
# Christine Jasch, www.ioew.at

# Product assessment tools

## ISO 14020 Ecolabeling

## ISO 14060 LCA

## Bio/Organic, Fair Trade, FSC

# Product Lables !

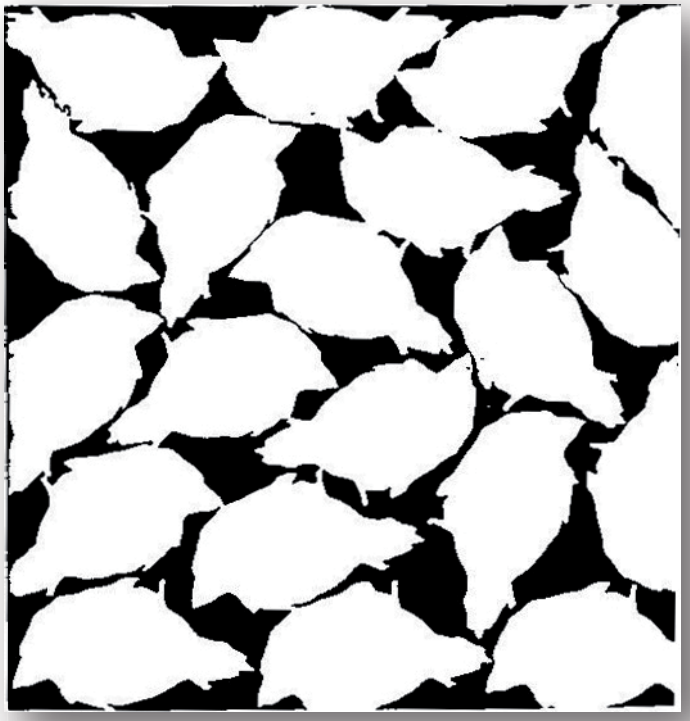
- What eco labels do you know?
- What labelled products do you know?

# ECO Labels



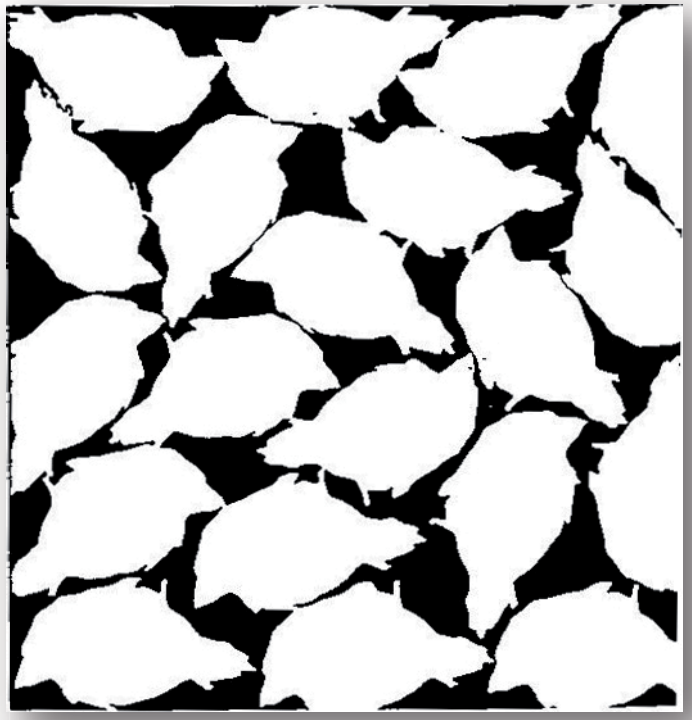

WITH ALL THESE ECO-LABELS, IT'S THE ONLY EMPTY SPACE LEFT!!
!?
1 ECO-PEG TOOTHBRUSH
P.K 96

# ?



# Chicken breeding





Comparison of maximum amount of chicken per m2
in organic farming and conventional farming

# What is organic farming?



- IFOAM defines the overarching goal of organic farming as follows:
- "Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved..“

- Source: International Federation of Organic Agriculture Movements

# What is organic farming?



- **Organic farming** is the form of agriculture that relies on crop rotation, green manure, compost, biological pest control, and mechanical cultivation to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilizers and synthetic pesticides, plant growth regulators, livestock antibiotics, food additives, and genetically modified organisms.

- Source Wikipedia

# BIO AUSTRIA-Label

- Mostly found on products marketed directly by farmers on local markets or directly on the farm.
- The label garantees that the products have been produced in accordance with the BIO AUSTRIA requirements.
- www.bio-austria.at
- In Austria about 15 % of the agricultural land and of all products sold are organic, top in Europe!

# Labeling for organic food



- The European lable for organic food certifies accordance with the EU Regulation (EWG) 2092/91 and is voluntary. Several other brand names are on the market, some of which have much stricter requirements, e.g. Demeter.



Die Logos aller österreichischen Bioverbände

# Bio Kennzeichnung



- The Austrian AMA-Bio-Lable garanties the accordance with the EU Regulation 2092/91 and in addition the Austrianfood requirements.
- The red label shows, that the ingredients have primarily ben produced in Austria, e.g. for bananamilk, the milk must be 100 % organic from Austria, the organic bananas may have a maximum share of 10 % of the product. The black label states, that the ingredients are organic, but doesnt state, where they come from.


Das Bio-Gütezeichen
der Agrar Markt Austria
www.ama.at

# Trade labels

- Ja! natürlich (Billa, Merkur), Natur pur (Spar)
- According to  Bio-Austria criteria

# Fair Trade

NACHHALTIG wirtschaften

- **Fair Trade** is an organized social movement and market-based approach that aims to help producers in developing countries obtain better trading conditions and promote sustainability. The movement advocates the payment of a higher price to producers as well as social and environmental standards. It focuses in particular on exports from developing countries to developed countries, most notably handicrafts, coffee, cocoa, sugar, tea, bananas, honey, cotton, wine, fresh fruit, chocolate and flowers.
- Fairtrade certification purports to guarantee not only fair prices, but also the principles of ethical purchasing. These principles include adherence to ILO agreements such as those banning child and slave labour, guaranteeing a safe workplace and the right to unionise, adherence to the United Nations charter of human rights, a fair price that covers the cost of production and facilitates social development, and protection and conservation of the environment. The Fairtrade certification system also attempts to promote long-term business relationships between buyers and sellers, crop prefinancing, and greater transparency throughout the supply chain and more.

# ETHLETIC Sneakers - the ethical alternative
# FairDeal Trading Community Foods Ltd.



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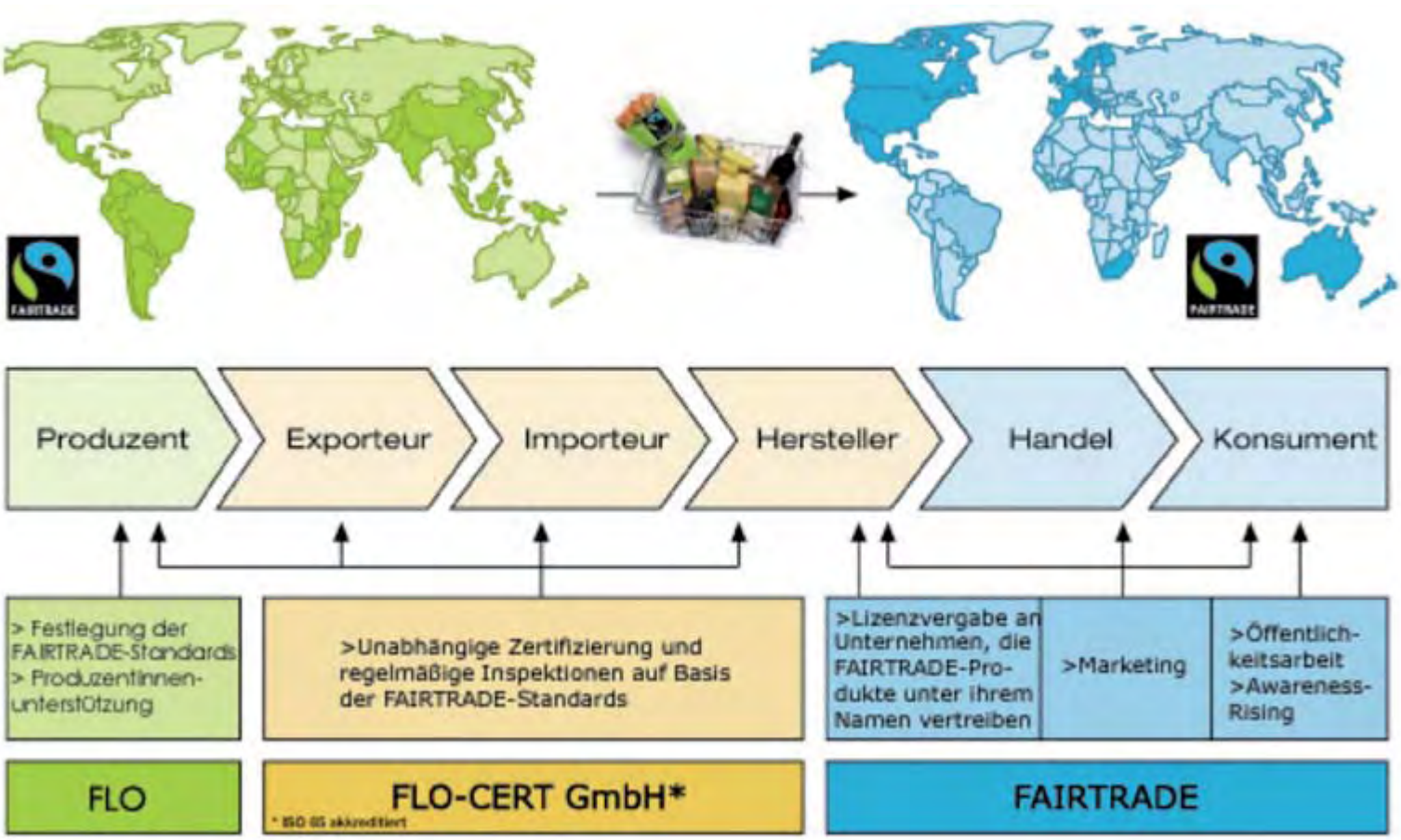

