources...



...are broken down into biochemical components...



...and then used in biobased products

Biomass supply challenges



Sustainability



Quality



Continuity

Why important?



Reducing uncertainties & risks for industries



Fair sharing of the benefits of the biobased economy

Root causes



Farmers lack incentives & opportunities



Value chains are global, farming is a local practice

Solution strategies



Inclusive & just innovations



Context-sensitive innovations

Factors to consider



Different interpretations of values



Cultural differences



Suitable technology & design choices



Public-private collaboration



Inclusive certification schemes



Incubators for entrepreneurial initiatives



Well-functioning cooperatives



Customer / consumer involvement



Communication channels & practices



Context-sensitive crop choices



Extension services / crop advisors



Local farming knowledge



Learning practices



Institutional environment

A research project by:



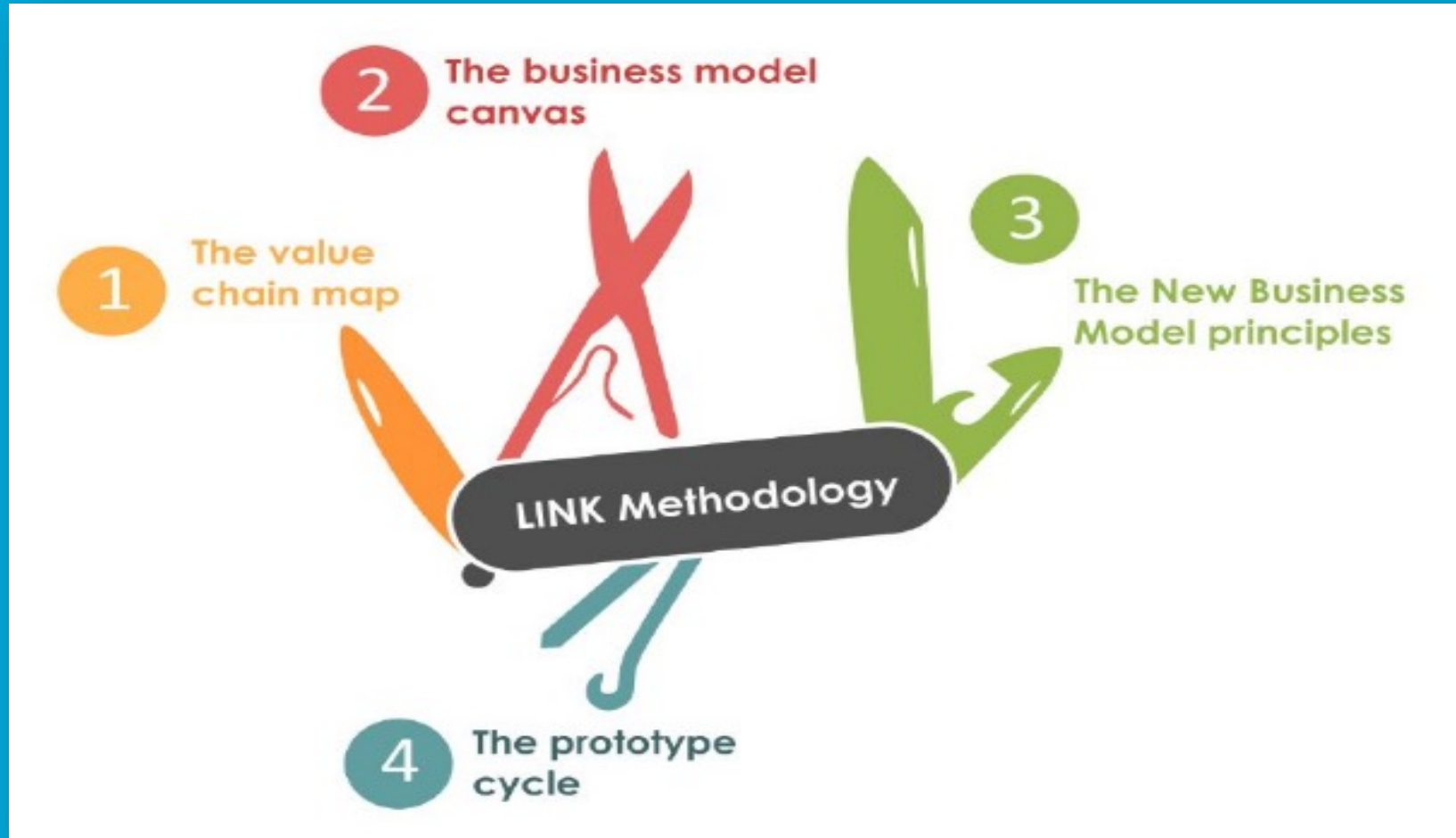
Section
Biotechnology & Society



WAGENINGEN
UNIVERSITY & RESEARCH

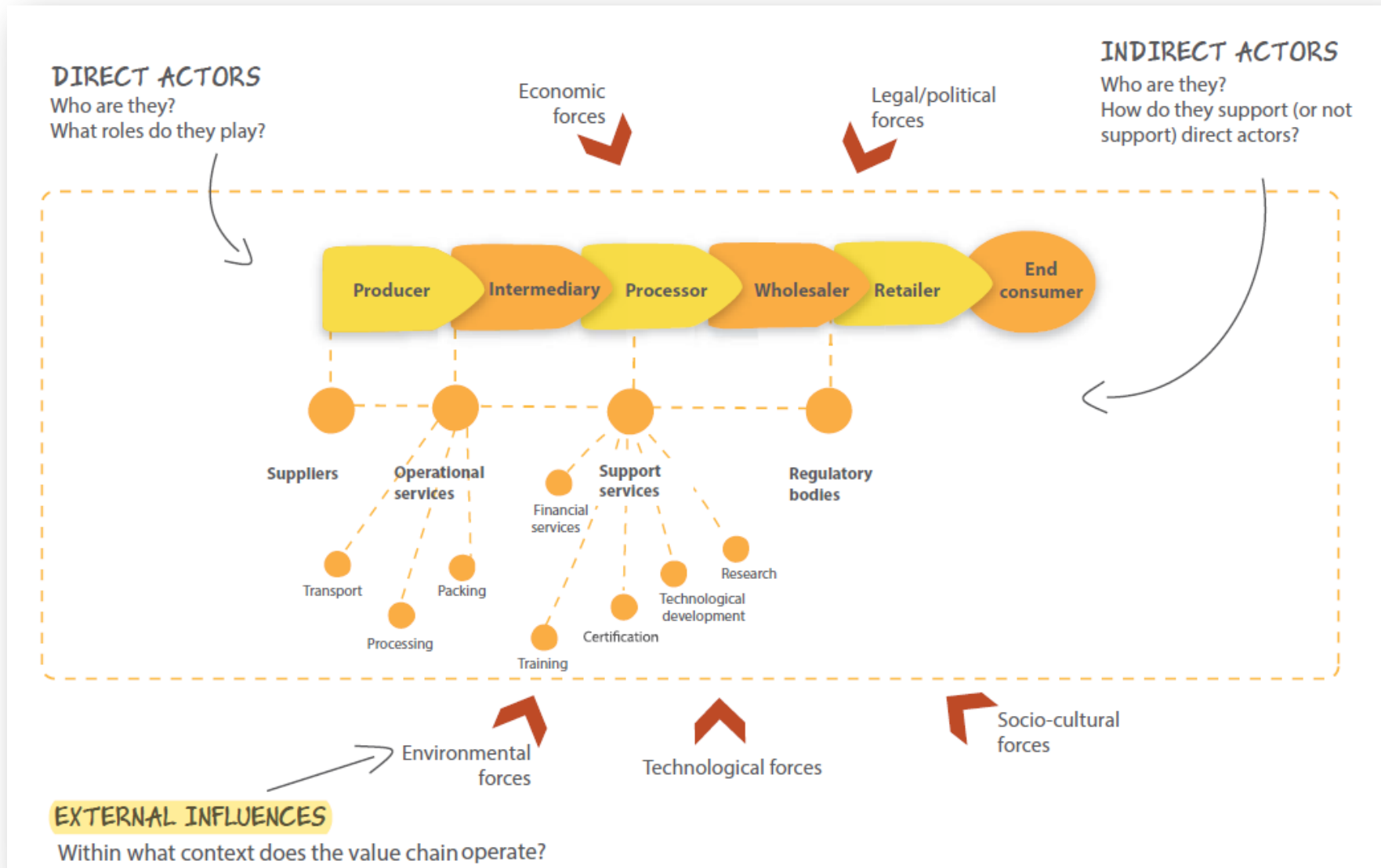
Division of Business
Management & Organization

