

Monetization and Social LCA at BASF

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BASF Sustainability Strategy

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Monetization: Value-to-Society

Changing the perspective on business performance

Monetization of impacts

Traditional reporting

Quantified output (€, CO₂e, lost time injuries ...)



Input – Raw materials

Output – t CO₂e

Impact valuation / Value-to-Society

Valued financial & pre-financial impacts (€)



Outcome – Climate change

Impact – Costs of floods etc.

Assessing in monetary terms how business changes the health and well-being of people

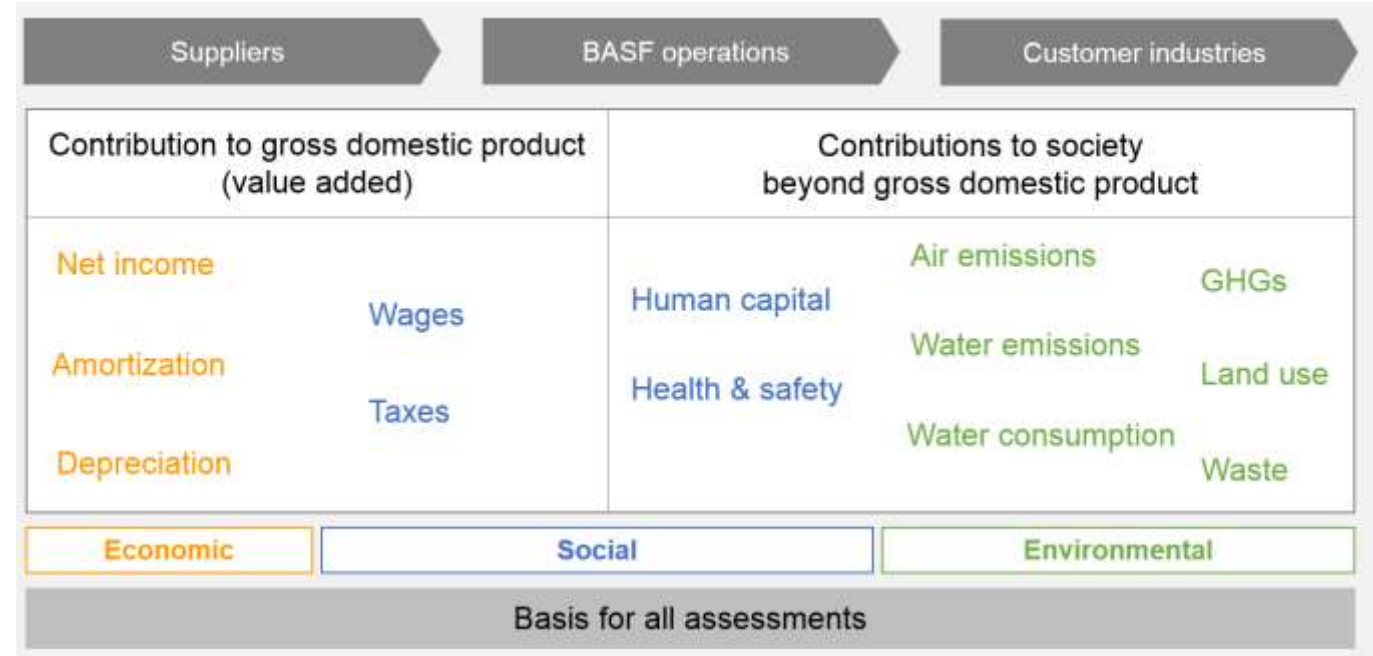
A comprehensive, pragmatic and scalable assessment of our impacts on society

Data and methods

- Operations: primary data and aggregation of impacts
- Supply chain and customer industries: industry data and input-output modelling
- Use phase and end-of-life: build upon LCA data on case-by-case basis
- Monetary valuation: application of PwC coefficients based on social benefits/costs concept
 - ▶ Aligned with Natural and Social Capital Protocols



Model provides results which are directionally correct



Usability of Value-to-Society at corporate level

Benefits and limitations



Positioning

- ▶ Communication
- ▶ Reporting
- ▶ Advocacy



Progress monitoring

- ▶ Over time
- ▶ Industry benchmark
- ▶ Relevance of impacts



Decision making

- ▶ Risk exposures
- ▶ Business opportunities



Goal setting

- ▶ Corporate targets along the value chain

Data accuracy and granularity

Maturity level of quantification and valuation methods

Monetary valuation opens new perspectives for various applications



“With Value-to-Society we have a new macro perspective on benefits and costs of our economic, environmental and social impacts along the value chain.”

