

Inclusive Biobased Value Chains (IBIS): The case of the Netherlands

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Recap IBIS-Project

- Funded by Dutch Research Organization (NWO) and industrial partners.

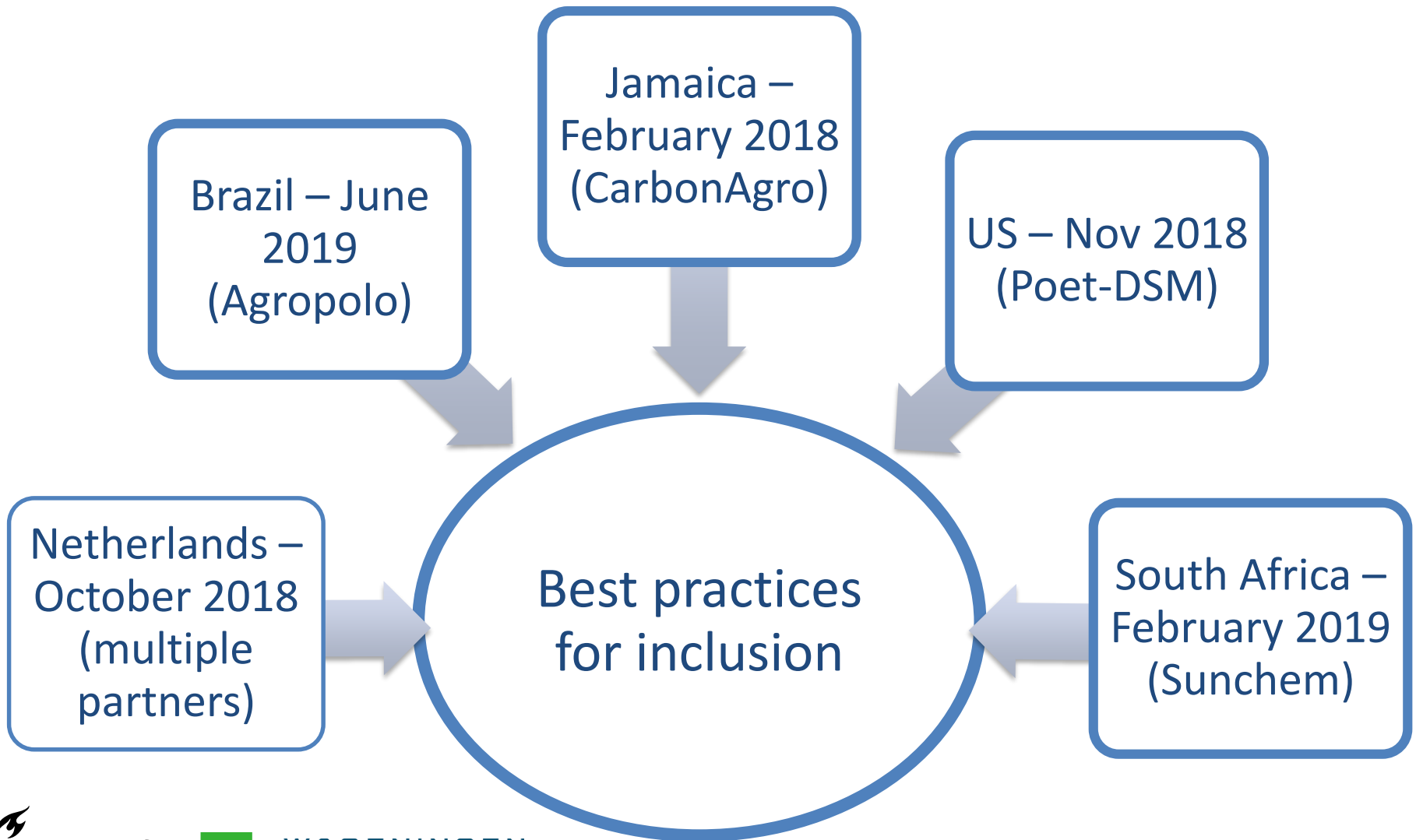
- Research question:

How can biobased value chains be designed to secure sustainable supply of bioresources, improve agricultural management and align farmers' values, interests, knowledge and concerns, with the socio-economic and technical requirements of other partners in the chain?