Produzent
Exporteur
Importeur
Hersteller
Handel
Konsument
> Festlegung der FAIRTRADE-Standards
> Produzentinnen-unterstützung
>Unabhängige Zertifizierung und regelmäßige Inspektionen auf Basis der FAIRTRADE-Standards
>Lizenzvergabe an Unternehmen, die FAIRTRADE-Produkte unter ihrem Namen vertreiben
>Marketing
>Öffentlichkeitsarbeit
>Awareness-Rising
FLO
FLO-CERT GmbH*
FAIRTRADE

# ISO TC 207 (ISO 14000 Serie)



- ISO/TC 207/WG 7 Environmental aspects in product standards
- ISO/TC 207/WG 8 Material Flow Cost Accounting
- ISO/TC 207/SC 1 Environmental management systems
- ISO/TC 207/SC 2 Environmental auditing and related environmental investigations
- ISO/TC 207/SC 3 Environmental labelling
- ISO/TC 207/SC 4 Environmental performance evaluation
- ISO/TC 207/SC 5 Life cycle assessment
- ISO/TC 207/SC 6 Terms and definitions
- ISO/TC 207/SC 7 Green house gas management

- Only NO Product has NO environmental impact!

# Environmental aspects in product standards

- One of the first standards of the ISO 14000 Series; addressed at all other standardisation bords, preventing requirements in standards with negative environmental impacts, e.g. by excessive quality requirements which hinder the use of reclycled materials.

# Eco-Labels



- **Ecolabel** is a labelling system for consumer products (excluding foods and medicine) that are made in a certain fashion to avoid detrimental effects on the environment. Many (but not all) ecolabels are not directly connected to the firms that manufacture or sell the ecolabelled products. Just as for the quality assurance labelling systems it is of imperative importance that the labelling entity is clearly divided from and independent of the manufacturers. All ecolabelling is voluntary, are not mandatory by law..
- The German blue angle is granted since 1977. It was the first Eco-Label worldwide.
- The Austrian Eco label is granted since 1990 by the Austrian ministry of Environment. It was designed by Fritz Hunderwasser.
- The European flower exists since 1992, but is not much in use.
- The nordic swan exists since 1989 and is also visible in Austria, e.g. on paper.
- In addition to the national labels, there are several labels by trade marks, companies, business sectors, NGOs, etc.

# 100 H2O Zeichen
# www.umweltzeichen.at

# Product Groups



- Products
  - * Construction and Living
- * Office, Paper, Print
- * Gardening
- * Green Funds
- * Green Electricty
- * Household supplies
- Tourism
- Schools
- Other educational institutes

# National Ecolables

- 


# Packaging



- Green dot = Fee for packaging material has been paid to Altstoff Recycling Austria (ARA), no environmental significance
- Labeling of plastic or card board



# Building materials

- natureplus
- IBO – Institut für Baubiologie
- Timber preservative acc. To ÖNORM

# Textils




LAMU
LAMU
GLOBAL ORGANIC
TEXTILE STANDARD
FAIRTRADE
Certified Cotton
NATURTEXTIL


TEXTILES VERTRAUEN
Schadstoffgeprüfte Textilien
nach Öko-Tex Standard 100
Prüf-Nr. 00000000
Institut


TEXTILES VERTRAUEN
Umweltfreundliche Betriebsstätte
nach Öko-Tex Standard 1000
No. 00000000
Institut

# ISO 14060 LCA Product Life Cycle Assessment

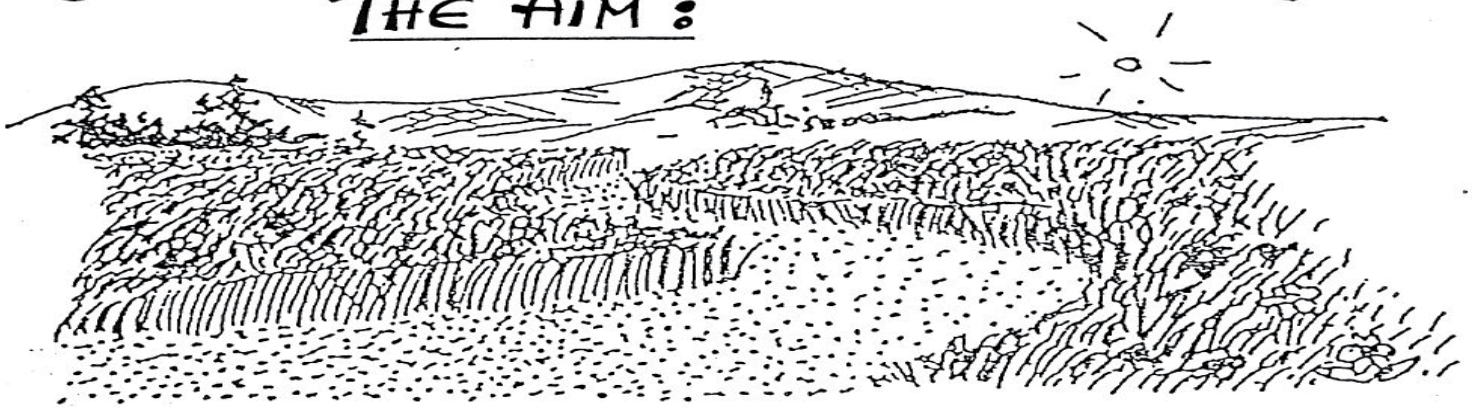
- The goal of LCA is to compare the full range of environmental and social damages assignable to products and services, to be able to choose the least burdensome one.
- The term 'life cycle' refers to the notion that the assessment requires the assessment of raw material extraction, production, manufacture, distribution, use and disposal including all intervening transportation steps necessary or caused by the product's existence. The sum of all those steps - or phases - is the life cycle of the product. The concept also can be used to optimize the environmental performance of a single product (ecodesign) or to optimize the environmental performance of a company.
- Common categories of assessed damages are global warming (greenhouse gases), acidification, smog, ozone layer depletion, eutrophication, eco-toxicological and human-toxicological pollutants, habitat destruction, desertification, land use as well as depletion of minerals and fossil fuels.

# Goal and Scope definition

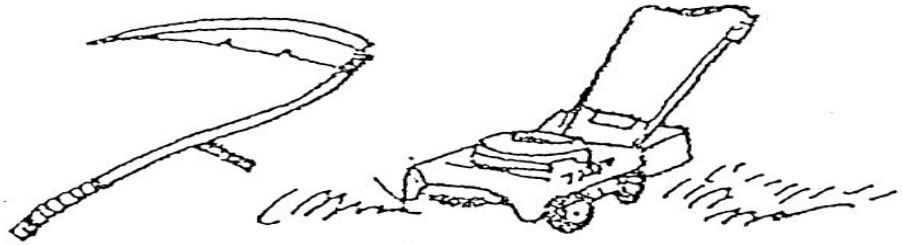
- In the first phase, the goal and scope of study in relation to the intended application are defined. The object of study is described in terms of a so-called *functional unit*. The *system boundary* determines which unit processes are included in the LCA and must reflect the goal of the study.