Social LCA: The New SEEBALANCE®

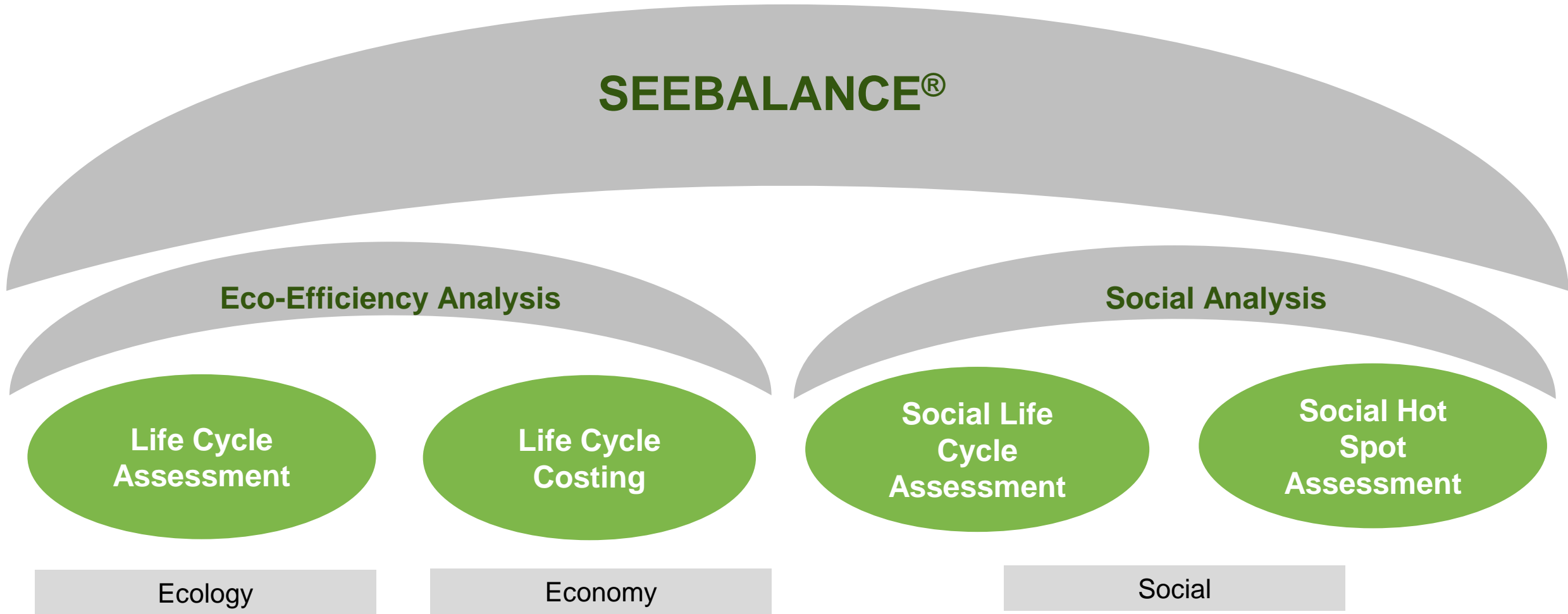
Assessment of social aspects

External developments and new requirements

- **SEEBALANCE**[®] was established in 2005 based on quantitative/statistical figures approach
- The **New SEEBALANCE**[®] considers economy, ecology and social aspects. The **Social Analysis** for social aspects takes new developments into account:
 - ▶ **Roundtable for Product Social Metrics**
3 stakeholder groups, 19 social topics
 - ▶ **WBCSD** – Social metrics for chemical products
3 stakeholder groups, 25 social topics (11 mandatory), 168 indicators
 - ▶ **UNEP/SETAC**
5 stakeholder categories, 6 impact categories, 31 subcategories



Integration of all three dimensions into sustainability assessment



Social Life Cycle Assessment

Two step approach depending on availability of data

Assessment procedure for each process step

Producing companies known?

yes



No information



a

Specific country known?

yes



No information

Country's risk score

Country production mix known?

