Guide «Sustainability in artisanal cheese dairies in Switzerland»

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Farmhouse and Artisan Cheese & Dairy Producers European Network

ROH CRU RAW FACE Conference 2023

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Sustainability in artisanal cheese manufacturing in Switzerland: background

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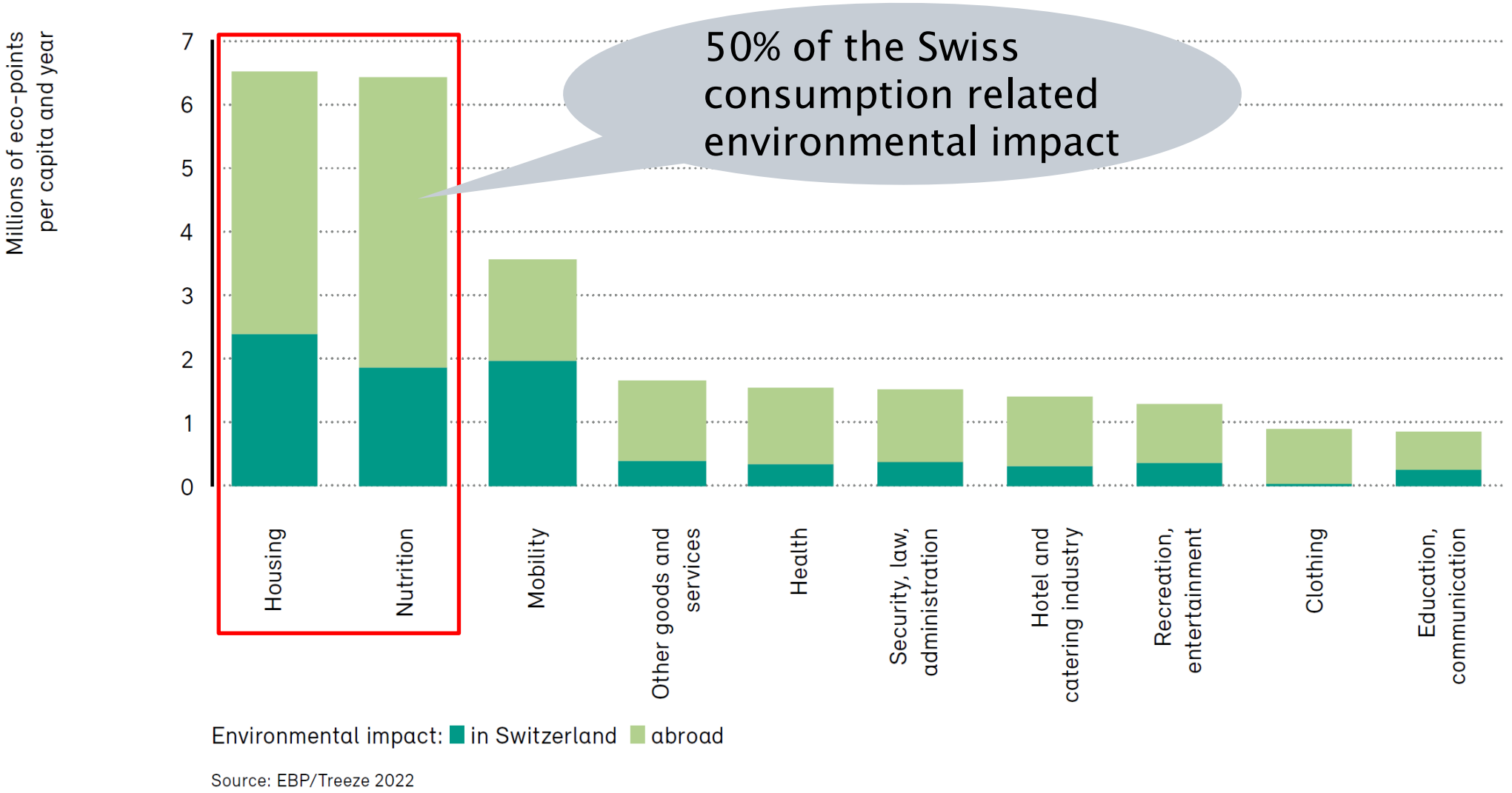
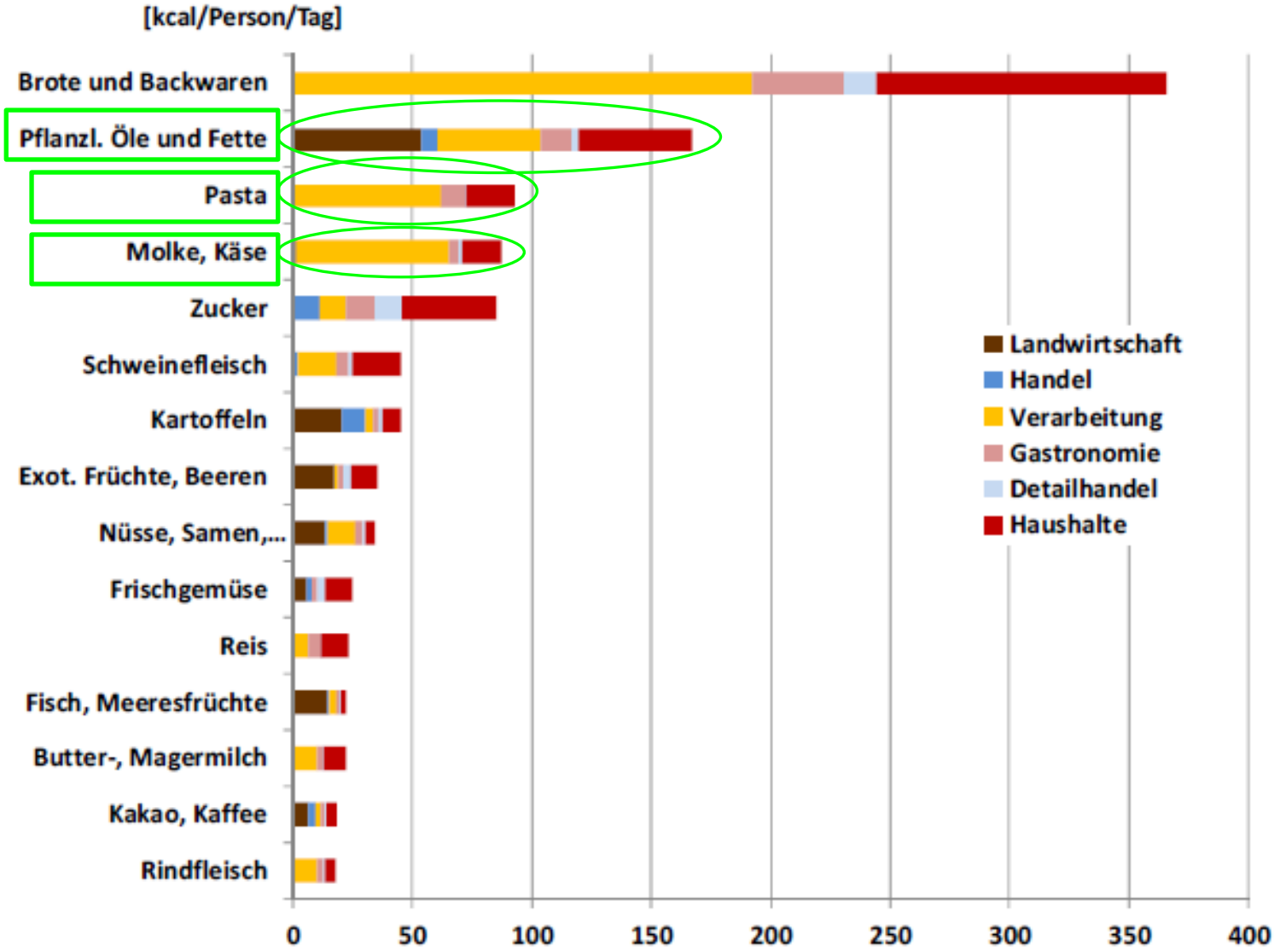
Nutrition – Significance for sustainability in Switzerland



Environment Switzerland 2022 – Report of the Federal Council.