Partners in IBIS



IBIS Set-up



The Dutch case
“Sugar beet & Potato value chains”

By:
Business Management & Organisation
SSG-WUR

Intended as Perspectives-paper for Biofpr
Positive reply of editors upon proposal

The case of the Netherlands

Strength of the Dutch context:

- Linkages between farmers (feedstock) and market, via the cooperatives for sugar beet and potato.
- Formal representation of interest.

5 bottlenecks in transition to BBE (Langeveld et al, 2010)

- 1) availability of technology; 2) access to knowledge and information; 3) access to feedstock, credit and market; 4) availability of suitable location; 5) effective lobbying.

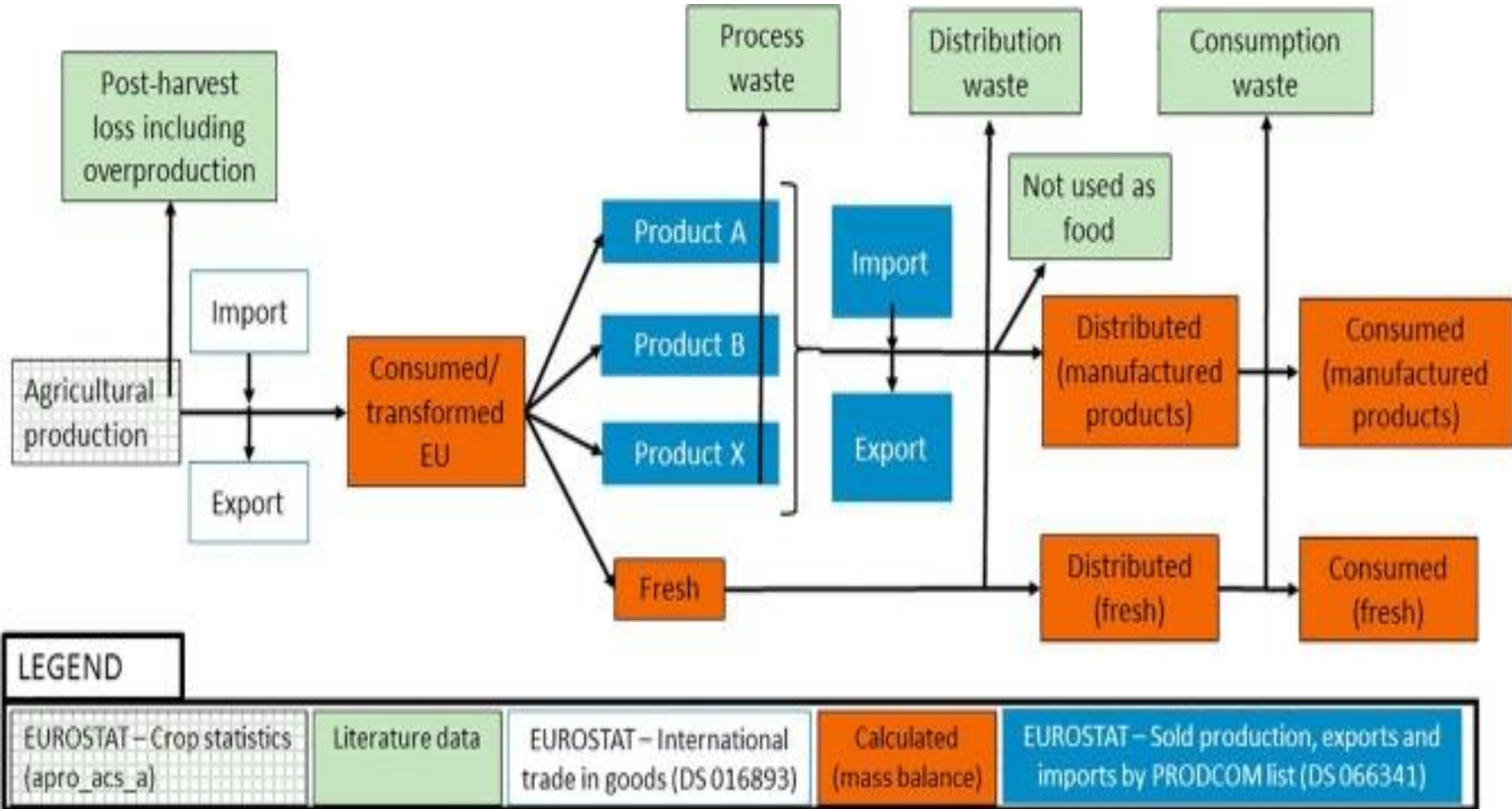
Current key bottlenecks:

- Markets: not ready for bio-based products
- Credit



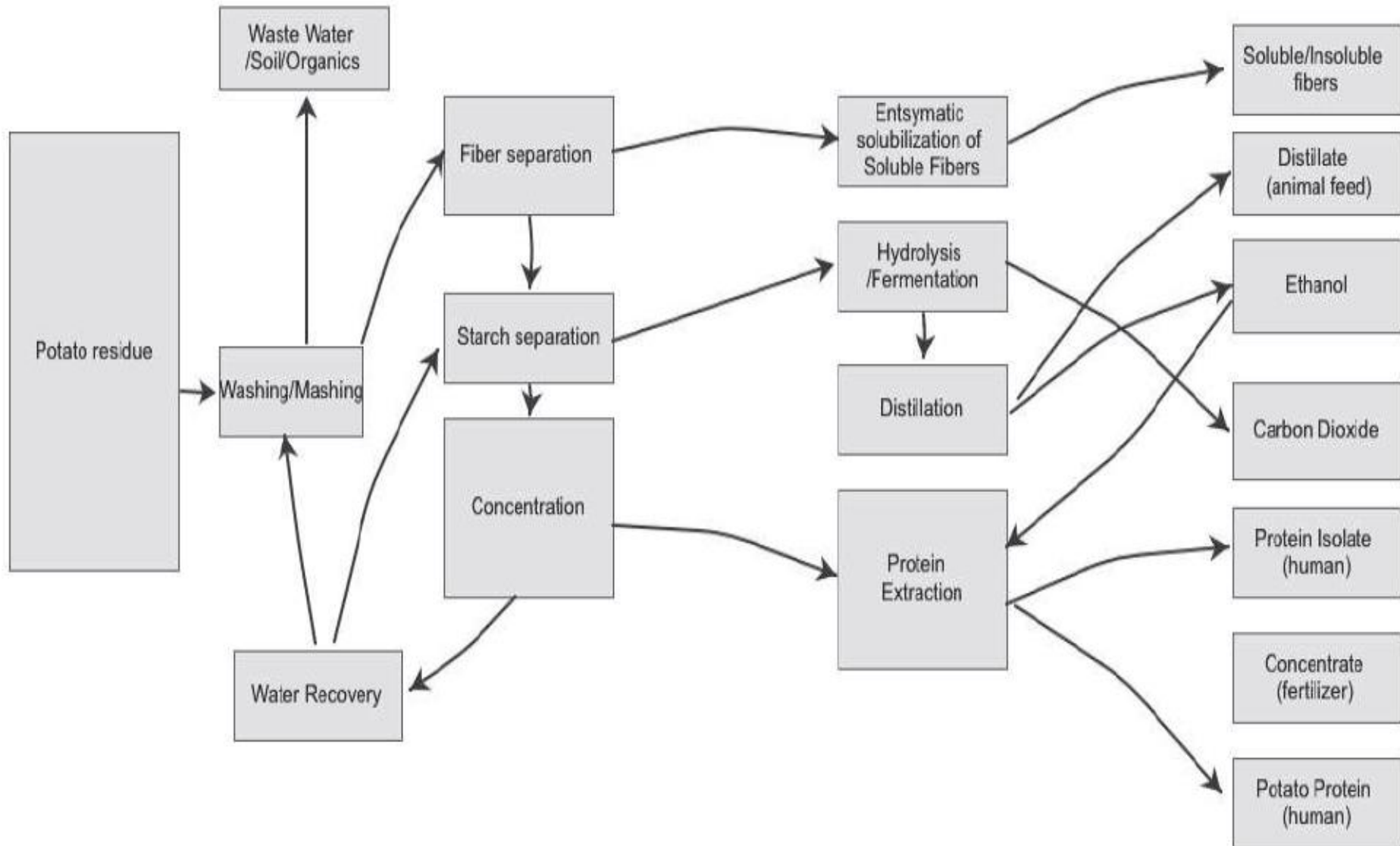
Food waste framework