# CHOICE OF REFERENCE PRODUCT

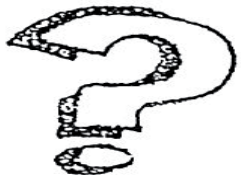
## THE AIM:



## THE COMMON TOOLS = REFERENCE PRODUCTS:



## THE NEW DESIGN....



# Life Cycle Inventory



- This phase involves data collection and modeling of the product system, as well as description and verification of data. This encompasses all data related to environmental (e.g., $CO_2$) and technical (e.g., intermediate chemicals) quantities for all relevant unit processes within the study boundaries that compose the product system. Examples of inputs and outputs quantities include inputs of materials, energy, chemicals and 'other' - and outputs of air emissions, water emissions or solid waste. Other types of exchanges or interventions such as radiation or land use can also be included.

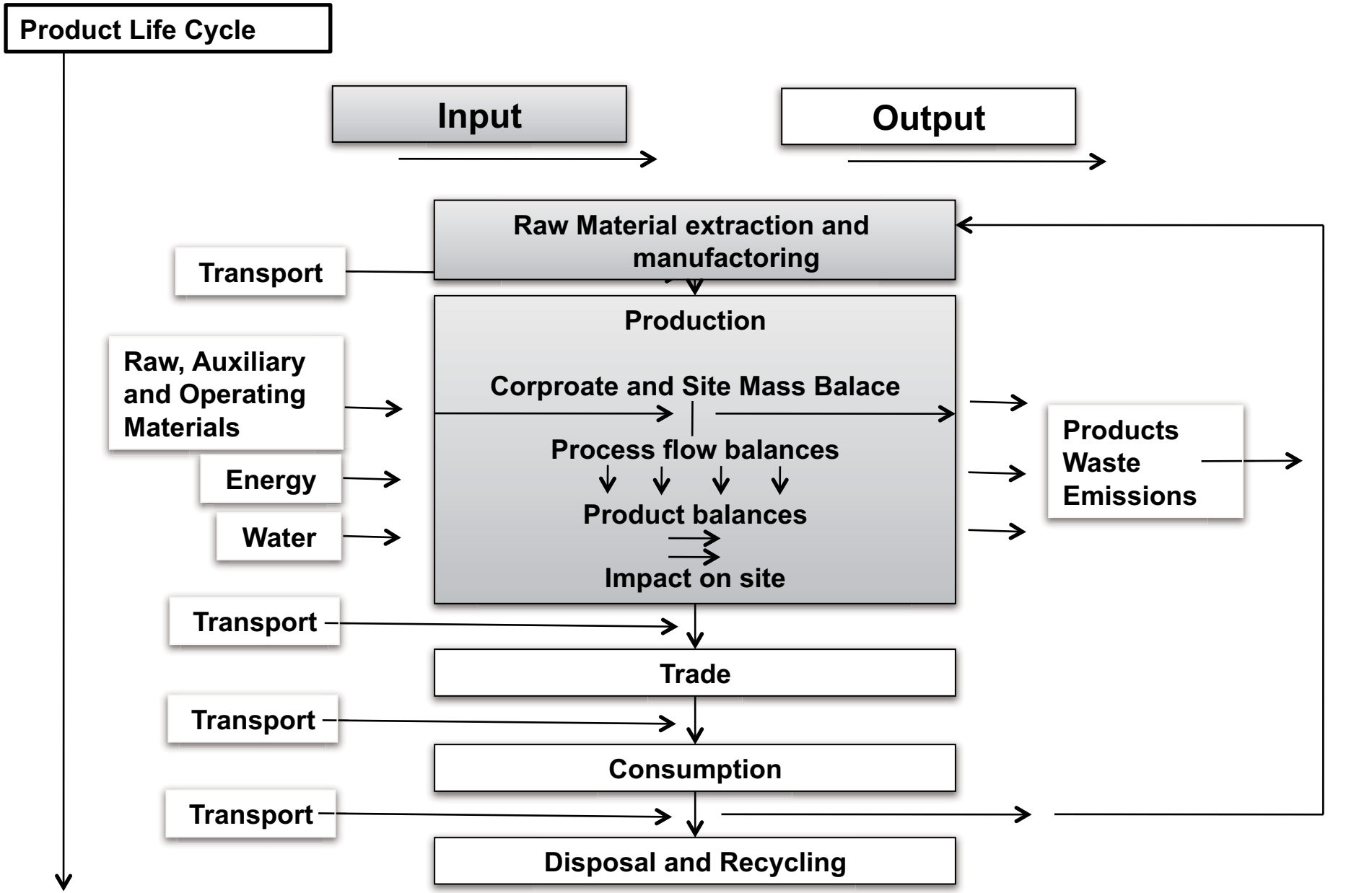
# Life Cycle Impact Assessment

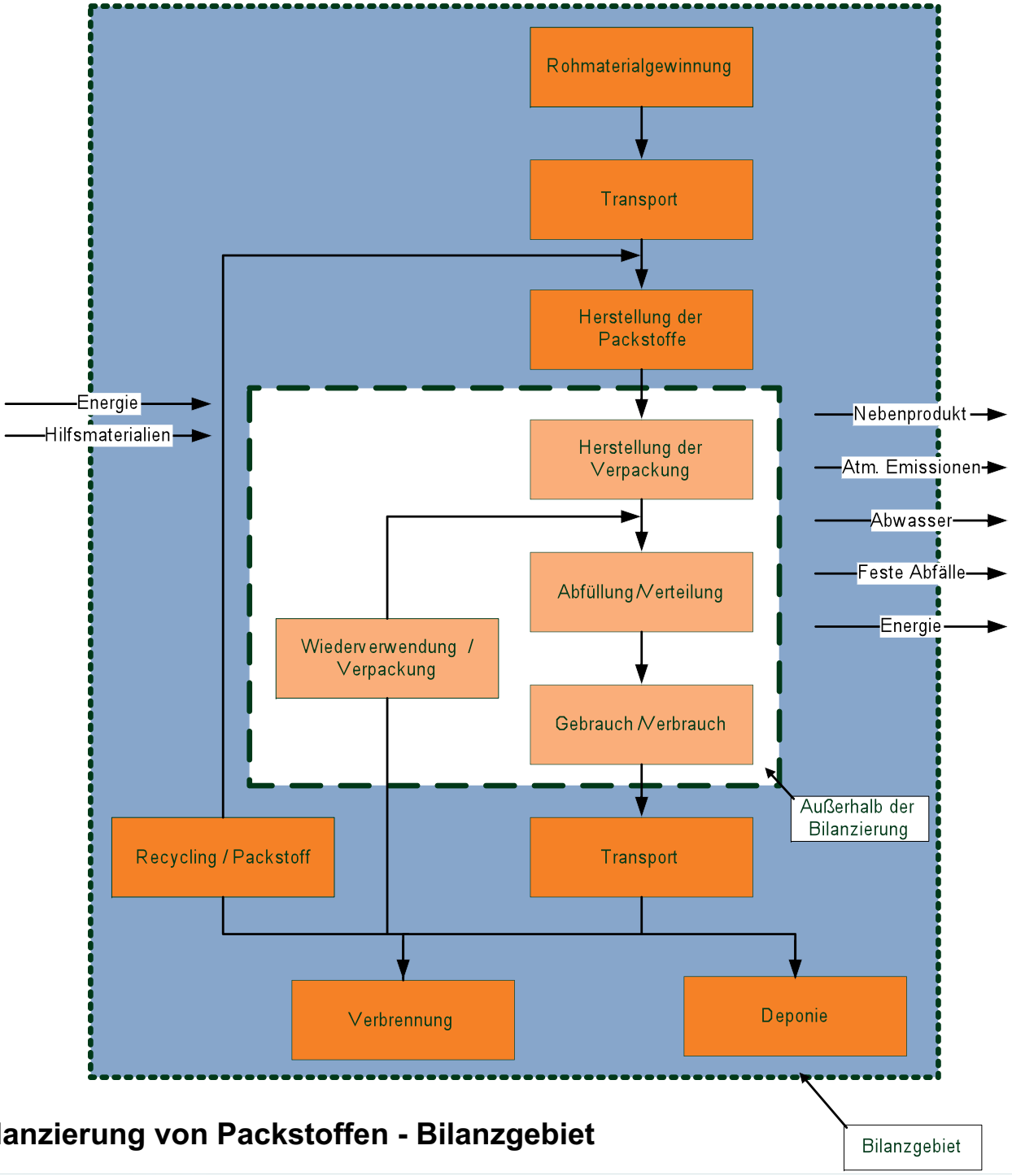


- This phase is aimed at evaluating the contribution to impact categories such as global warming, acidification, etc. The first step is termed characterization. Here, impact potentials are calculated based on the LCI results. The next steps are normalization and weighting, but these are both voluntary according the ISO standard. Normalization provides a basis for comparing different types of environmental impact categories (all impacts get the same unit). Weighting implies assigning a weighting factor to each impact category depending on the relative importance. The weighting step is not always necessary to create a so called “single indicator”, e.g. when estimating environmental external costs.