Sustainability aspect „Food Waste“



Quelle: Beretta & Hellweg (2019)

International framework

Sustainable milk production (Fonterra, Freisland Campina, Arla, Emmi, ….)
Sustainable processing
-> sustainability in the whole food value system (Science Based Targets initiative)

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

U.S. Dairy STEWARDSHIP COMMITMENT
Innovation Center for U.S. Dairy

Origin Green IRELAND

QM Nachhaltigkeitsmodul Milch

dsf Dairy Sustainability Framework
REPORTING SECTOR PROGRESS SINCE 2013

The mandatory mix of areas include:

Supplier Sustianability Ceritification, Supplier Initiatives & Packaging

Manufacturing processes & operations
energy - water - waste - emissions - biodiversity

Social sustainability
health & nutrition - community initiatives - employee wellbeing - diversity & inclusion

RED TRACTOR CERTIFIED STANDARDS FOR FARMS DAIRY SCHEME

SUSTAINABLE DEVELOPMENT GOALS

The «green carpet» in artisanal cheese manufacturing

Audited sustainability management system

Every milk processor has an audited sustainability management system, sustainability analysis, sustainability report or recognized self-assessment system. Environmental protection is promoted by considering the company's ecological footprint. Milk processors use their resources sustainably. Cheese bearing the "swissmilk green" brand is produced without a GMO rennet and with a voluntary waiver of additives in accordance with the "Swiss Cheese" industry code.

www.swissmilk.ch/de/green/ch/

Structure of artisanal cheese manufacturing in Switzerland

- Decentralized milk processing, small scale
- Support of peripheral regions
- Protection of multifunctional agriculture
- Authenticity
- Protection of tradition
- (AOP) relation to the terroir
- Minimal processing, naturalness, organic production (bud)

-> Development of a sector solution for self-evaluation and to support the continuous improvement process

Sustainability – a challenge? An added value!

Regulations	Development of market	Optimisation of operations	Differentiation
• Green house gas emmission (CO2-law) • Energy law • etc.	• Increasing consumer demands for sustainability and transparency in the agri-food system	• Comprehensive assessment of operational strengths and weaknesses • Creation of data basis for continuous improvement process • Risk minimization through forward-looking action	• Differentiation of own products • Support for successful science-based marketing • Preservation of value creation and competitiveness

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Project for the development of the sustainability guide

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Project key figures

Partners

- FROMARTE (customer)
- Cheese factories
- School of Agricultural, Forest and Food Sciences HAFL
- Adfinis AG (IT-Partner)
- Fiduciary company

Objectives

- Development of an instrument for the self-evaluation of sustainability
- Contribution to the optimization of sustainability in cheese dairies

Sustainability requires (recurring) assessment process

Important for communication

1. Identification and systematic recording of relevant sustainability aspects,
2. Assessment using criteria and indicators.

Furthermore:

- Definition of methodological minimum requirements, quality criteria and value measures.

