

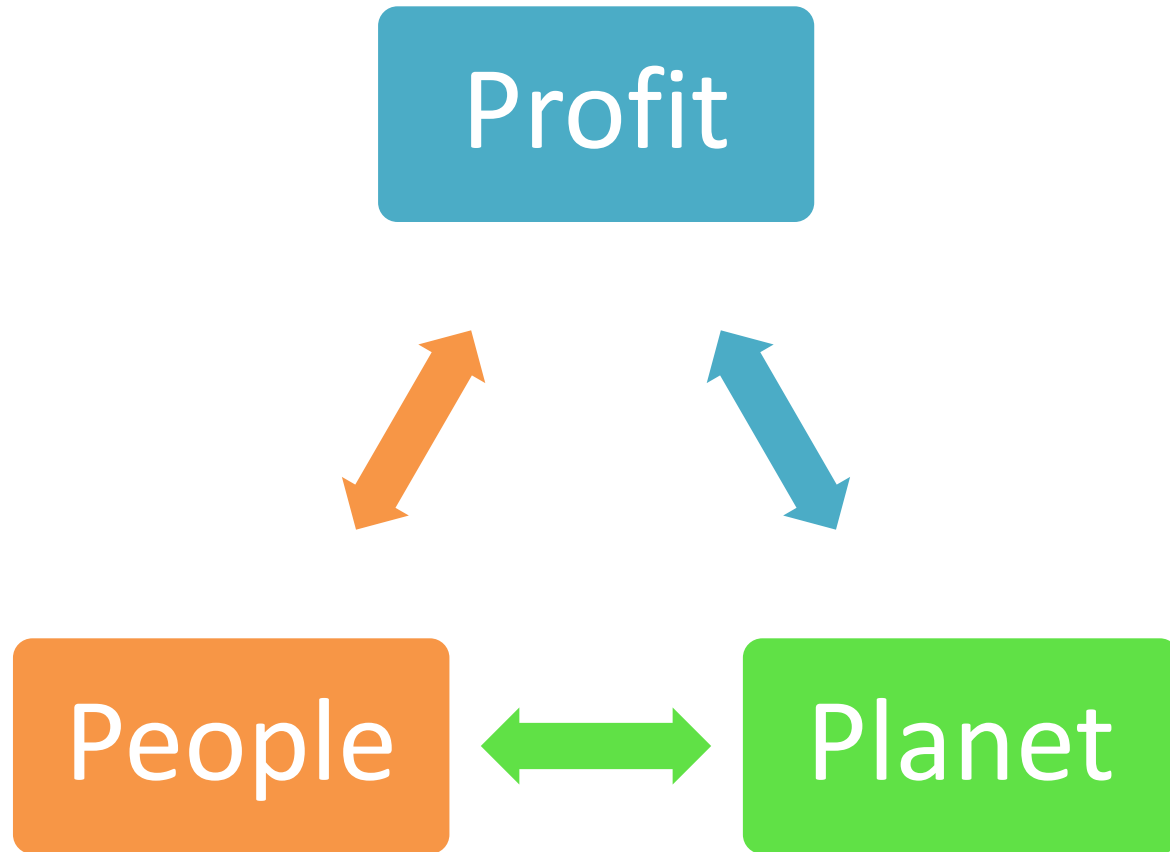
Social Life Cycle Analysis (SLCA)

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Sustainability: Triple Bottom Line



Environmental vs. Social Practices



business.nmsu.edu

Published on Saturday, October 20, 2001 in the [Independent/UK](#)
'We Blew It'
Nike Admits to Mistakes Over Child Labor
by Steve Boggan

The multi-billion dollar sportswear company Nike admitted yesterday that it "blew it", ending the practice might be difficult.
Nike attempted to present itself to its shareholders in its first "corporate runners" and employing young executives who worried about the
The mere fact that Nike has produced such a report was
Oxfam's [NikeWatch](#) and the [Clean Clothes Campaign](#)

(Reuters) - Canon Electronics Inc., athletic gear leader Nike Inc. and food and consumer goods giant Unilever Plc topped a list rating climate-friendly companies released on Tuesday.