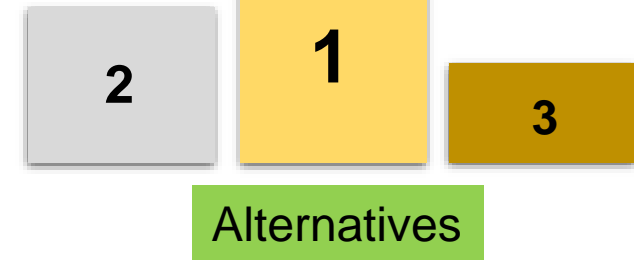
yes



Production volume weighted average risk

Use estimations

b



Social Hot Spot Assessment

Evaluation of relevant risks and links to SDGs

Desktop
research and
primary
information

Field research

- GDP per capita in the region in focus is among the lowest in the country
- The literacy rate is 7 percent below the national average
- Groundwater has excessive levels of microbial contaminants

Identification

Link to SDG



Measures
concept,
Recommen-
dations

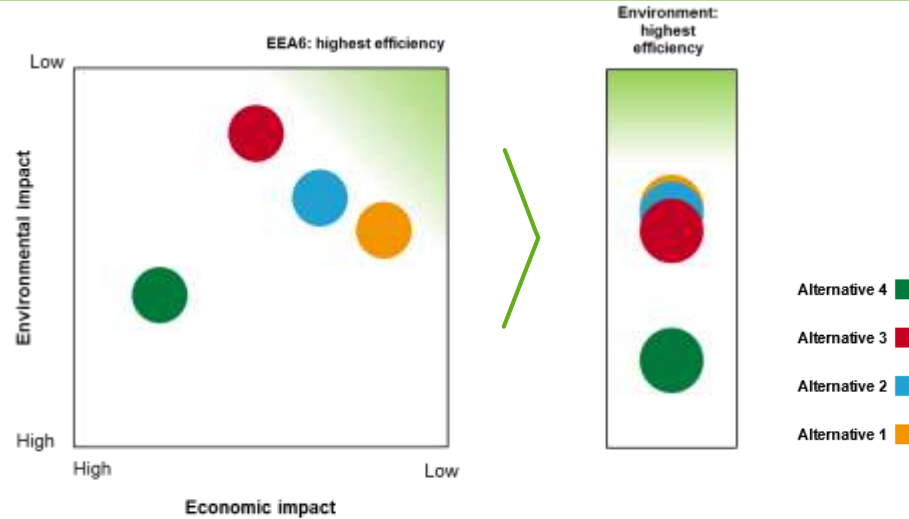
Improvement
opportunities

SEEBALANCE®

Overview of economic, ecological and social product performances

Eco-Efficiency Analysis

Product environmental and economic impacts



Social Analysis

Product social impacts

Social Life Cycle Assessment
from Assessment steps 1-4
(Ranking, 1 is best)

Alternative 1	Alternative 2	Alternative 3	Alternative 4
Rank 1	Rank 4	Rank 2	Rank 3

Social Hot Spot Assessment

- a) Low education level
- b) Income below \$1.90 per day
- c) Risk of potential child labor

Example



“SEEBALANCE® offers an overview of the economic, environmental and social aspects among assessed alternatives.”



We create chemistry

A comprehensive, pragmatic, and scalable assessment of our impacts on society

Starting point

- Elaborate idea
- Identify potential methods and partners
- Review external developments standards and frameworks

Piloting

- BASF Group
- Business unit
- Site development
- M&A/divestures
- Technologies scenario
- **Product**

Implementation

- External validation
- Annual calculations
- Disclosure of results & methods BASF Group
- **Further elaboration of project & product level**