Ref: Christobal et al (2018), in *Bioresource technology*

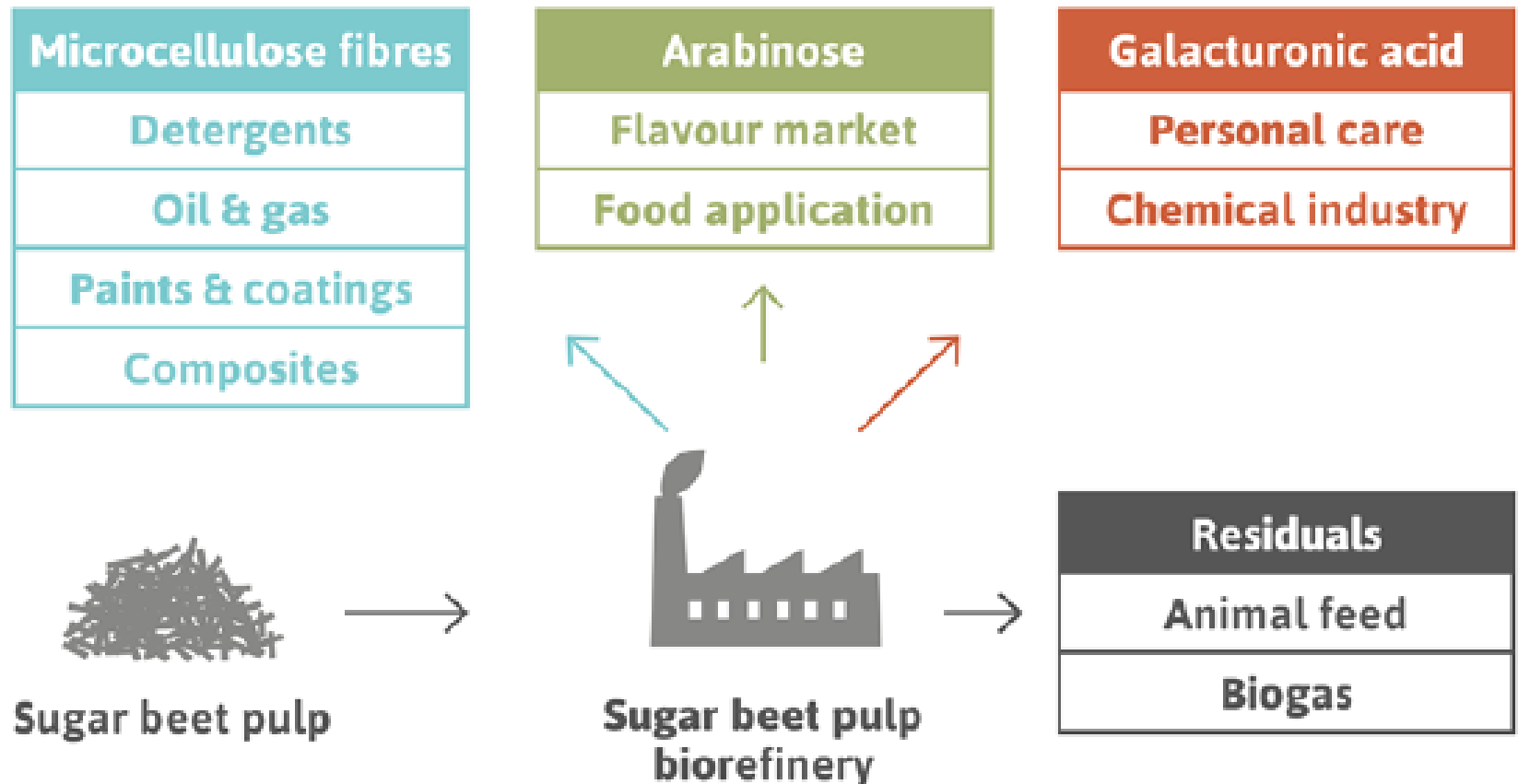


Material flowchart for potato biorefinery.