There was a cluster at the bottom of the list of 56 companies. Six tied for last, with a score of zero on a 100-point scale -- Jones Apparel Group Inc., CBS Corp., Burger King Holdings Inc., Darden Restaurants Inc., Wendy's International Inc. and Amazon.com.

Even for those at the top, there was room for improvement on the Climate Counts scorecard, put together by a nonprofit group organized by the New England-based environmental entity Clean Air Cool Planet and Stanfield Farm, a U.S. organic yogurt maker that placed sixth on the list with

Environmental vs. Social Practices



"Ongkat" system for illegal logging on wet areas in Riau, Photo: Roman Pirard (CIFOR)



Picture: Aurajava furniture



Picture: Jepara teak furniture

What is SLCA?

Impact assessment technique that aims to assess the social and socio-economic aspects of products and their potential positive and negative impacts along their life cycle

(United Nations Environmental Program and Society of Environmental Toxicology and Chemistry, 2009)

Overall Goal: Human and Societal Well Being

Why Social LCA?

- Contribute to improvement of social performances of products at different stages in the life cycle
- Information towards decision makers from business and from governmental organizations and NGOs for choosing between products
- Choice of relevant performance indicators
- Marketing



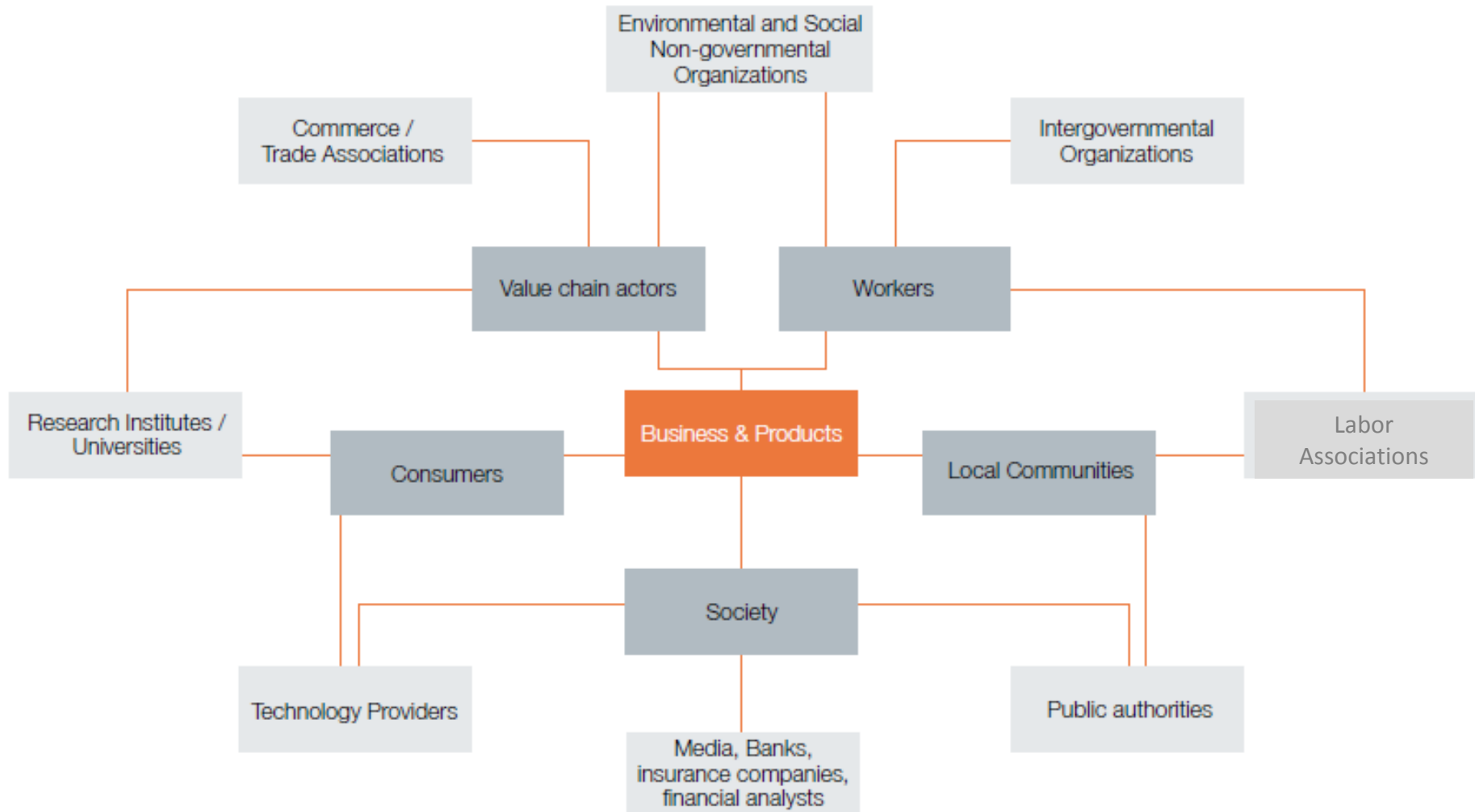
Goal and Steps in SLCA

- “...the ultimate goal of S-LCA technique is to promote improvement of social conditions throughout the life cycle of a product, human wellbeing is a central concept” (UNEP, 2009, p.22).