# Interpretation

- This phase  is an analysis of the major contributions, sensitivity analysis and uncertainty analysis. This stage leads to the conclusion whether the ambitions from the goal and scope can be met. More importantly: what can be learned from the LCA? All conclusions are drafted during this phase. Sometimes an independent critical review is necessary, especially when comparisons are made that are used in the public domain.
- [edit]

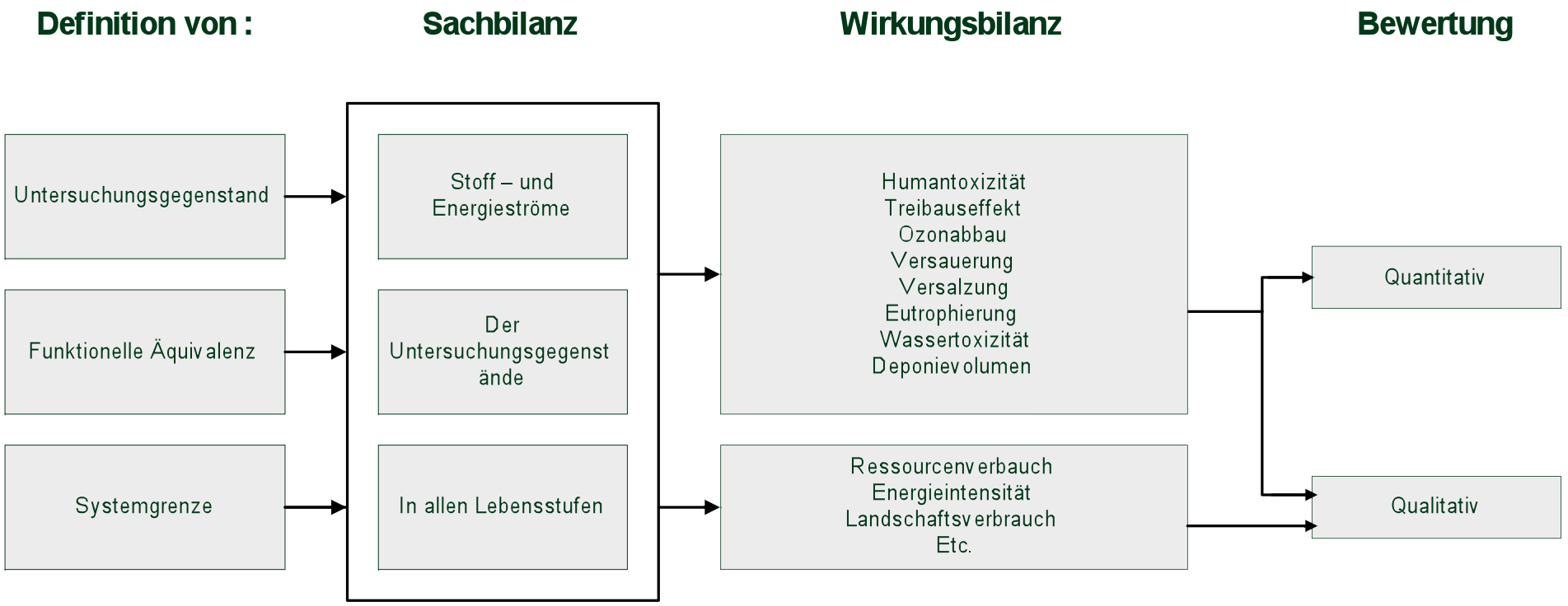

Product Life Cycle
Input
Output
Raw Material extraction and manufactoring
Transport
Production
Raw, Auxiliary and Operating Materials
Corproate and Site Mass Balace
Energy
Process flow balances
Water
Product balances
Impact on site
Products
Waste
Emissions
Transport
Trade
Transport
Consumption
Transport
Disposal and Recycling
IÖW




**Ökologische Bilanzierung von Packstoffen - Bilanzgebiet**

IÖW

# LCA procedure according to UBA Berlin

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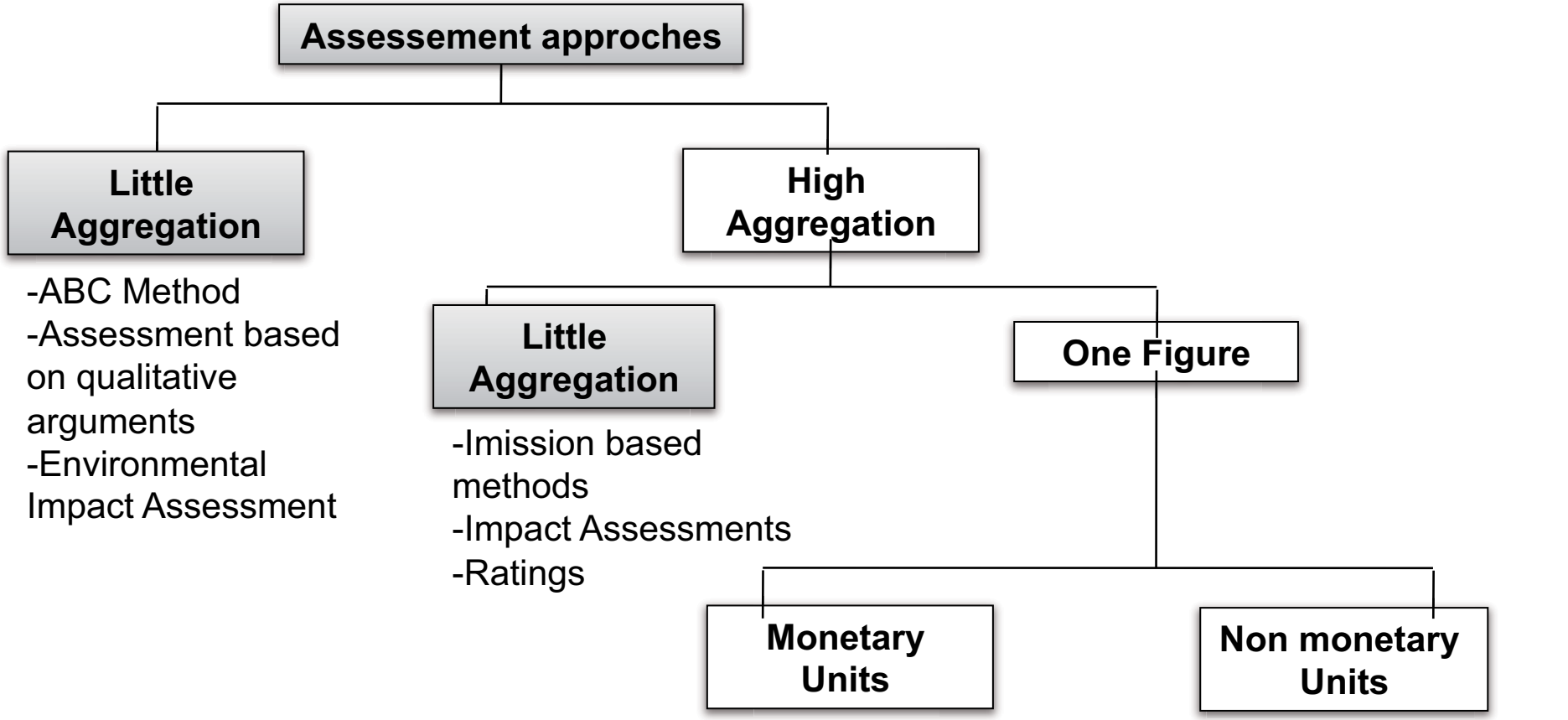
# Assessment approaches for LCAs