Ref: Ahokas et al (2014) in: *Agronomy Research*



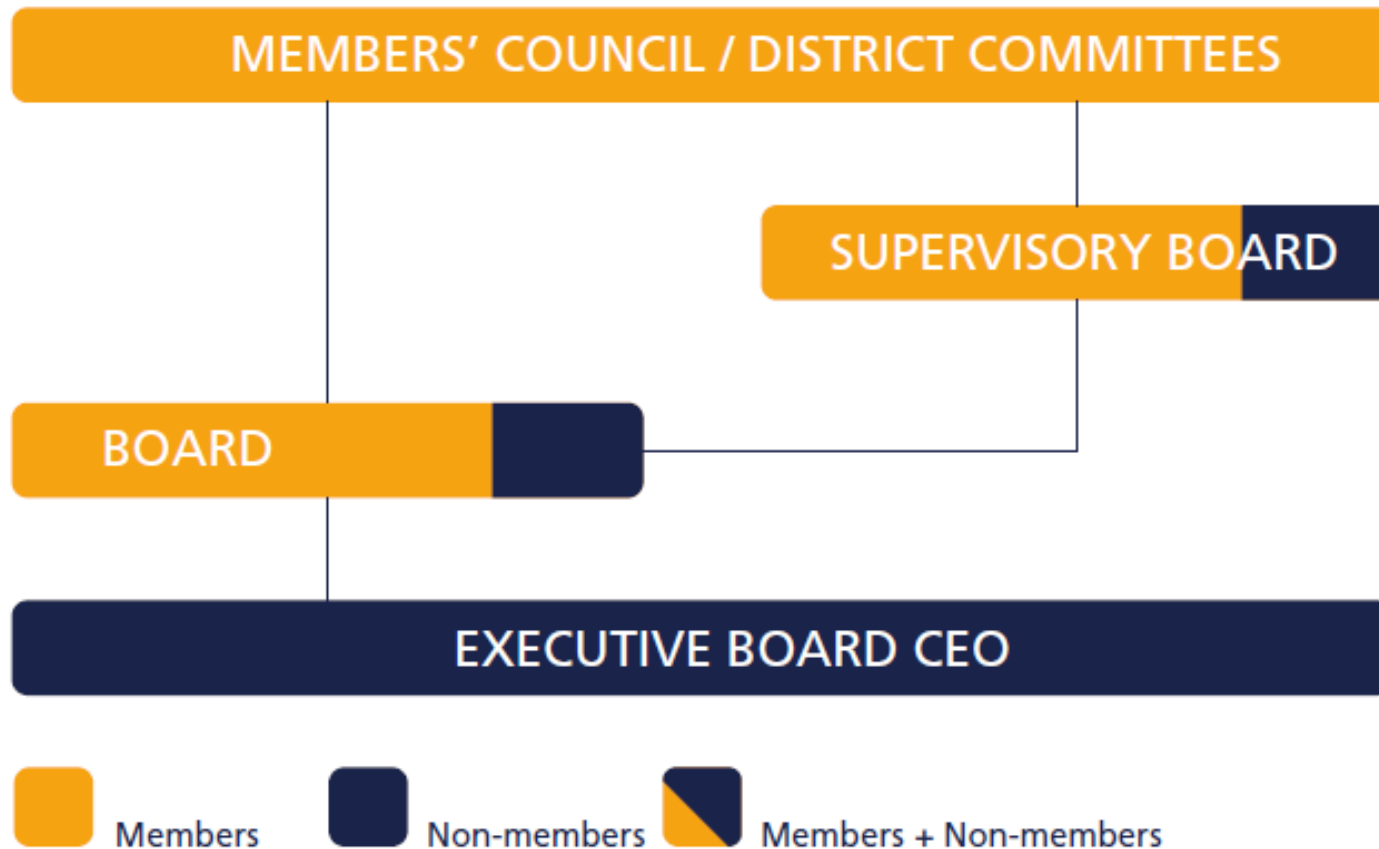
Biorefining of sugar beet pulp



Cooperatives: potato value chain vs sugarbeets.