- Steps:
 - Goal definition
 - Scope definition
 - Inventory assessment
 - Impact analysis

I. Scope and Boundary

- Functional unit and product utility: Starting point to determine the product system
- Geographic location of unit process is often important, if not necessary
- Stakeholder involvement
- Baseline (e.g., if the production chain did not exist)

Who are the Stakeholders?



General Stakeholder Groups Considered

- Worker
- Local community
- Society
- Consumer
- Members along the value chain



II. Life Cycle Inventory (LCI)

- Data is collected from stakeholders and from the company and its partners
- Data is both qualitative and quantitative
 - The subjective data is sometimes in S-LCA the most appropriate information to use.
- The data sources will differ (coming from stakeholders)
- The data collection steps and methods vary (e.g., social hot spots identification)

III. LCIA: What are the Impact Categories?

- Social Impact- Consequence of positive and negative pressure on social end points (well being of stakeholders)
- Impact subcategories:
 - Human rights
 - Access to resources
 - Employment and community engagement
 - Working conditions
 - Health and safety
 - Cultural heritage (e.g., indigenous rights)
 - Socio-economic repercussions (e.g., political conflict, disease, poverty, etc.)



IV. Interpretation of Impacts

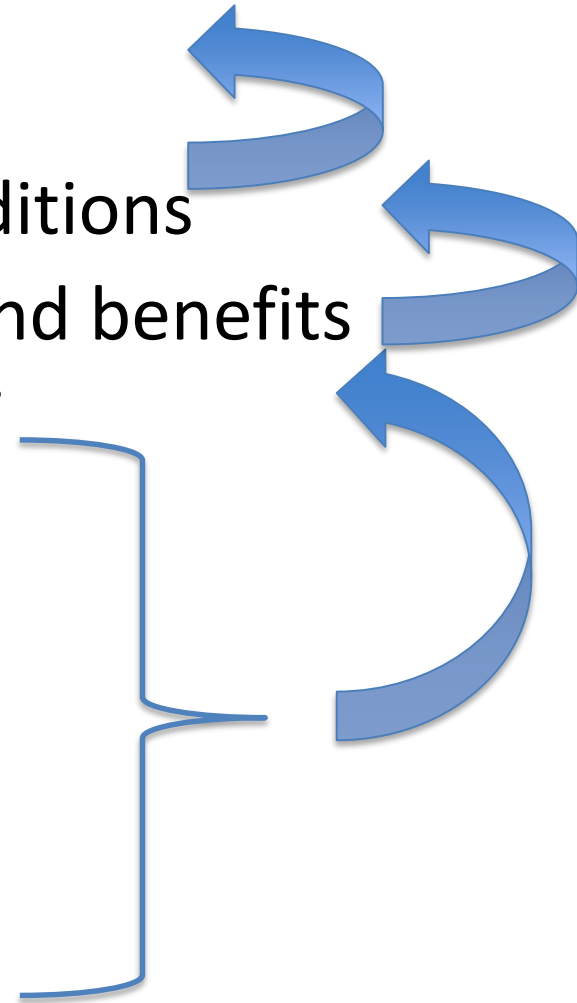
- The context accounts for impact
 - The local stakeholders define the impact
 - Impact must take into account the context:
 - To be used by company?
 - To be used by policy-makers?