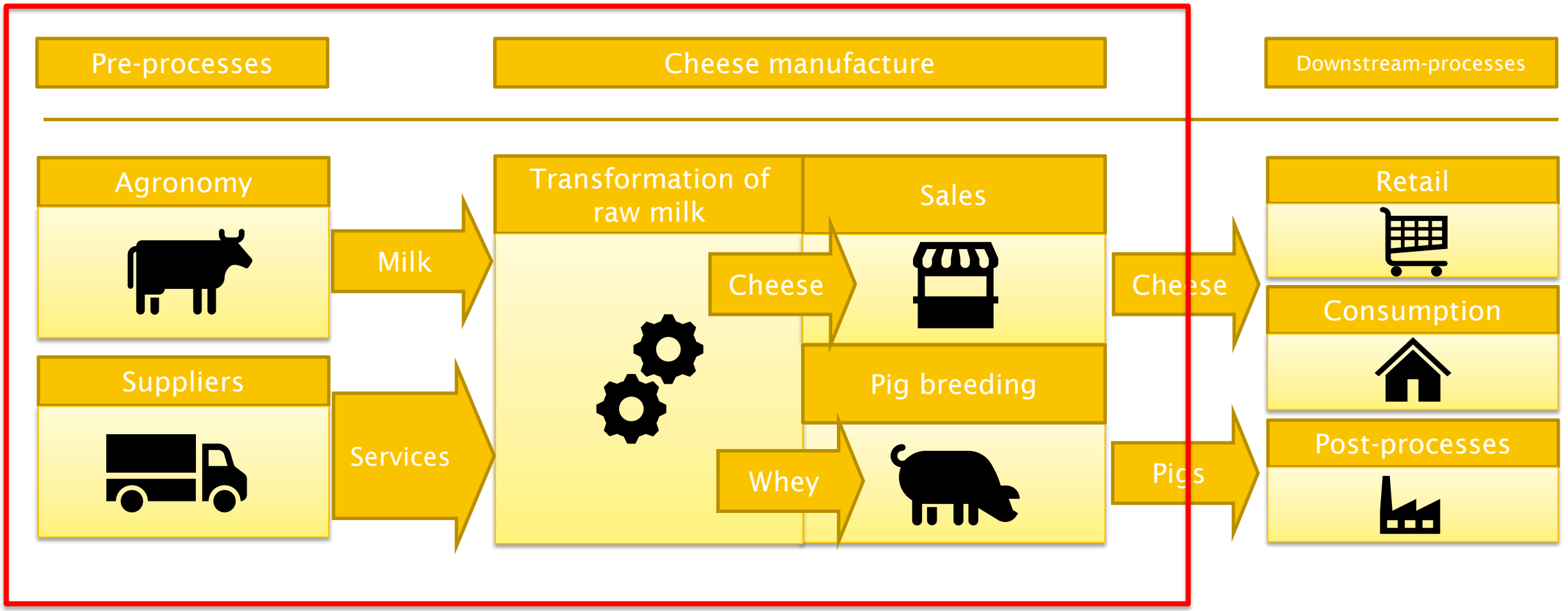
Structure

- Sustainability assessment based on **SAFA guidelines**[1]
- Framework for sustainability assessment of agricultural and food systems
- Four sustainability dimensions
  - Economy
  - Corporate governance
  - Social aspects
  - Ecology
- 28 indicators tailor-made for artisanal cheese dairies

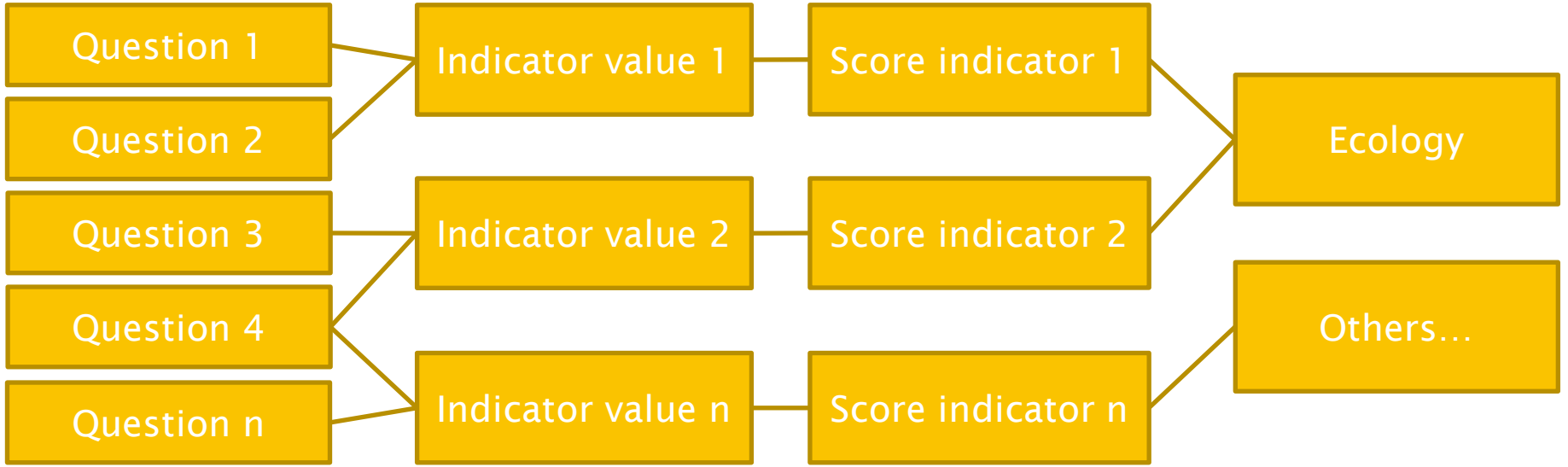
[1] FAO, 2014, SAFA guidelines. Sustainability assessment of food and agriculture systems