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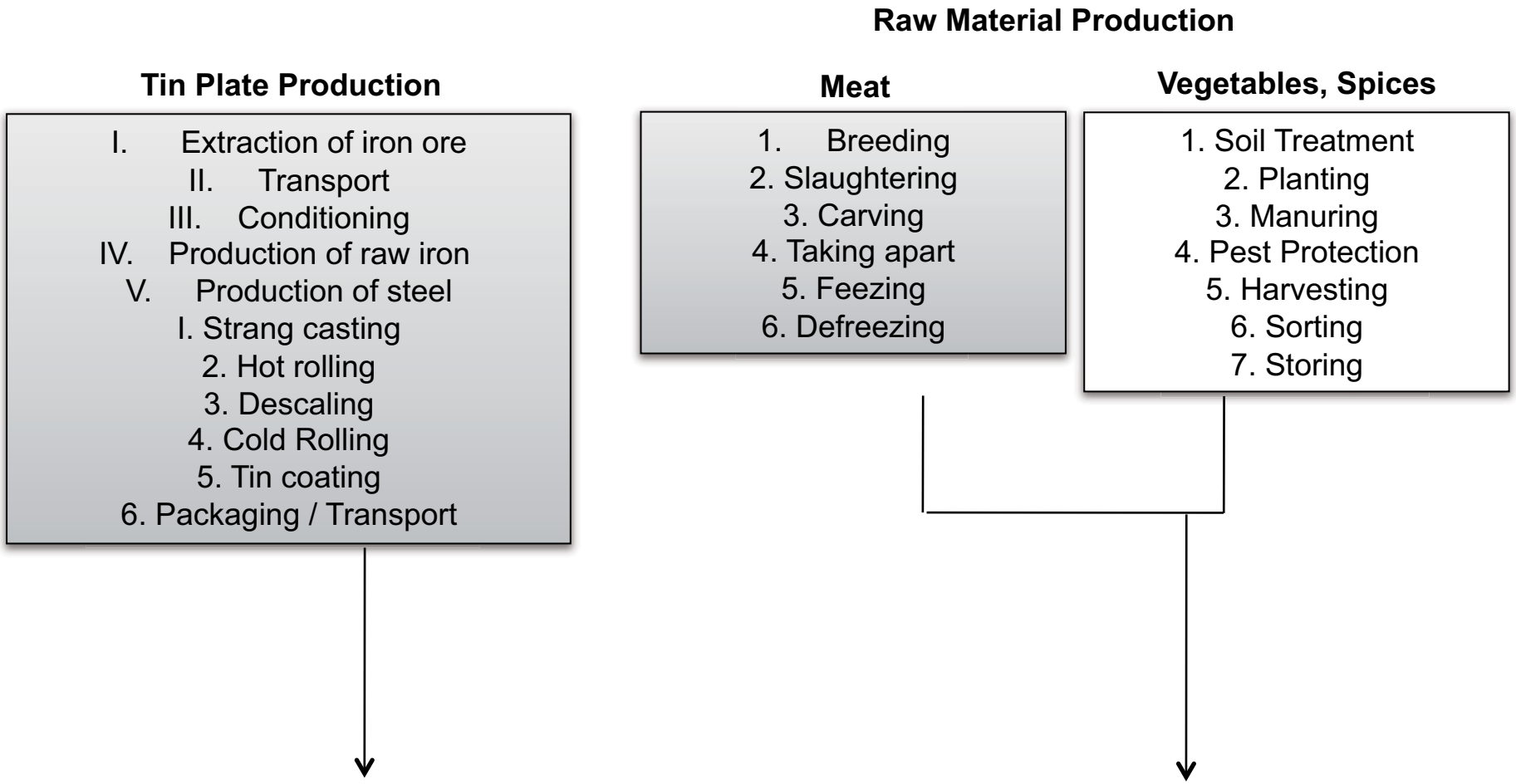
# LCA example canned goulash

„From ore to the can“

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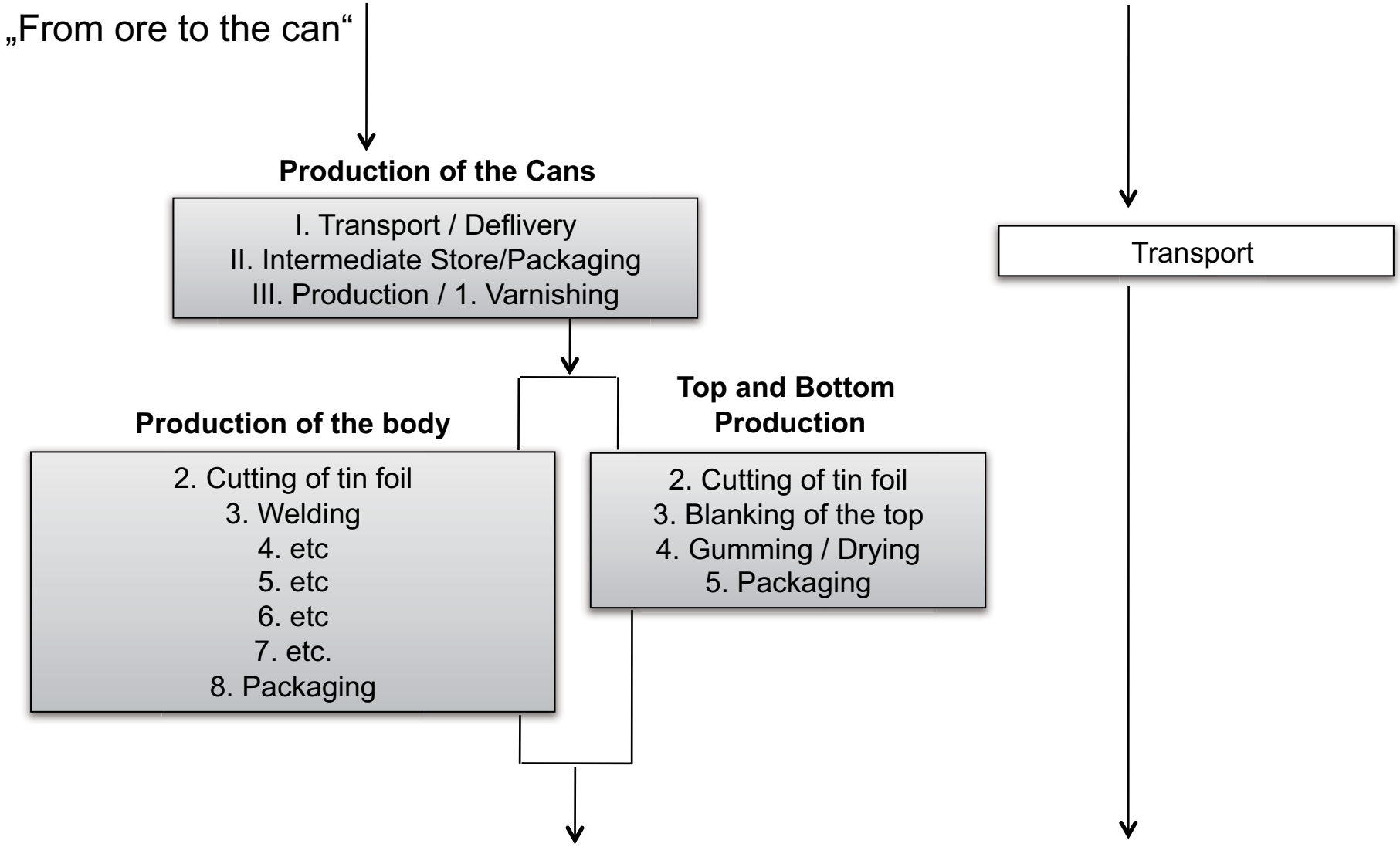