Stakeholder categories	Impact categories	Subcategories	Inv. indicators	Inventory data	
Workers	Human rights				  
Local community	Working conditions				   
Society	Health and safety				    
Consumers	Cultural heritage				  
Value chain actors	Governance				   
	Socio-economic repercussions				    

Example

Aggregation

- Stakeholder category: Worker
- Impact category: Working conditions
- Subcategory: Social security and benefits
- Inventory indicators: Percentage of employees covered by:
 - Health insurance
 - Retirement insurance
 - Paid maternity leave
 - Legal contract



Conclusion: Different Methodologies and Uses

- Three different uses of SLCA methods:
 - Management SLCA: Identifying social hot spots
 - Consequential SLCA: Choosing between decision alternatives
 - Educative SLCA: Disseminate information

Limitations of S-LCA

- There is no common unit for assessment (e.g., CO2 equivalent)
- There are various questions on assessment methods (no standard)
- Lack of availability of data (mostly qualitative)
- Introduces bias (many times based on analysts views)
- Expensive and time consuming

Example 1. ELCA and SLCA of cut roses from Ecuador

- Franze and Citroth (GreenDelta, a sustainability consulting company) , LCA conference, Boston (September 2009)
- Ecuadorian rose plantations:
 - 400 rose farms with 60,000 employees
 - Exports roses annually for 300 million USD
 - Advantages: Climate, low wage level

<http://www.elstonhill.com/Ecuador3.html>



Social Structure at Rose Plantations

- Predominant female workers
- Child labor widespread
- Many working hours: 72-84 per week
- Wages: Low (average ~\$84 US per month)
- Equality: Children and women earn less
- Poisoning by pesticides: Employees suffer from acute and chronic poisoning (asthma, cancer, genotype is changed,)