Link Methodology

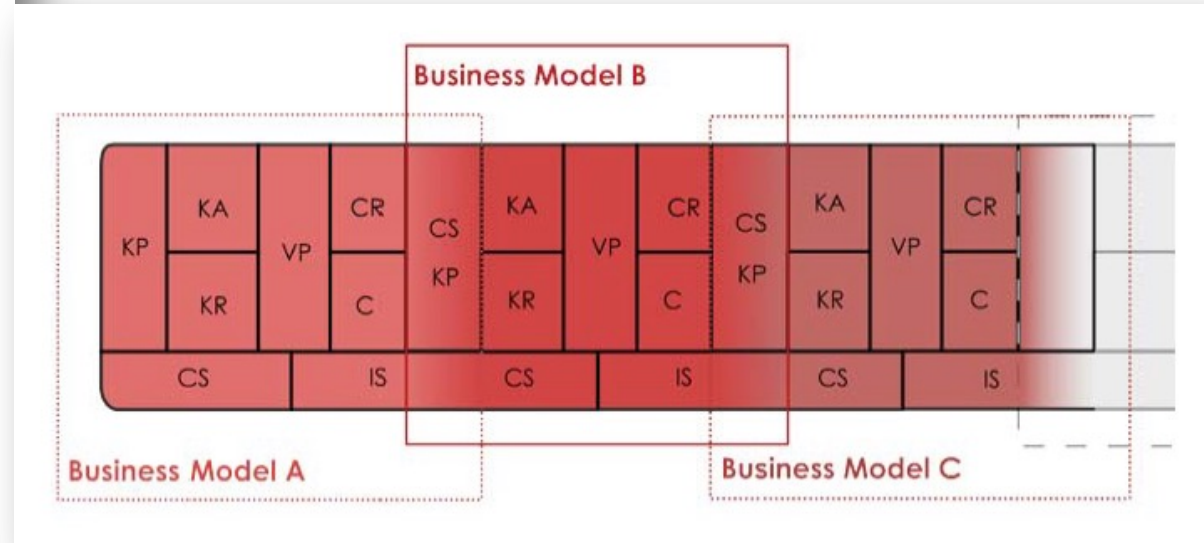