Reference points



Method based on PwC's TIMM framework



Techniques and process aligned with Natural & Social Capital Protocol



2013

2014

2015

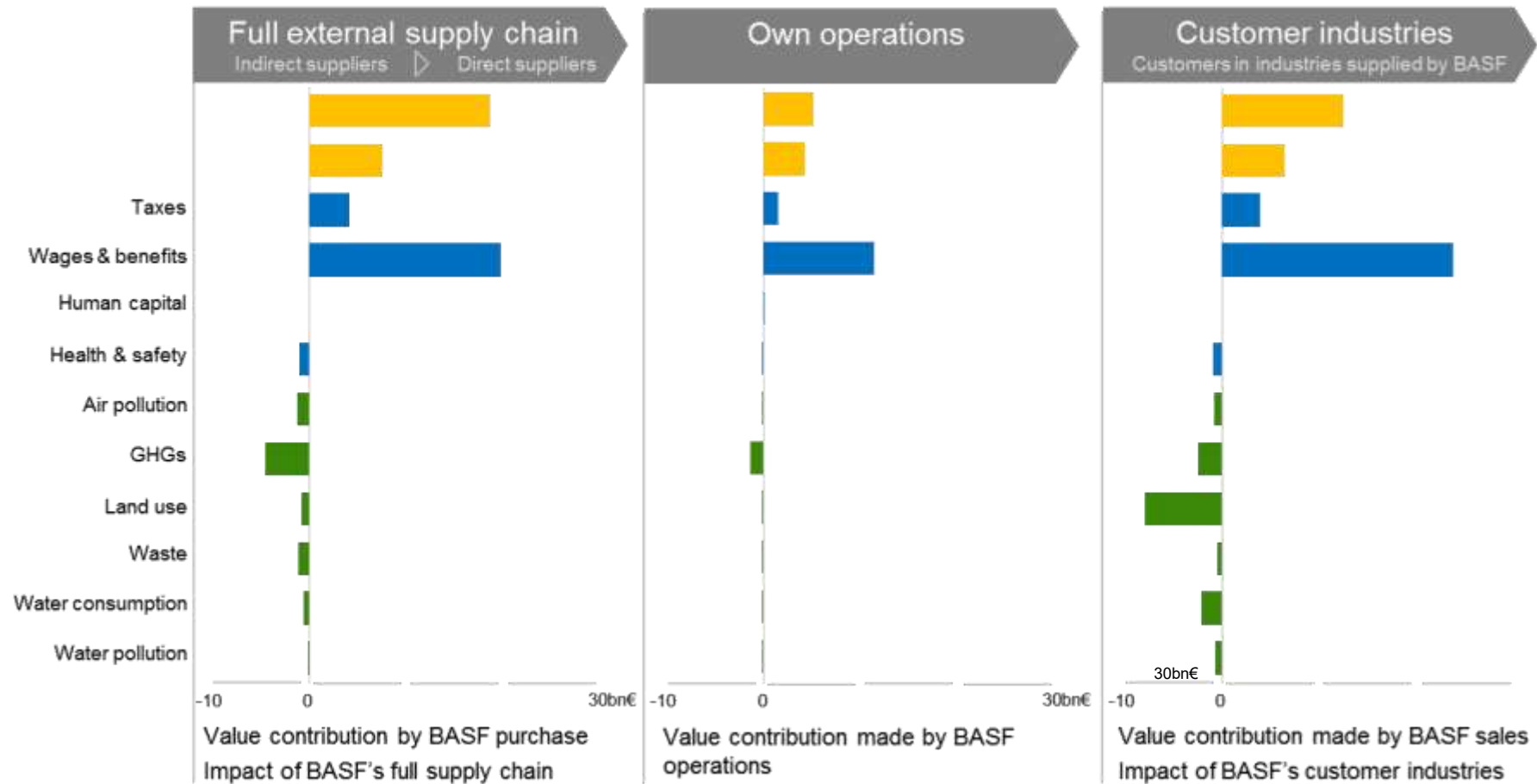
2016

2017

Model provides results which are directionally correct

BASF's Value-to-Society results 2016

How we contribute to sustainable growth



Fourth year in a row: Net positive contribution in each step of the value chain

Social Life Cycle Assessment

Identification of social impacts along the life cycle based on existing data from external data providers

Stakeholders

1 Workers

- SDG 1 (Poverty)
- SDG 3 (Good health)
- SDG 5 (Gender equality)
- SDG 8 (Good jobs, econ. growth)
- SDG 10 (Reduced inequalities)
- SDG 16 (Peace & justice)

Impact categories

- Health & safety
- Fair wages
- No child labor
- Appropriate working hours
- No forced labor
- Freedom of association
- No discrimination

Indicators: External Databases (examples)

Poor Employment Conditions (R)
Decent Wages Index (M)

2 Local communities

- SDG 3
- SDG 11 (Sust. cities & commun.)
- SDG 16

- Healthy & safe living conditions
- Security & conflict
- Land & property rights

Human Rights Abuses, Corporate Complicity (R)
Security Forces and Human Rights Index (M)

3 Consumers

- SDG 3, 11

- Healthy & safe products

(R) RepRisk® (M) Maplecroft™