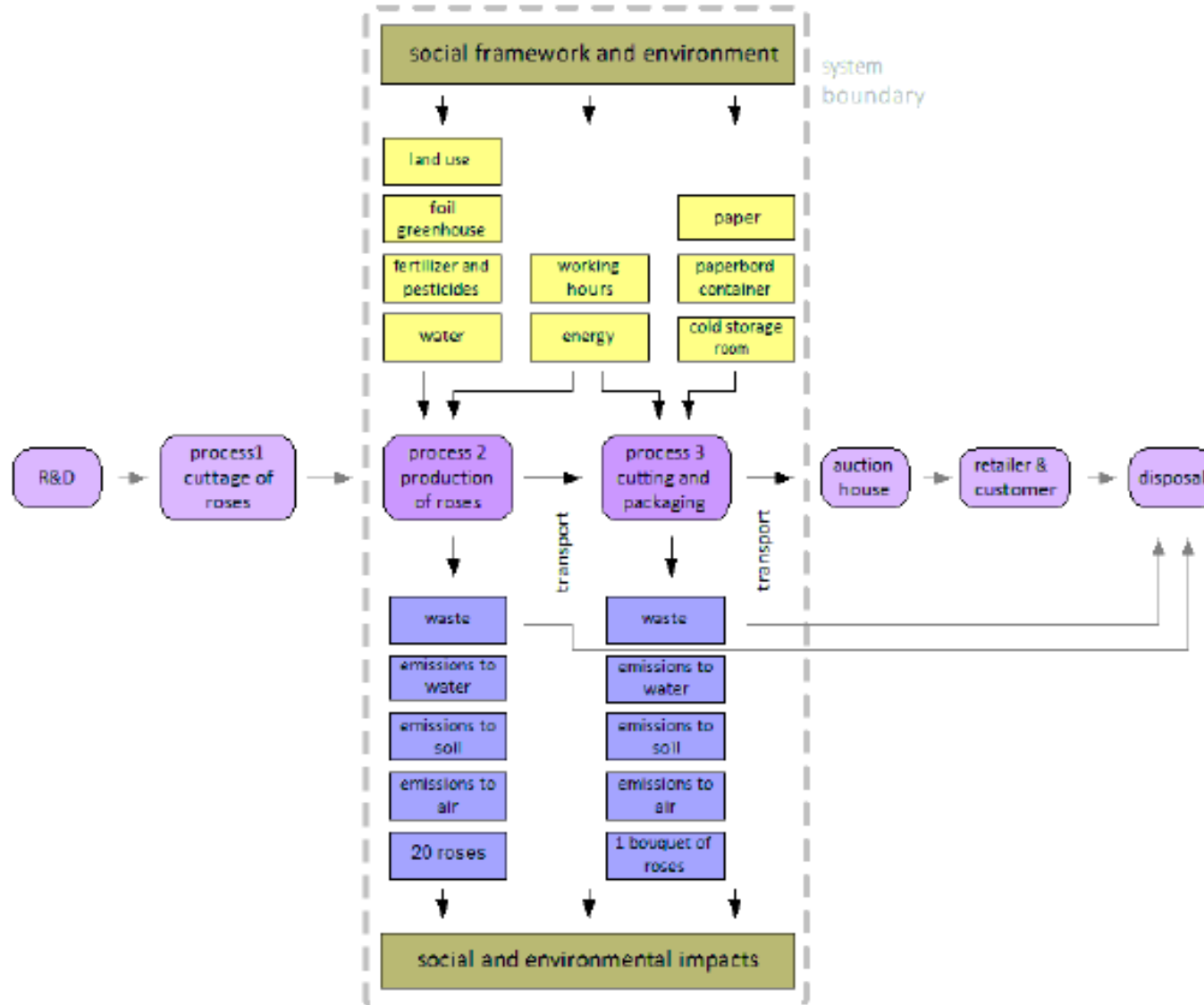


Source: International Labour Rights Fund



Source: Flower Label Program

Scope: Product System in Ecuador



Functional Unit

- Packaged rose bouquet with 20 stems
- The roses are produced in a fictitious company in Ecuador
- The bouquet is transported to a flower auction in Aalsmeer, Netherlands



Approach: SLCA, color coded impact assessment, assessment done based on international codes of conduct (e.g., ILO convention)

Stakeholder



Stakeholder	Subcategories/Indicators
Workers: Employees of the rose plantations in Ecuador	Freedoms of association, discrimination, child labor, fair salary, working hours, forced labor, health and safety, social benefits
Supply Chain Actors: Fictitious companies in Ecuador	Fair competition, promoting CSR
Local Communities: Region Pichincha	Respect of indigenous rights, net migration rate, safe and healthy living conditions, local employment
Society: Ecuadorian society	Contribution to economic development, corruption, technology development, prevention of armed conflicts
Consumer: Rose buyer in flower shops	Health, safety and transparency

Impact Categories

- Health and safety
- Socio-economic repercussions
- Human rights
- Indigenous rights
(incl. cultural heritage)
- Development of the country



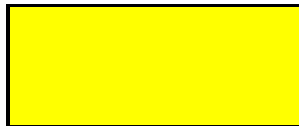
Rating Scale



positive effect



indifferent effect



more or less negative effect



negative effect

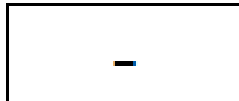


very negative effect

Relation to Impact Categories



indicator influences impact
category



indicator does not influence impact
category



indicator is not present

Impact Assessment: Social Assessment

Stakeholder	Indicator	At present?	Health and safety	Soc.- econ. Repercussions	Human rights	Indigenous rights	Development of the country	Assessment
Workers	Child labour	yes	✓	✓	✓	✓	✓	Very negative effect
Workers	Forced labour	no						Indifferent effect
Society	Contribution to econ. development	Yes, but contrasting	✓	✓	✓	✓	✓	Indifferent effect