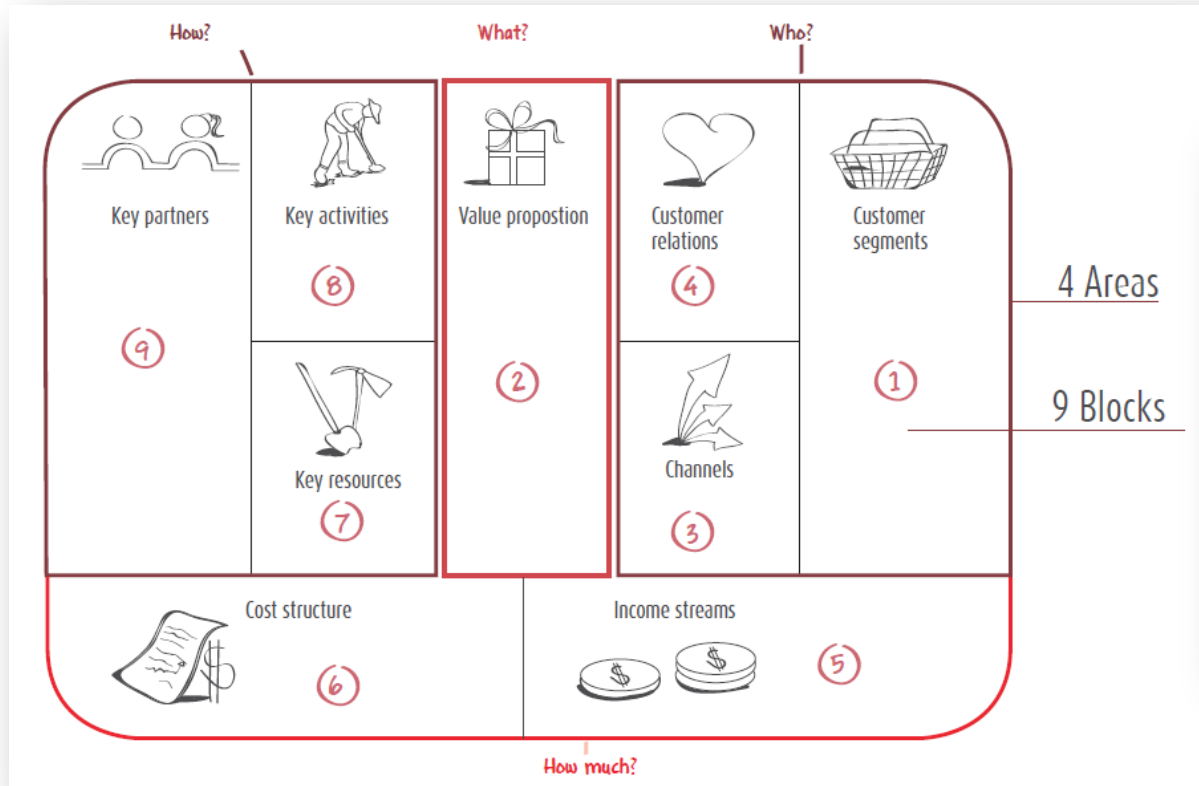