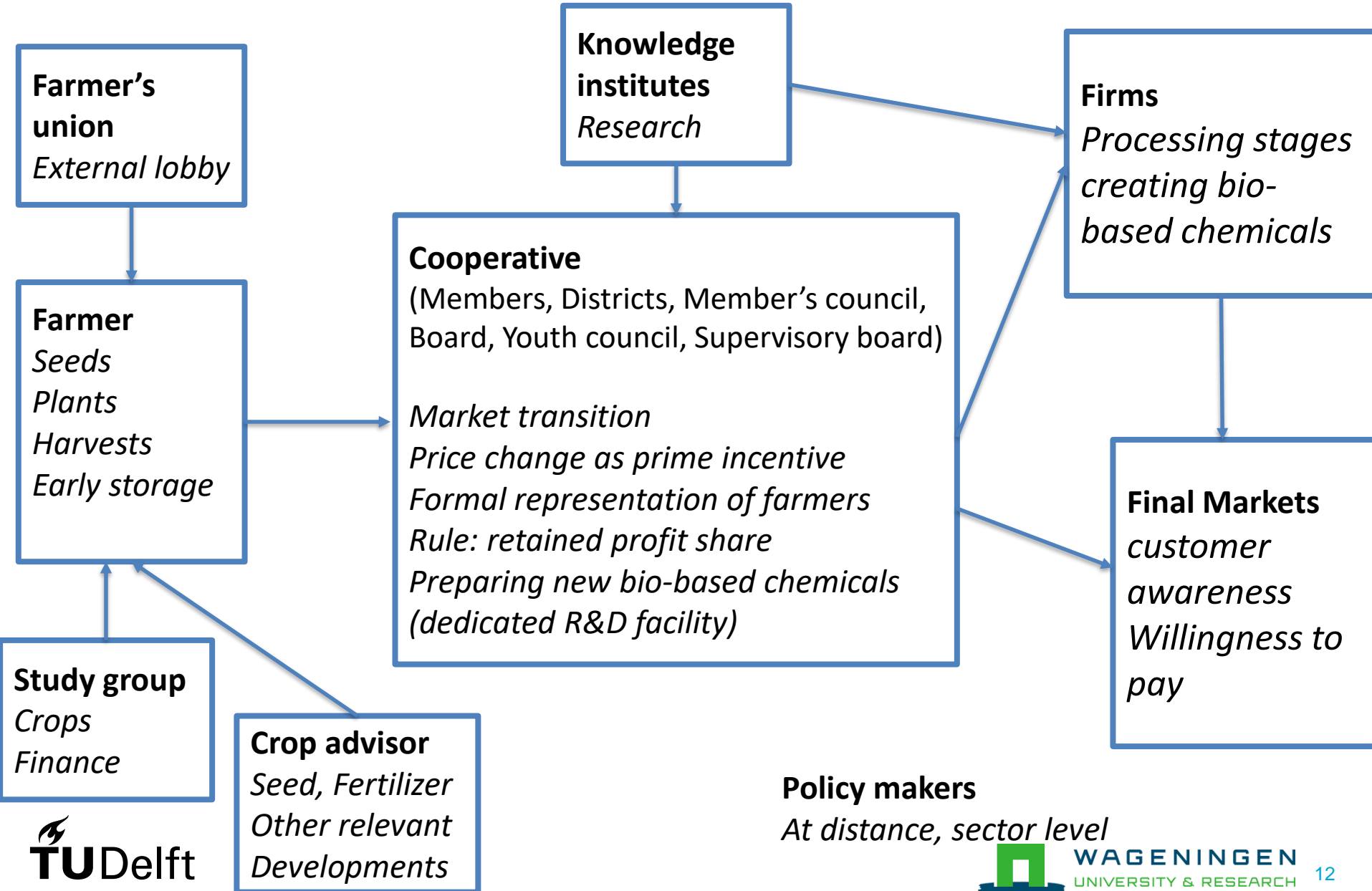
- The Potato value chains has 5 main cooperatives, next to large commercial processors.
- Agrico and HZPC are the dominant cooperatives for seed potatoes; coop Avebe is the processor of factory potatoes; and, NEDATO and VAVI are coops for consumer potatoes.
- The Sugarbeet value chain has one cooperative, Suikerunie, with different optimized processing sites, eg. in Dinteloord.