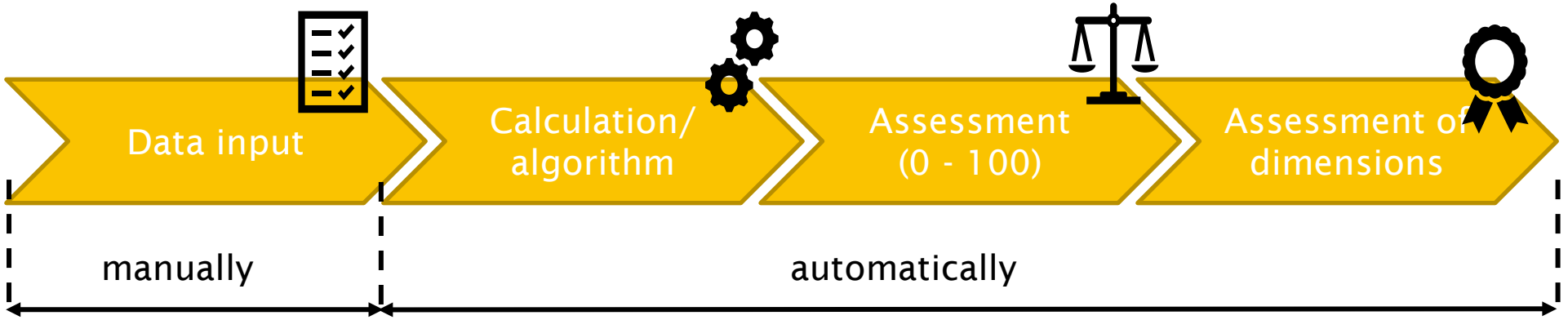
SAFA
SUSTAINABILITY ASSESSMENT OF FOOD AND AGRICULTURE SYSTEMS

Boundaries of the system «cheese manufacture»



Evaluation process - assessment of dimensions





Example: indicator green house gas emmission

Data input of the energy sources purchased and their quantities for the last three years

Energy source	2020	2021	2022	Unit
Electricity (off. provider)				kWh
Electricity (own production, e.g. solar panel)				kWh
Oil fuel				l
Gas fuel				m^3
Biogas				m^3
Timber				kg

Calculation of greenhouse gas emissions per unit of milk processed

$$GHG_{prod} = \emptyset\left(\frac{\sum(E_i \times H_w \times EF)}{\sum m_{milk}}\right)$$

- GHG_{prod} : Greenhous gas emmissions per unit of milk processed
- E_i: Quantity of the energy carrier
- H_w: Heating value of the energy source
- m_{milk}: quantity of milk processed per year
- EF: Emmissionfactor of the energy carrier

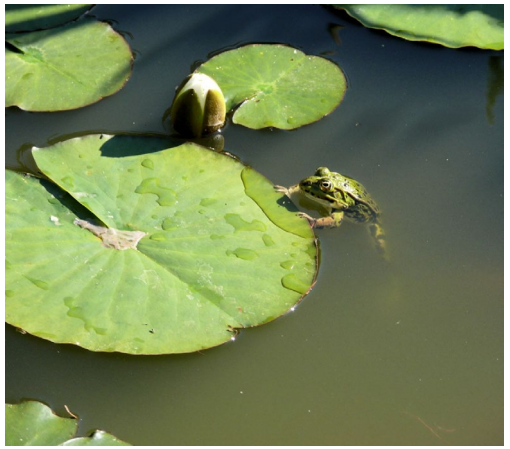
Classification of the calculated value on the scale

$$Score = \left(\frac{GHG_{prod}}{Max(GHG_{prod})}\right)^{-1} \times 100$$

- Score: Achieved score on the scale
- Max(GHG_{prod}): Maximum greenhouse gas emissions from cheese production per unit of milk