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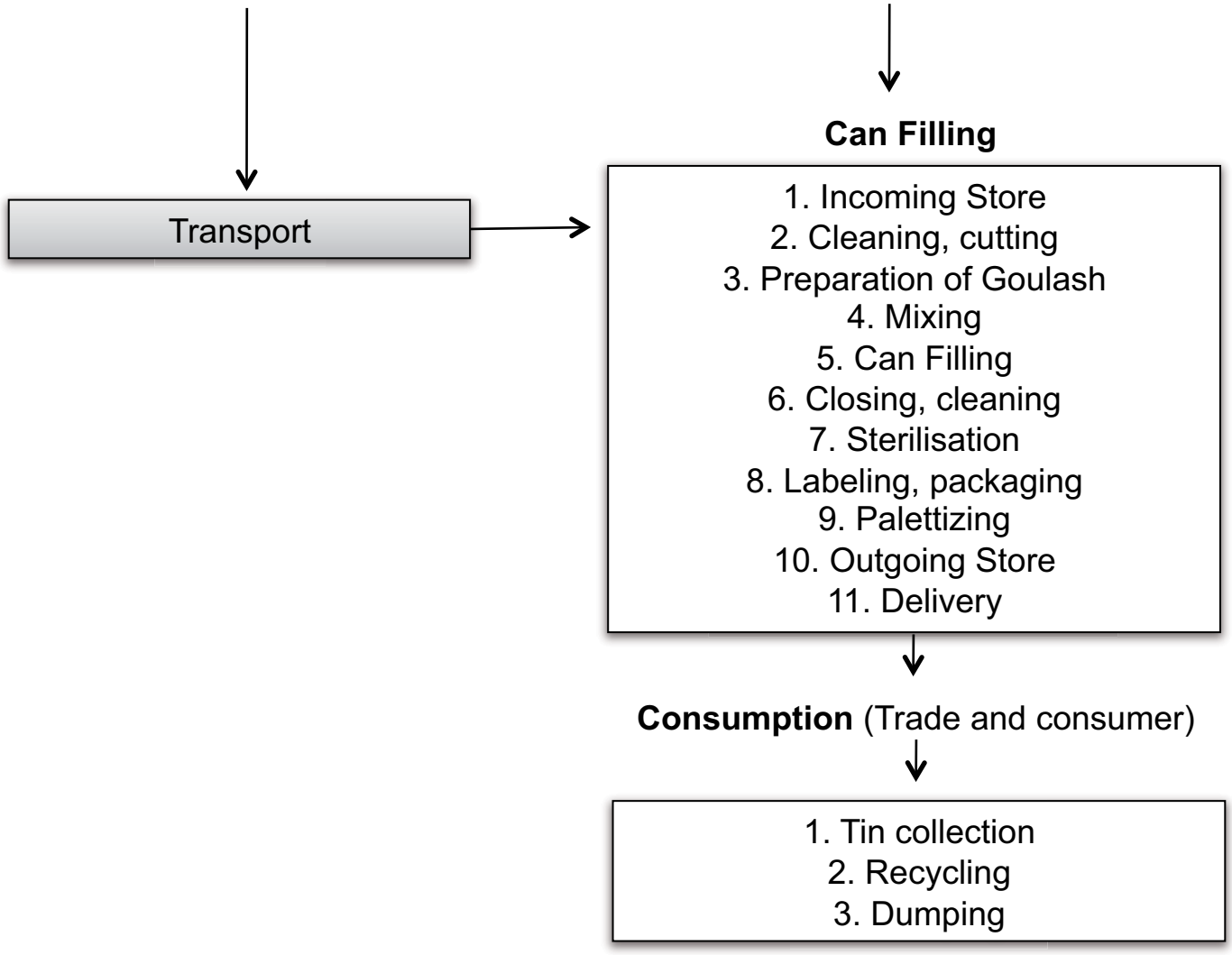
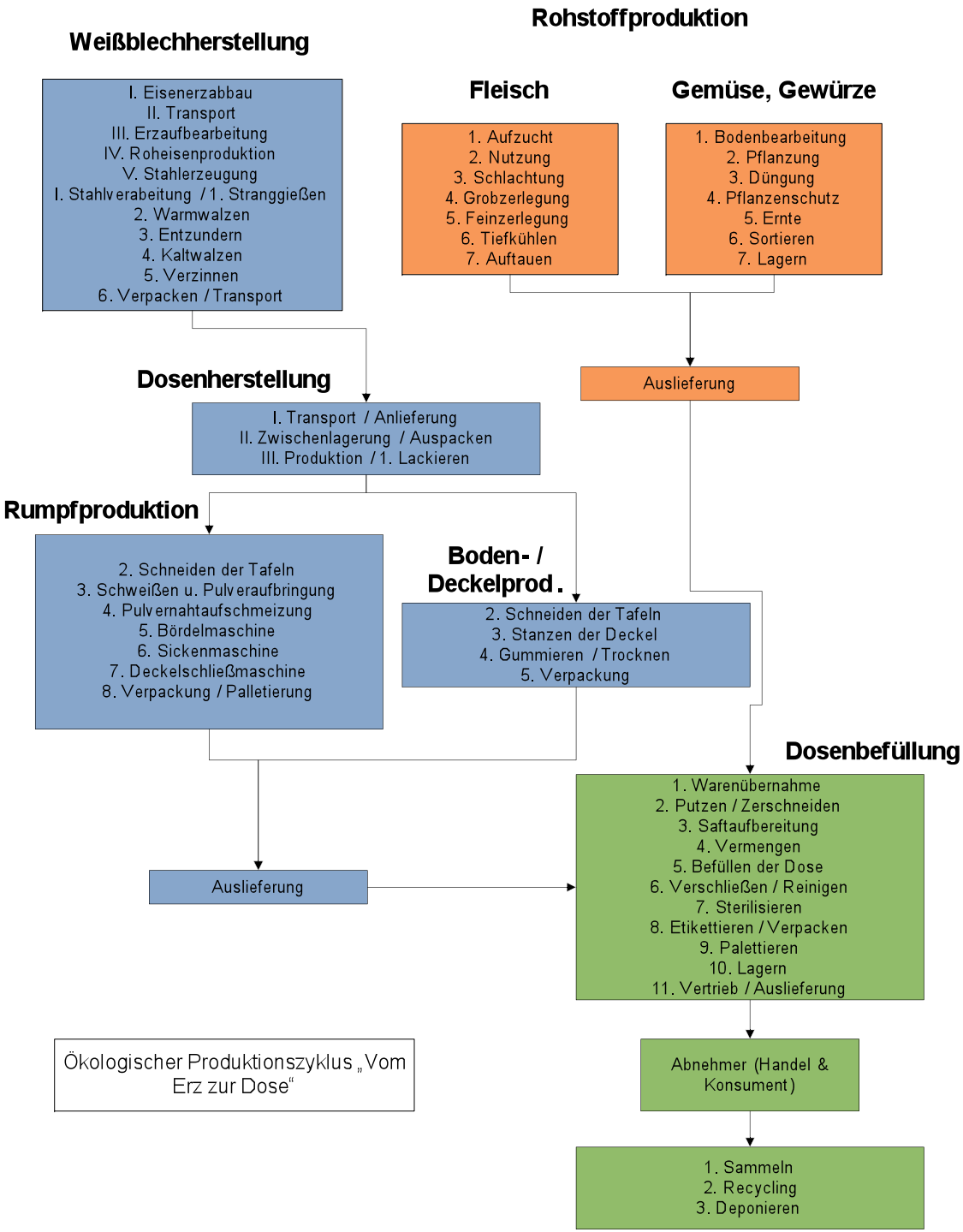
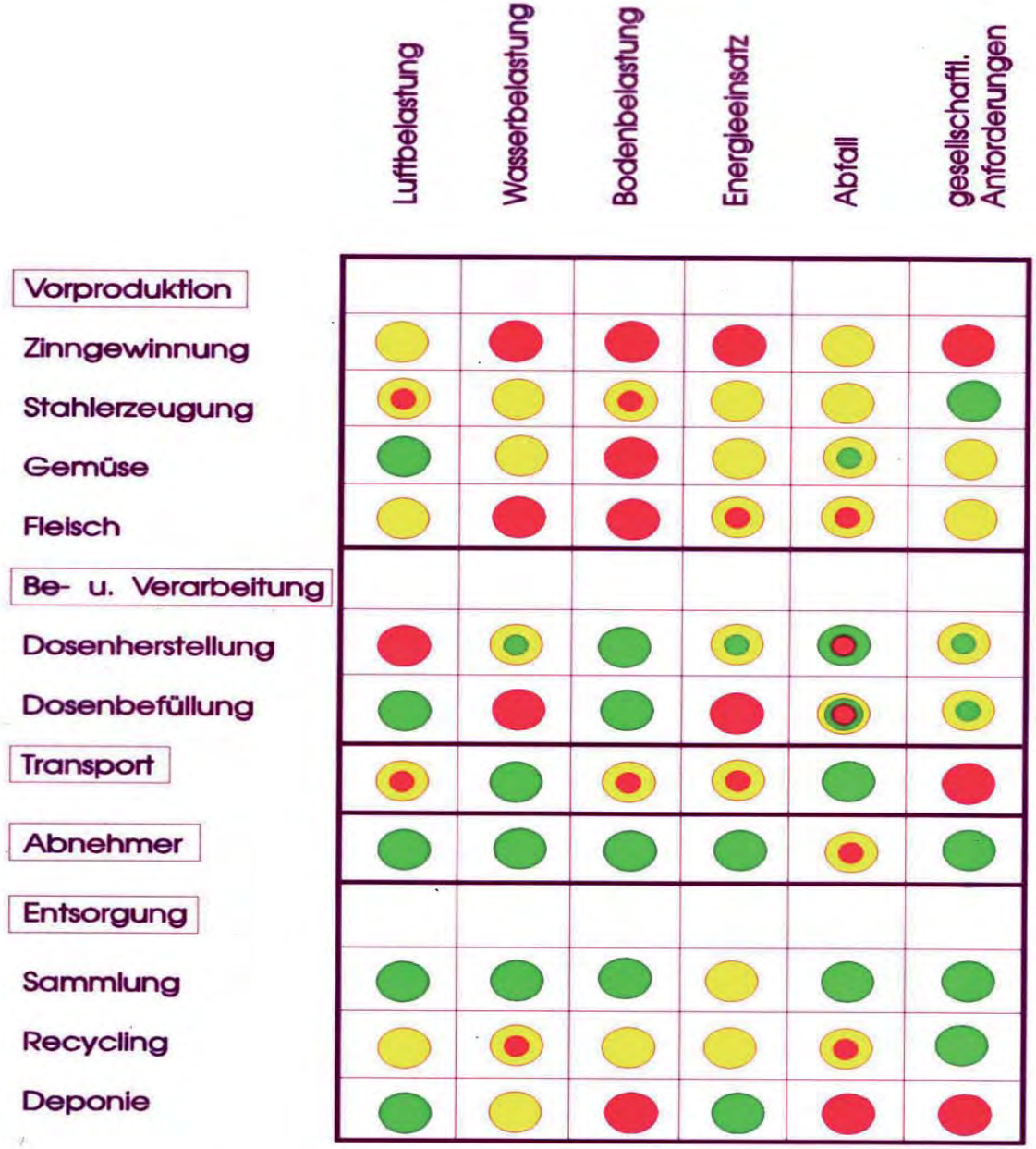