Governance structure of cooperatives



The basic structure of cooperatives is similar for both crops.

The Dutch value chain (simplified)

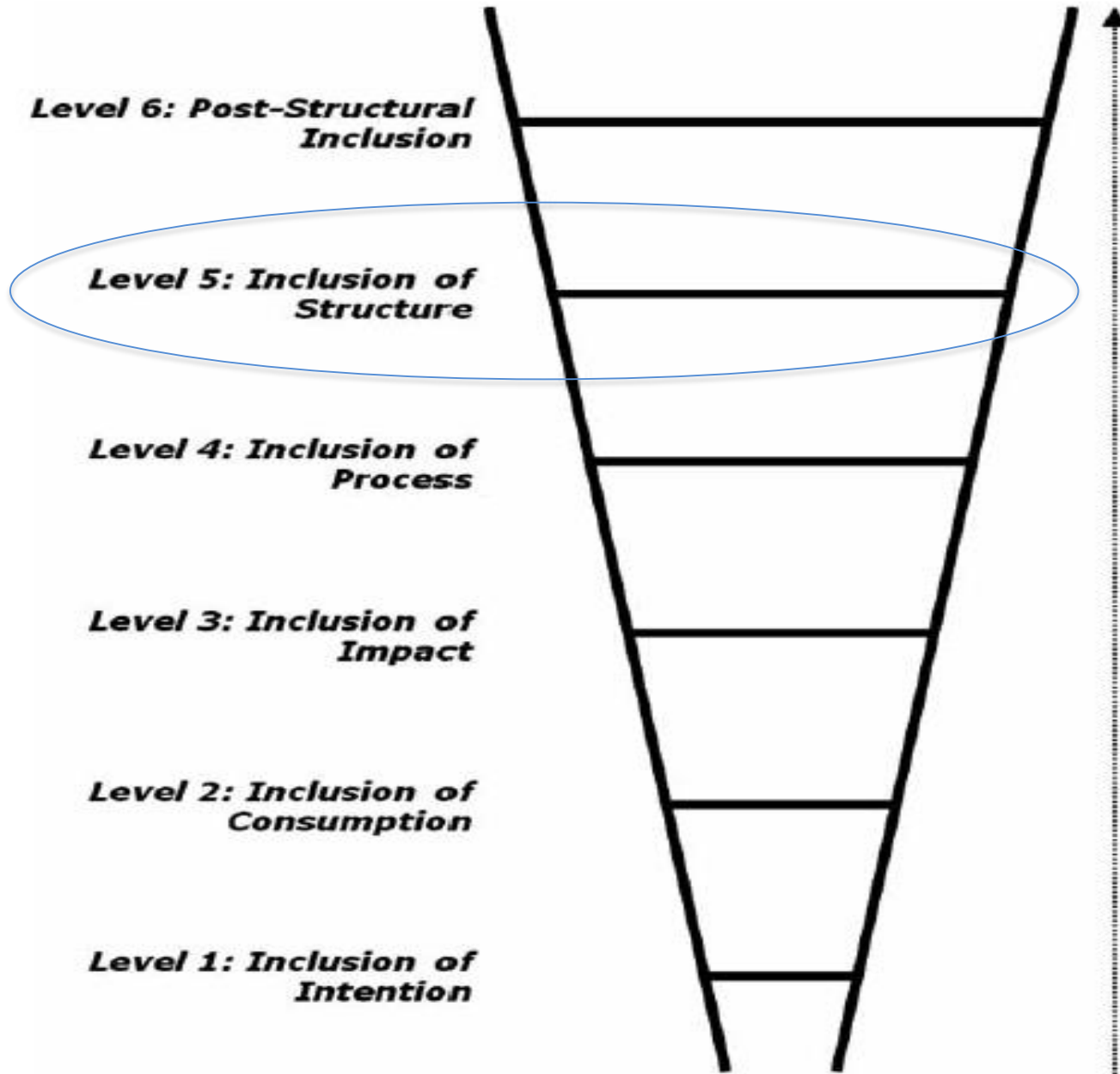


Initial observations - I

- **Inclusion** is path dependent because of the presence of routines. If possible, inclusion can be adopted in and adapted to other locations.
- **Feedstock fluctuations (input):** This problem involves an element of perception, and prior capability set (chemical industry), as input storage is common in agri.
- **Cooperative decision structure:** When decision-making involves usage of feedstock, farmers are consulted. For commercial and scientific decisions farmers are not consulted. Also, farmers don't want to be consulted for every decision; but they do want to stay informed.
- **Farmer union:** The union believes that power lies in the ability to mobilize resources. Also the union has formal democracy and indirect representation of every farmer's opinion.