Example: Biodiversity

Biodiversity measures on the premises of the cheese dairy



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Guide for sustainability in artisanal cheese manufacturing and implementation

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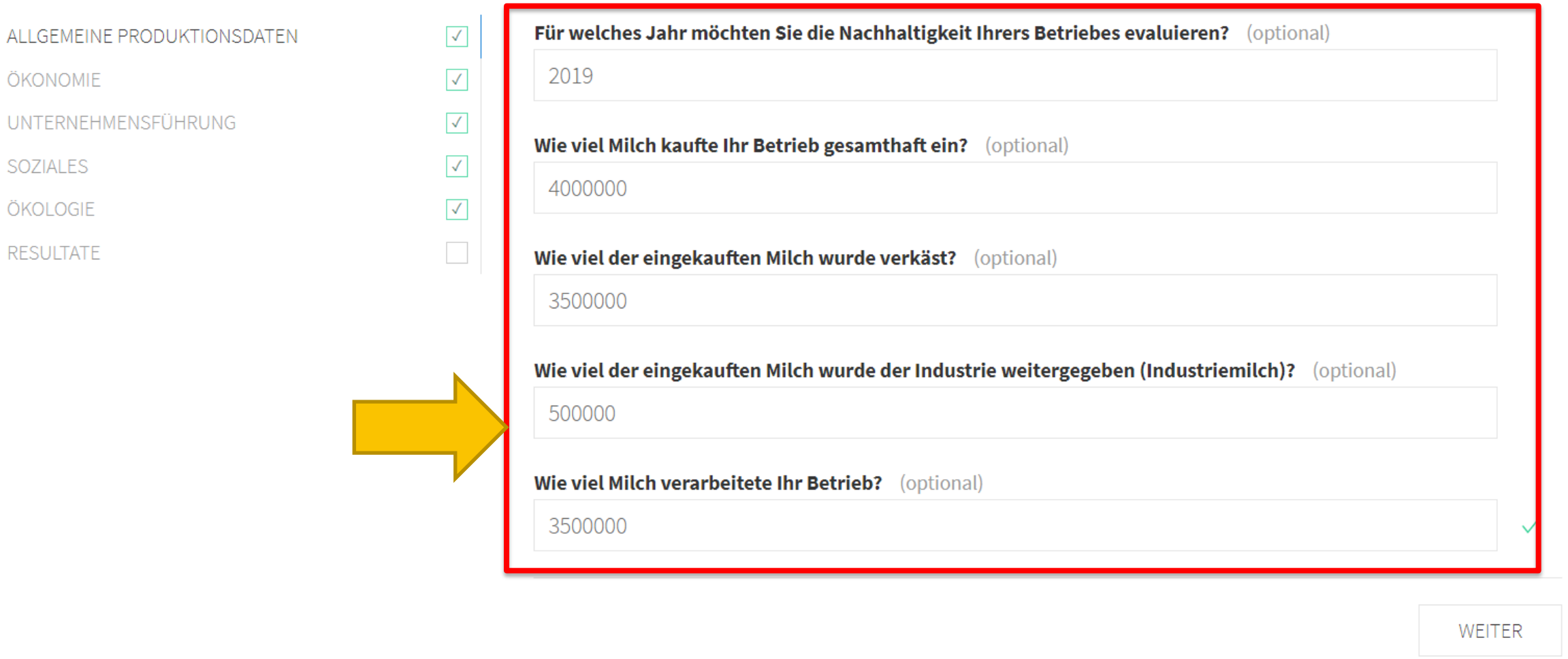
Navigation pane

Data input


ALLGEMEINE PRODUKTIONSDATEN
ÖKONOMIE
UNTERNEHMENSFÜHRUNG
SOZIALES
ÖKOLOGIE
RESULTATE
Für welches Jahr möchten Sie die Nachhaltigkeit Ihrers Betriebes evaluieren? (optional)
2019
Wie viel Milch kaufte Ihr Betrieb gesamthaft ein? (optional)
4000000
Wie viel der eingekauften Milch wurde verkäst? (optional)
3500000
Wie viel der eingekauften Milch wurde der Industrie weitergegeben (Industriemilch)? (optional)
500000
Wie viel Milch verarbeitete Ihr Betrieb? (optional)
3500000
WEITER