IÖW

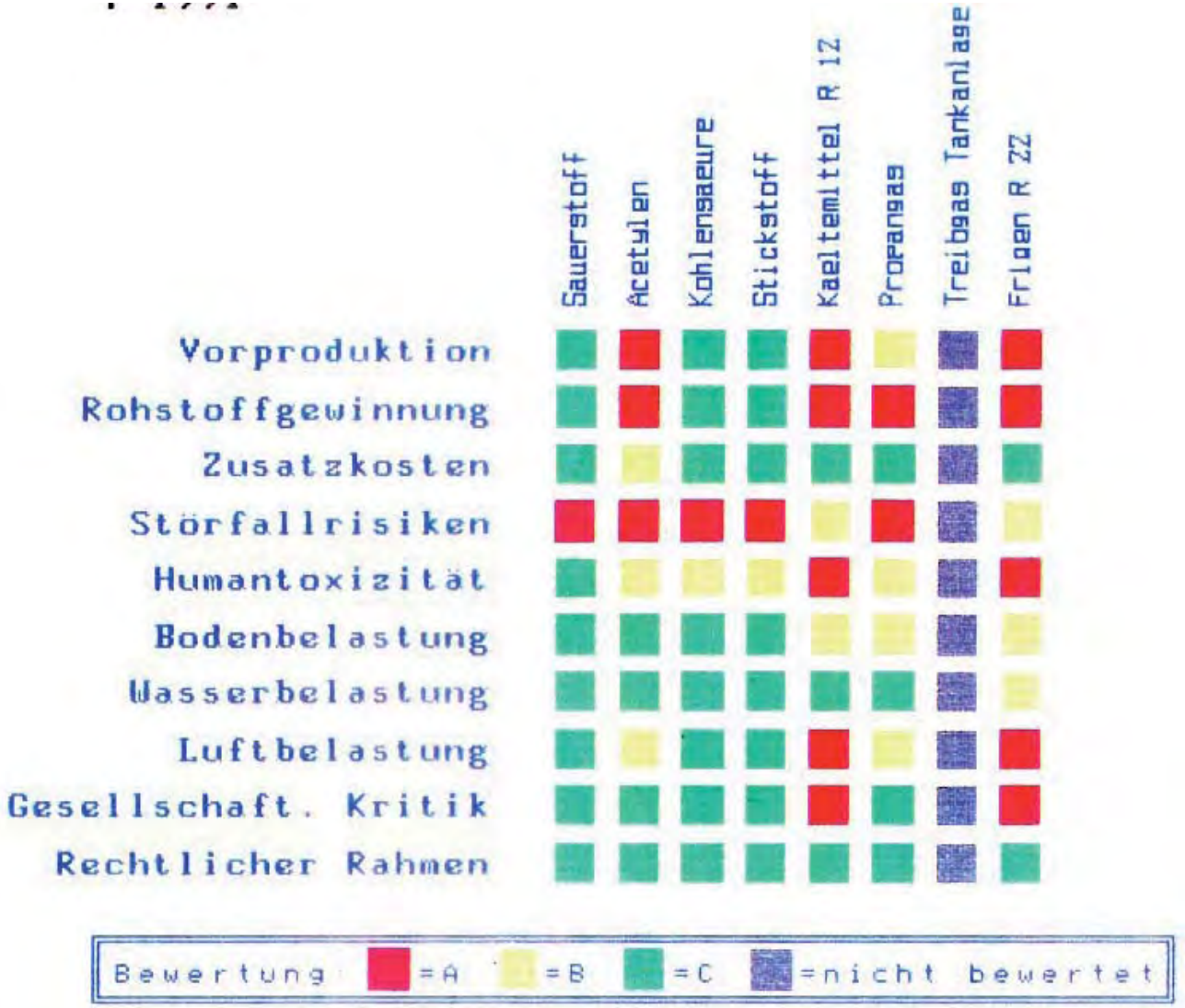

Rohstoffproduktion
Weißblechherstellung
I. Eisenerzabbau
II. Transport
III. Erzaufbearbeitung
IV. Roheisenproduktion
V. Stahlerzeugung
I. Stahlverabeitung / 1. Stranggießen
2. Warmwalzen
3. Entzundern
4. Kaltwalzen
5. Verzinnen
6. Verpacken / Transport
Fleisch
1. Aufzucht
2. Nutzung
3. Schlachtung
4. Grobzerlegung
5. Feinzerlegung
6. Tiefkühlen
7. Auftauen
Gemüse, Gewürze
1. Bodenbearbeitung
2. Pflanzung
3. Düngung
4. Pflanzenschutz
5. Ernte
6. Sortieren
7. Lagern
Auslieferung
Dosenherstellung
I. Transport / Anlieferung
II. Zwischenlagerung / Auspacken
III. Produktion / 1. Lackieren
Rumpfproduktion
2. Schneiden der Tafeln
3. Schweißen u. Pulveraufbringung
4. Pulvernahtaufschmeizung
5. Bördelmaschine
6. Sickenmaschine
7. Deckelschließmaschine
8. Verpackung / Palletierung
Boden- / Deckelprod.
2. Schneiden der Tafeln
3. Stanzen der Deckel
4. Gummieren / Trocknen
5. Verpackung
Dosenbefüllung
Auslieferung
1. Warenübernahme
2. Putzen / Zerschneiden
3. Saftaufbereitung
4. Vermengen
5. Befüllen der Dose
6. Verschließen / Reinigen
7. Sterilisieren
8. Etikettieren / Verpacken
9. Palettieren
10. Lagern
11. Vertrieb / Auslieferung
Ökologischer Produktionszyklus „Vom Erz zur Dose“
Abnehmer (Handel & Konsument)
1. Sammeln
2. Recycling
3. Deponieren

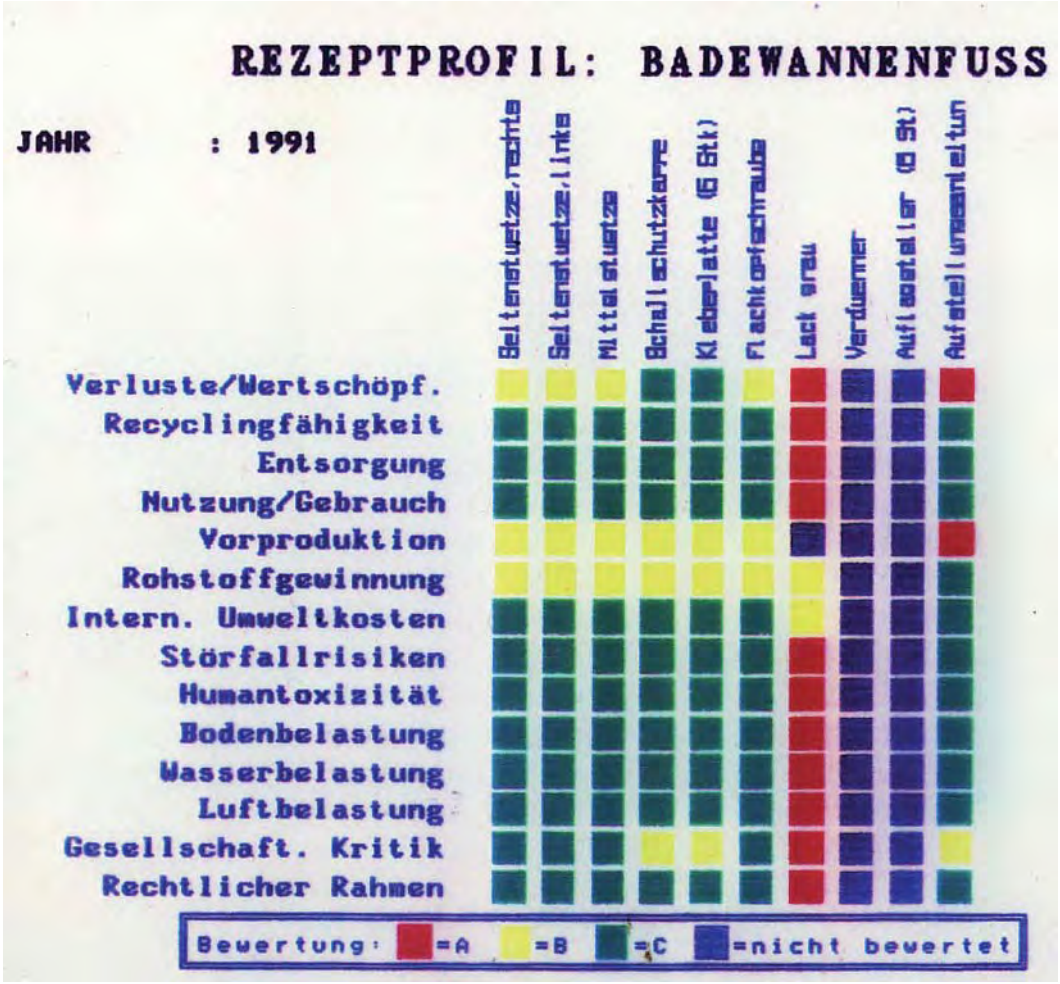
**NACHHALTIG**wirtschaften




bmvit FFG IÖW INSTITUT FÜR ÖKOLOGISCHE WIRTSCHAFTSFORSCHUNG FABRIK der Zukunft

# Examples of application of the ABC stoplight system for products, processes, material groups, ecodesign, EMS goal definition etc.