Source: Lundy, Mark; Amrein, Alexandra; Hurtado, Jhon Jairo; Becx, Gertjan; Zamierowski, Nancy; Rodriguez, Fernando; Mosquera, Erika Eliana. 2014. LINK methodology: a participatory guide to business models that link smallholders to markets. Version 2.0. Cali, Colombia: International Center for Tropical Agriculture.

Value chain identification

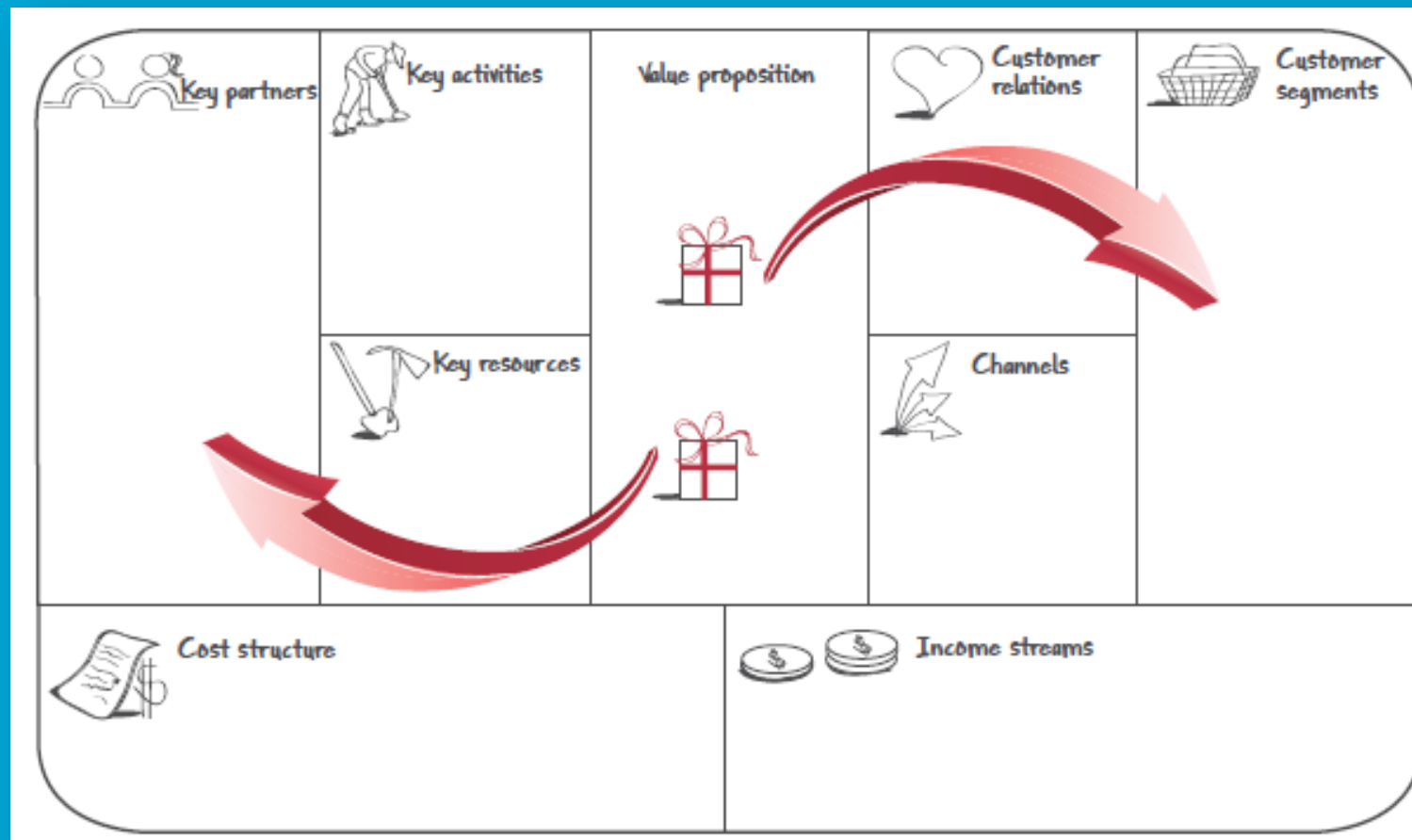


Value chain business modelling



In inclusive business models, it is important to look at the value proposition from at least two perspectives: (1) from the producer's point of view and (2) from the customer's perspective. Inclusive business models should be sensitive to the realities of smallholder production as well as to market demands."