Impact Assessment: Social Assessment

			health and safety	socio-economic repercussions	human rights	indigenous rights	development of the country	assessment
social conditions		status						
workers	freedom of association	no	✓	✓	✓	✓	✓	
	discrimination	yes	✓	✓	✓	-	-	
	child labour	yes	✓	✓	✓	✓	✓	
	fair salary	no	✓	✓	✓	✓	✓	
	working hours	72-84h/week	✓	✓	✓	✓	✓	
	forced labour	no						
	health and safety	is at risks	✓	✓	✓	-	✓	
	social benefits	no	✓	✓	✓	-	✓	
supply chain actors	fair competition	yes	-	-	-	-	✓	
	promoting social responsibility	no	✓	✓	-	-	✓	
local community	indigenous rights	are harmed	-	✓	-	✓	✓	
	net migration rate	is negative	-	✓	-	✓	✓	
	safe and healthy living conditions	are degraded	✓	✓	✓	✓	✓	
	local employment	is promoted	✓	✓	✓	✓	✓	
society	contribution to economic development	is given, but unfair allocation: contrasting impacts	✓	✓	✓	✓	✓	
	corruption	is promoted by unfair conditions	✓	✓	✓	-	✓	
	technology development	is not promoted	-	-	-	-	-	
	prevention of armed conflicts	is not promoted	-	-	-	-	-	

Example2. SLCA of Cheese Production in NZ (just indicators)

- Ultimate goal of study: Develop methodology to answer question: Do NZ pasture-based products (dairy products, lamb, wool, etc.) have a comparative advantage in terms of social performance compared to their locally produced equivalent in their furthest markets (UK, USA)?



Scope: SLCA of Cheese Production in NZ

- Production process and company specific activities from farmgate (i.e., arriving on farm) to the consumer
 - All producers and milk production activities (raw material for cheese) by one company