Sauerstoff
Acetylen
Kohlensaeure
Stickstoff
Kaeltemittel R 12
Propangas
Treibgas Tankanlage
Frigen R 22
Vorproduktion
Rohstoffgewinnung
Zusatzkosten
Störfallrisiken
Humantoxizität
Bodenbelastung
Wasserbelastung
Luftbelastung
Gesellschaft. Kritik
Rechtlicher Rahmen
Bewertung =A =B =C =nicht bewertet


REZEPTPROFIL: BADEWANNENFUSS
JAHR : 1991
Beltenstuetze,rechts
Seltenstuetze,links
Mittelstuetze
Schallschutzkante
Klebeplatte (6 Stk)
Flachkopfschraube
Lack grau
Verduenner
Aufloesteller (8 St)
Aufstellunsanleitun
Verluste/Wertschöpf.
Recyclingfähigkeit
Entsorgung
Nutzung/Gebrauch
Vorproduktion
Rohstoffgewinnung
Intern. Umweltkosten
Störfallrisiken
Humantoxizität
Bodenbelastung
Wasserbelastung
Luftbelastung
Gesellschaft. Kritik
Rechtlicher Rahmen
Bewertung: =A =B =C =nicht bewertet

## Liste der Umweltauswirkungen 2000

| Umweltkategorien / Werksbereiche | Energie | Abwasser | Abluft | Abfall Deponie | Abfall Verwertung | Gefährliche Abfälle | FMEA |
|---|---|---|---|---|---|---|---|
| Holzplatz | C | A | C | C | C | C | C |
| Interne Transporte | B | C | B | C | C | C | C |
| Altpapierlager | C | C | C | C | C | C | B |
| Zellstofflager | C | C | C | C | C | C | C |
| Lager Chemikalien, Füllstoffe | C | C | B | C | C | C | B |
| Materialwirtschaft | C | C | C | C | C | C | C |
| Schleiferei | A | A | B | C | C | C | B |
| De-Inking | B | A | B | B | A | C | B |
| Zellstoffaufbereitung | B | C | C | C | C | C | C |
| Entrindung | B | C | C | C | A | C | C |
| Füllstoffaufbereitung | C | C | C | C | C | C | C |
| PM 3 | A | A | B | C | B | C | B |
| PM 10 | A | A | B | C | A | C | B |
| Versand | C | C | C | C | C | C | C |
| Instandhaltung | C | C | B | C | C | C | C |
| Verwaltung | C | C | C | C | C | C | C |
| Gas- und Dampfkraftwerk | A | C | B | C | C | C | B |
| Kesselanlage | A | C | B | C | C | C | B |
| Wasserturbine | C | C | C | C | C | C | A |
| Wasserversorgung | B | C | C | C | C | C | C |
| Abwasserreinigungsanlage | B | A | B | C | A | C | B |

SCA Laakirchen
Environmental
Declaration 2000

**Legende**

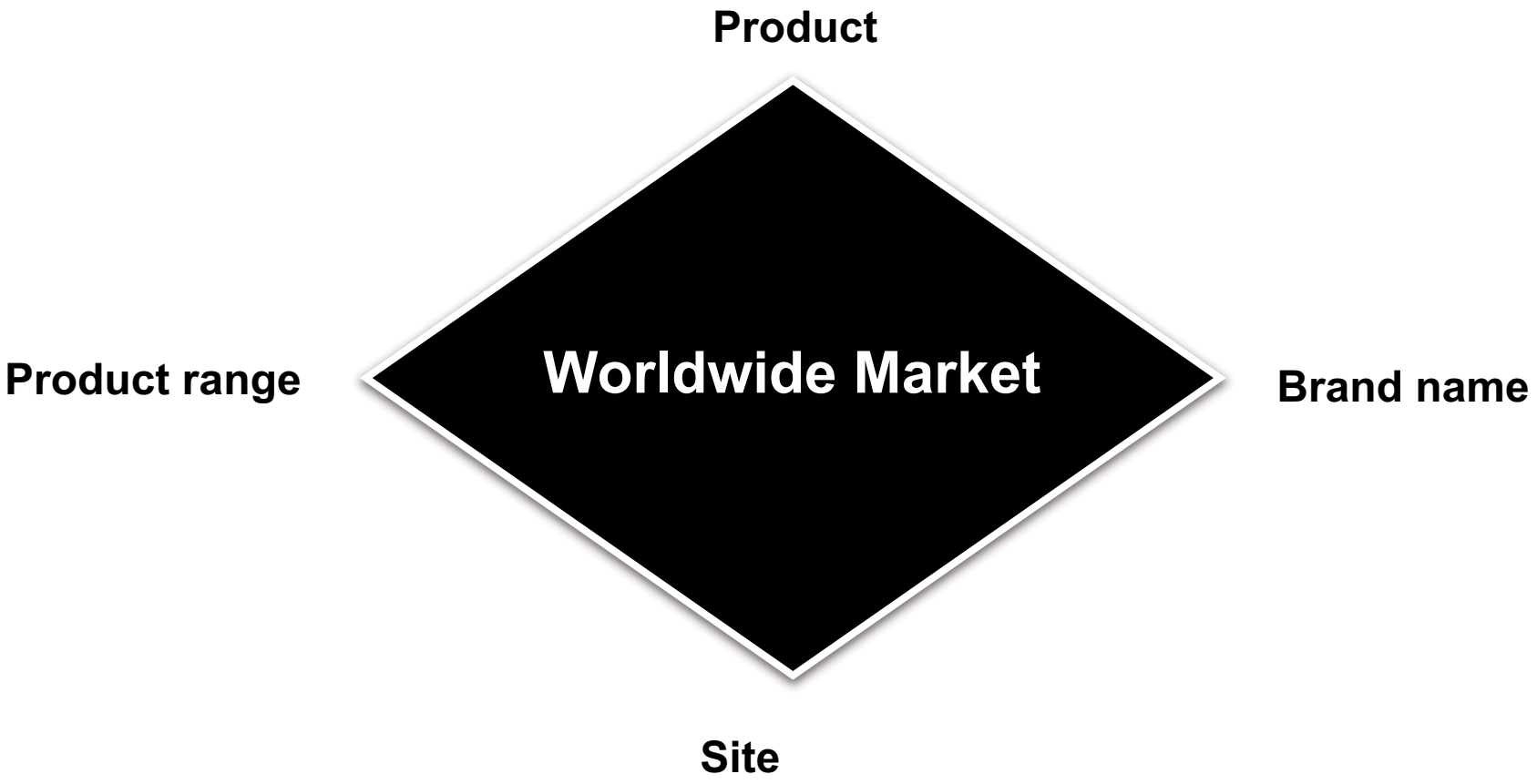
**A** wichtige Umweltauswirkung / hohe Priorität
**B** Umweltauswirkung / mittlere Priorität
**C** keine unmittelbare Umweltauswirkung / niedrige Priorität

**Risikoabschätzung:**
Unter normalen Betriebsbedingungen wird das Risiko von größeren Umweltauswirkungen als gering eingestuft. Für nicht planbare Betriebszustände sind entsprechende Notfallpläne vorgesehen.

**Erläuterung:**
Aufgrund einer möglichen Wassergefährdung mit Schmieröl ergibt sich bei der Wasserturbine in der Rubrik FMEA die Bewertung mit A.

# Which label fits best?





# Examination questions

NACHHALTIG wirtschaften

What is the main difference between a certified EMS and an Ecolabel?

What is the ABC stoplight system and what can it be used for?

What are the steps of a life cycle and of a life cycle assessment?

Which ecolables do you know and how are they classified?