Results

Alle Werte werden auf einer Skala zwischen 0 und 100 Punkten eingestuft (Scores), dabei gilt folgende Unterteilung:

- 0 bis 49 Punkte - Ungenügend
- 50 bis 66 Punkte - Genügend
- 67 bis 100 Punkte - Übertroffen

Resultate Ökonomie

Gewinnmarge Wert (%)

4

Punktzahl Gewinnmarge

54

Gewinnrücklage Wert (%)

25

Punktzahl Gewinnrücklage

25

Liquiditätsgrad 2 Wert (%)

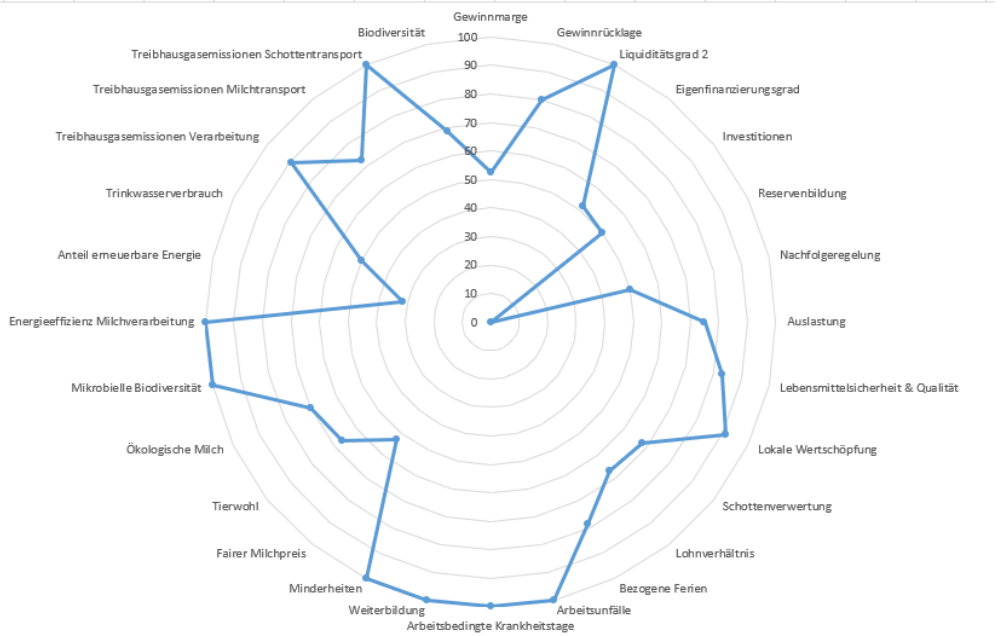
1200

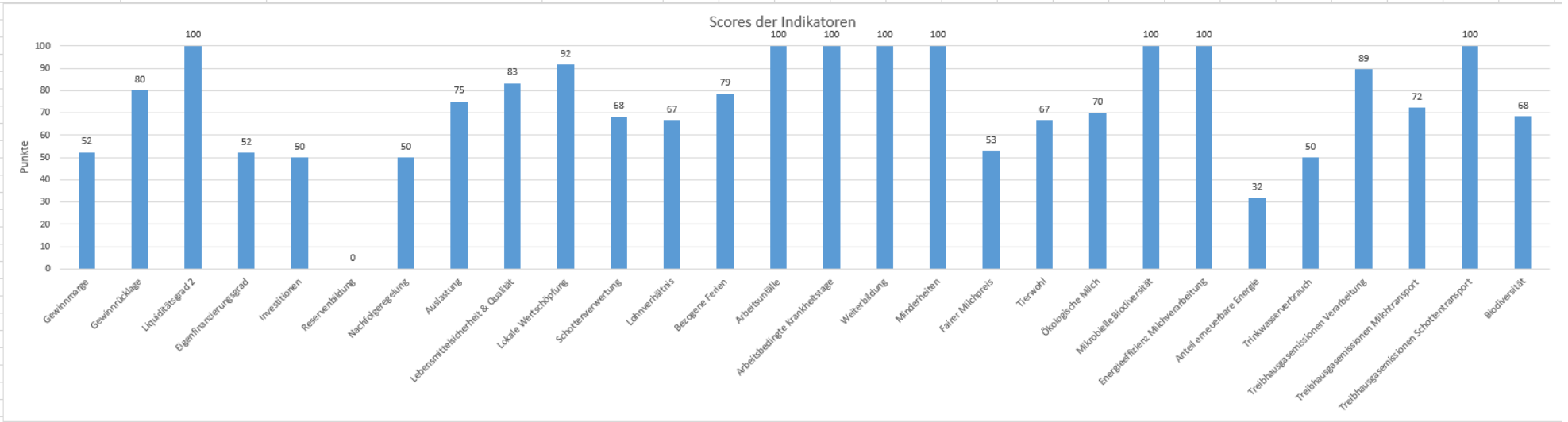
Punktzahl Liquiditätsgrad 2

100

Result of assessment (spider web)

Dimensionen	Scores Dimensionen	Indikatoren	Scores
Ökonomie	71	Gewinnmarge	52
		Gewinnrücklage	80
		Liquiditätsgrad 2	100
		Eigenfinanzierungsgrad	52
Unternehmensführung	60	Investitionen	50
		Reservenbildung	0
		Nachfolgeregelung	50
		Auslastung	75
		Lebensmittelsicherheit & Qualität	83
		Lokale Wertschöpfung	92
		Schottenverwertung	68
Soziales	83	Lohnverhältnis	67
		Bezogene Ferien	79
		Arbeitsunfälle	100
		Arbeitsbedingte Krankheitstage	100
		Weiterbildung	100
		Minderheiten	100
		Fairer Milchpreis	53
		Tierwohl	67
Ökologie	76	Ökologische Milch	70
		Mikrobielle Biodiversität	100
		Energieeffizienz Milchverarbeitung	100
		Anteil erneuerbare Energie	32
		Trinkwasserverbrauch	50
		Treibhausgasemissionen Verarbeitung	89
		Treibhausgasemissionen Milchtransport	72
		Treibhausgasemissionen Schottentransport	100
		Biodiversität	68
		Gesamtscore Nachhaltigkeit	**73**





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Experiences in cheese factories

Cheese factory Tufertschwil

- Production of Chällerhocker, a hard cheese made of raw milk (1.26 Mio kg raw milk per year)
- Simple input portal (via quality management system Fromarte)
- Very useful for self-evaluation
- Helps to become aware of the different aspects of sustainability
- Economic data comes from the fiduciary annual accounts
- Annual, unforeseen fluctuations in cheese production can have a major impact on the economic value