Inclusive business models



Reya Fofa case South-Africa

Multi-purpose crop

High yield

Sustainable use

Novel protein source

Well known species

Nicotine and GMO-free

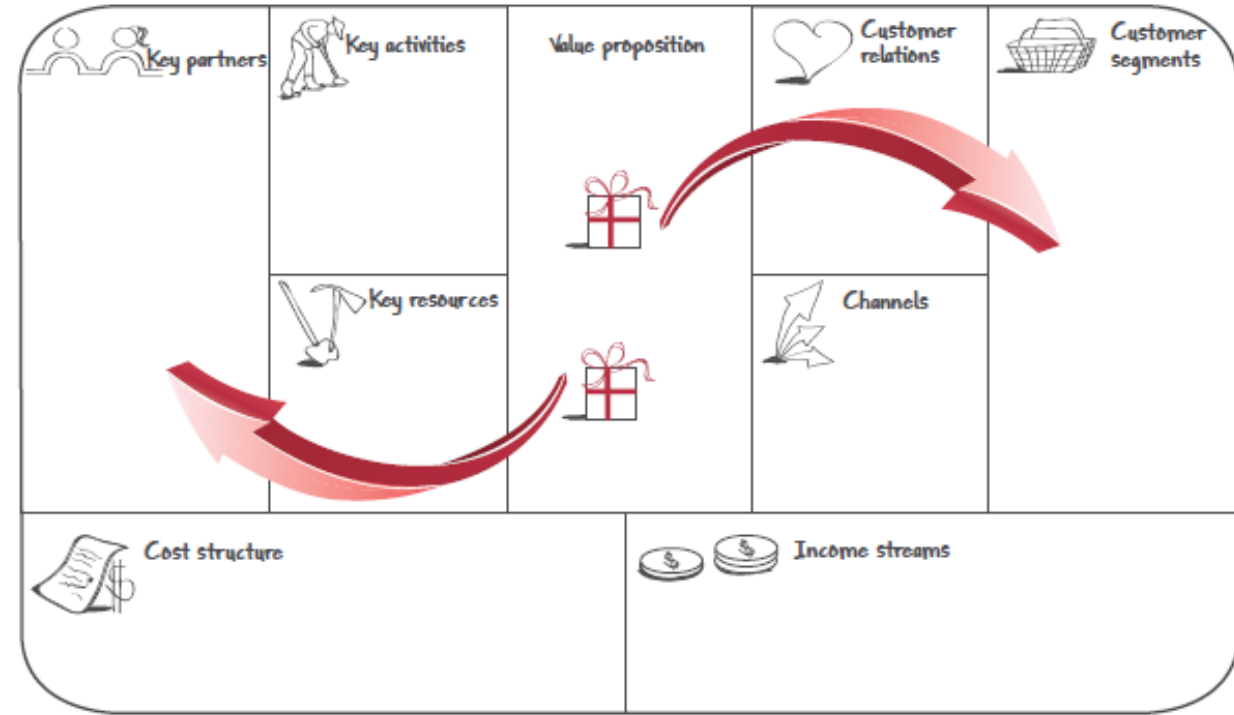
Improved seed production

Community development



Double value proposition

- Key partners, Bafokeng Nation: new source of income, market access, training & technology, start up package
- Customer segment, South African Airways, Swissport, government: sustainable fuel, quality and reliability
- Key activities: growing and processing solaris crops
- Key resources: training facilities, supply of seedlings



Poet DSM Liberty plant

- Key partners, corn farmers: new source of income, relying on integrated farm management
- Customer segment: automotive industry, government, biofuels producers?
- Key activities: developing technologies to process corn stover
- Key resources: processing technologies, enzymatic technologies, advanced knowledge



Challenges

Several goals
of inclusion
possible

Biomass is not a
commodity

Biomass
value chains
can be
complex

Value proposition
can entail
developing the value
chain itself

Technology plays
a big role, while it
is still evolving

TU Delft

Some lessons learned

- Double value proposition is crucial and will vary per context
- Evolving technologies create opportunities for adapting to local context and for integration with existing value chains
- Need for awareness of overlapping roles of customer/key partner



Biohubs can provide very strong double value proposition

BIOHUBS as a win-win collaboration



Local communities:
sustainable
socio-economic
development



Biofuel producers:
secure, continuous
supply of high-quality,
sustainable biomass

Impulse for regional development

Stakeholders collaborate to make
improvements in areas like:



Soil
management



Water & energy
technology



Farming
equipment



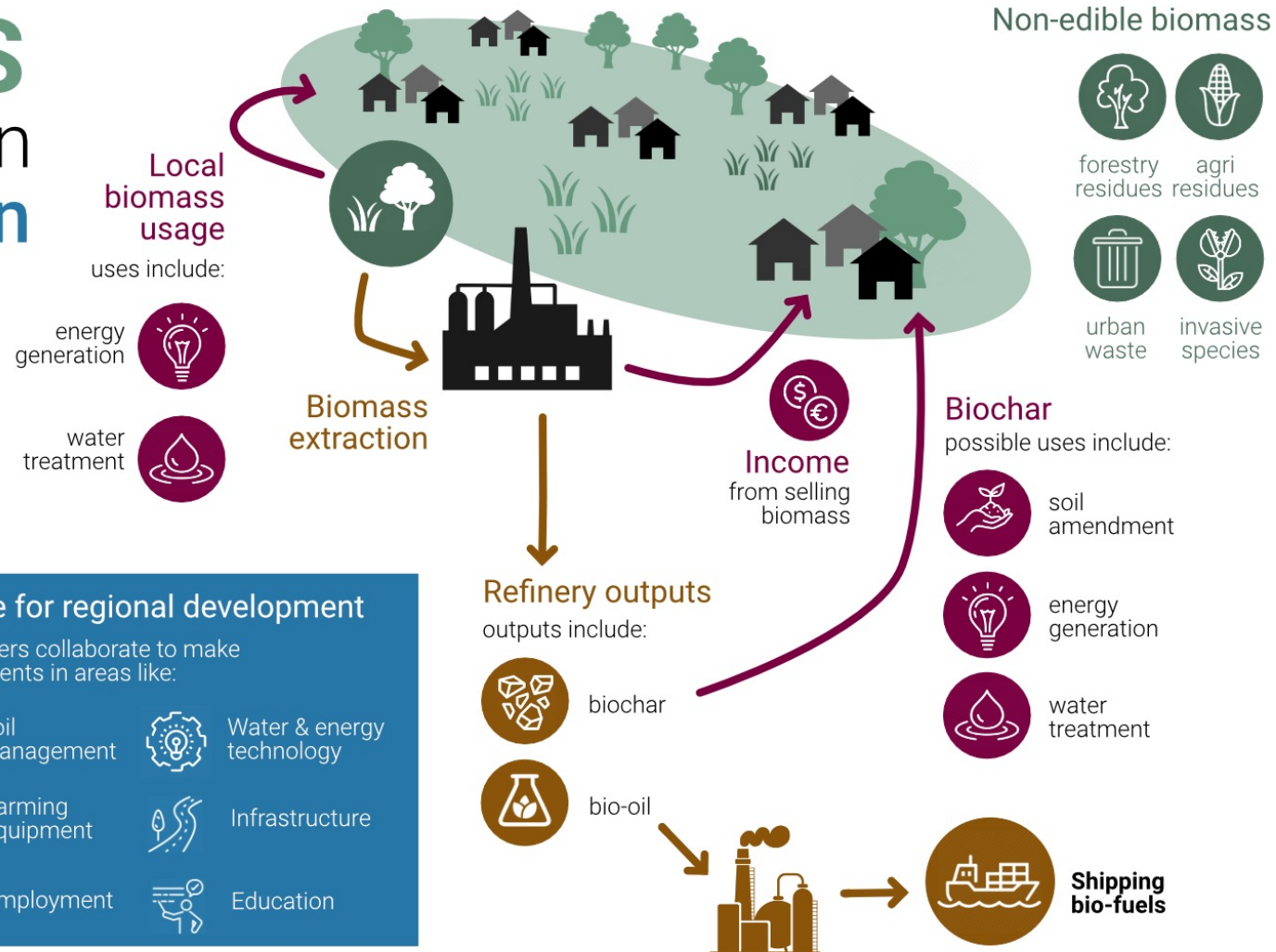
Infrastructure



Employment



Education



More info: www.cleanshipping.nl

© Ilse Oosterlaken / Sites for Scholars

Questions for marine biofuels application

- Who is the customer? (Biofuel producers, shipping industry, governments?)
- Challenge of building or adapting a value chain remains, who is responsible?
- Developing context sensitive technologies can clash with value of efficiency, how to balance?