Initial observations- II

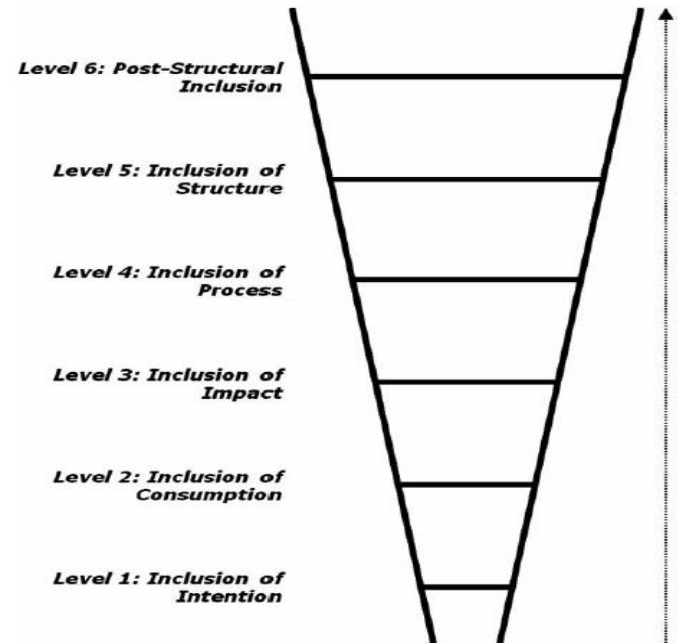
- **Market discovery:** Cooperatives & firm find new PMCs by 1) exploring capabilities that are close to their current capability set (local search); 2) trial and error.
- **Market entry:** Factors considered by cooperatives & firms upon entering the market: 1) time to market, 2) competencies, 3) partner search, 4) patent protection, 5) investments, and 6) risks.
- **Final customer:** Often coops/firms just know their immediate buyer, but not really the ultimate customer. That understanding of the firm could be myopic, lowering understanding of the value chain, or the relevancy of the product for the buyer.
=> Lack of understanding of the entire value chain inhibits the transition.



Ladder of inclusion

Ladder of inclusion

Inclusion of structure addresses the need to create a conducive environment, which provides the breeding ground for business venturing, and thereby decreases the time to market.



Inclusion of structure - I

- Freedom of expression (low degree of inclusion)
 - ✓ Negotiate, Bargain (for the crops)
 - Representation
 - ✓ Democratic voting process within cooperatives
 - Collective action
 - ✓ Youth council
 - ✓ Self-organized (knowledge, regional) groups
 - Trust (high degree of inclusion)
 - ✓ Reciprocity
 - ✓ Positive intention
 - ✓ Lack/absence of corruption
- ***Trust is present within this close-knit traditional Industry. Trust also affects flow of information. Difficult to transfer***

Inclusion of structure - II

- Communication Channel

- ✓ Formal channels

Stakeholders informed via emails, post, newspapers, firm website, regional meetups, and (sometimes) social media. These channels usually have outbound information.

Farmers know about formal communication channels within cooperatives, however, these channels are mostly used to discuss weather distress or crop issues.

- ***There seems a need for inbound channels that provide the opportunity to advice and share feedback about new product developments. This could helps decrease time to market.***

- ✓ Informal channels

Express opinion, exchange of informal know-how

Informal channels are usually both inbound and outbound.

Informal channels are present in cooperatives.

Inclusion of structure - III

- Collaborations
 - *Incubator – Share know-how, gain larger pie of the ecosystem*
 - *Openness – information sharing, data sharing*
 - *Technical risk – reduce knowledge redundancy*
 - *Market risk – complimentary capabilities*
 - *Complex technology – standards, reduce knowledge redundancy*

Questions ?

Thank you!

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