- Some indicators very detailed (i.e. employment level of employees, milk label), others not detailed enough (i.e. investments, maturation, crop use)
- Not well known and not addressed enough in the industry…

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- 13th FACE Conference in Grangeneuve, 12 – 13 October 2023

Cheese factory Chäs-Hütte Walchwil

André Rust

- Production of Gruyère AOP and other dairy products (2.5 Mio kg raw milk per year)
- Simple input portal (via quality management system Fromarte)
- Data input in 2020
- Many questions – too complicated
- Complexity of a comprehensive sustainability assessment
- Wants to support sustainability: photovoltaic system on the roof, replacement of oil heating system
- Not well known and not addressed enough in the industry…
- There should be more pressure, but at the same time on a voluntary basis…

Conclusions

Conclusions

- Pressure on sustainability efforts in agro-food system is increasing
- Decentralized, artisanal cheese production already serves many sustainability aspects
- Common position on sustainability for the entire sector (Fromarte)
- Very comprehensive, valuable guideline
- Increases credibility and added value (differentiation)
- On a voluntary basis: self-assessment, benchmarking, awareness increase, continuous improvement process

Challenges:

- Ensuring transparency and credibility
- Increase coverage in sector, increase involvement
- Complexity of content & continuous development/improvement
- Further development of sustainability services is of utmost relevance and demands and complexity are increasing
- Raising consumer awareness of sustainability issues is an ongoing task.

Thank you very much for your attention!

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Fachhochschule

Jan Lemola
Matthias Meier

Adfinis

KÄSER TREUHAND
persönlich. kompetent. proaktiv.

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