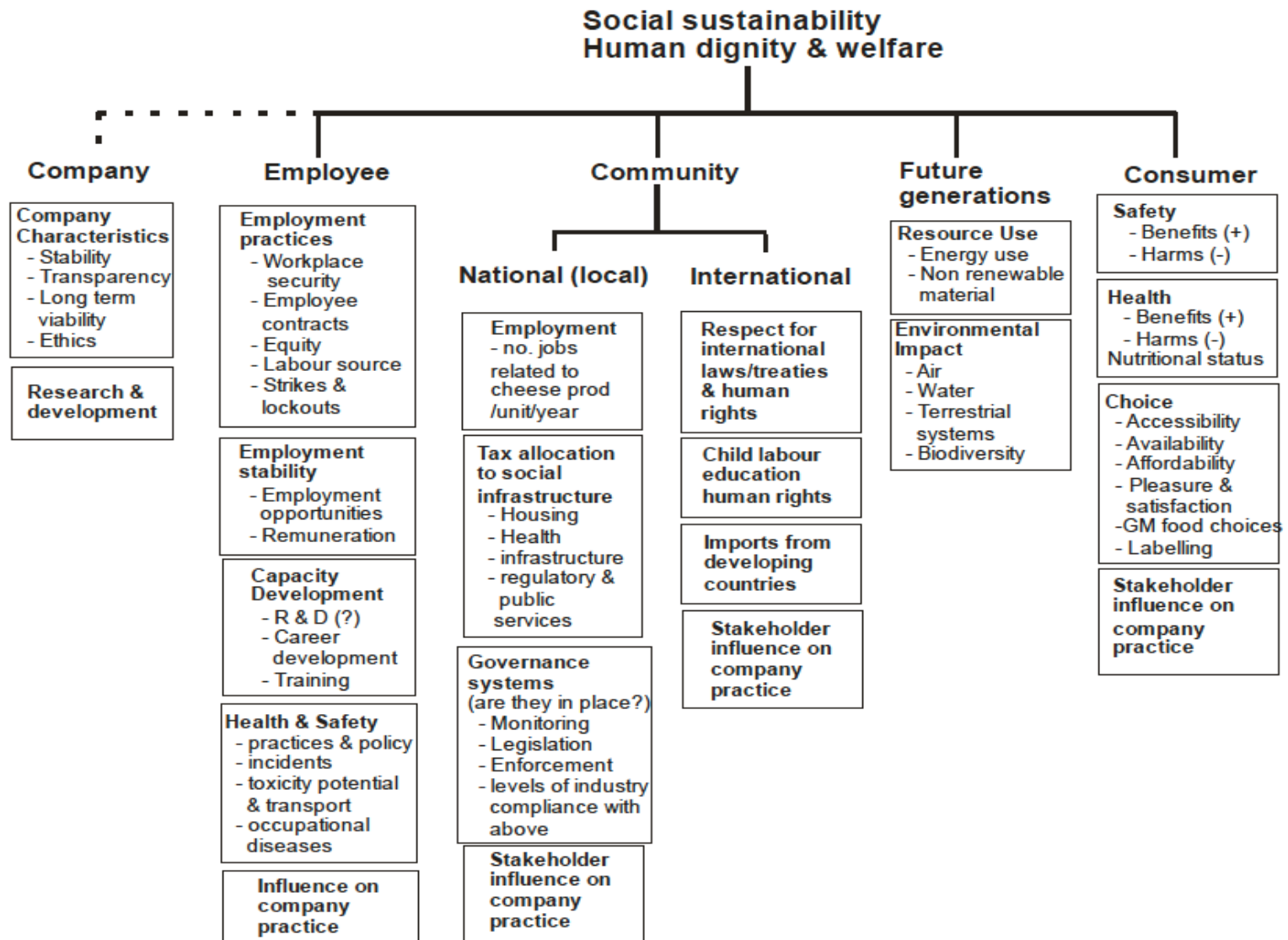
Functional Unit: SLCA of Cheese Production in NZ

- One kg of cheese

(The functional unit may require adaption to make sense in the use phase and in order to make comparisons between different products at that stage)



Allocation of Impacts (Social Indicators): SLCA of Cheese Production in NZ



Social Indicator for Employee Stakeholder: SLCA of Cheese Production in NZ

- Employment practices
 - Work place security
 - Employee contracts
 - Equity issues (fairness of treatment)
 - Labor source (paid vs. forced labor)
 - Strikes and lockouts (labor disputes> loss of days of work)
- Employment stability
 - Employment opportunities (career progression)
 - Remuneration

Social Indicator for Employee Stakeholder: SLCA of Cheese Production in NZ

- Capacity development
 - R&D (future products affect jobs)
 - Career development
 - Training
- Health and safety
 - Practices and policy
 - Accidents and incidents
 - Toxicity potential and transport
 - Occupational diseases
- Influence on company practices
 - Employee influence on company practices

Social Indicator for Consumer Stakeholder: SLCA of Cheese Production in NZ

CONSUMER	
Indicator	Description/discussion
Safety	
Benefits & harms	What are the potential safety issues with the product?
Health	
Benefits & harms	Is the product beneficial or harmful from a health perspective?
Choice	
Accessibility	Is the product easy to obtain?
Affordability	Is the product suitably priced?
Palatability	Does the product taste OK?
Pleasure & satisfaction	Does the consumer derive pleasure/satisfaction from the product?
GM food choices	Do they have alternatives to GM products or are their choices constrained?
Labelling	Is the product suitably labelled with regards to its component parts or ingredients?
Traceability	Can the product and processes be traced back from consumer to cradle?
Stakeholder influence on company practices	
Consumer influence	Do consumers have the ability to influence how the product is produced, distributed, used/disposed of (i.e., over the product's life cycle)?

Social Indicator for Company Stakeholder:

SLCA of Cheese Production in NZ

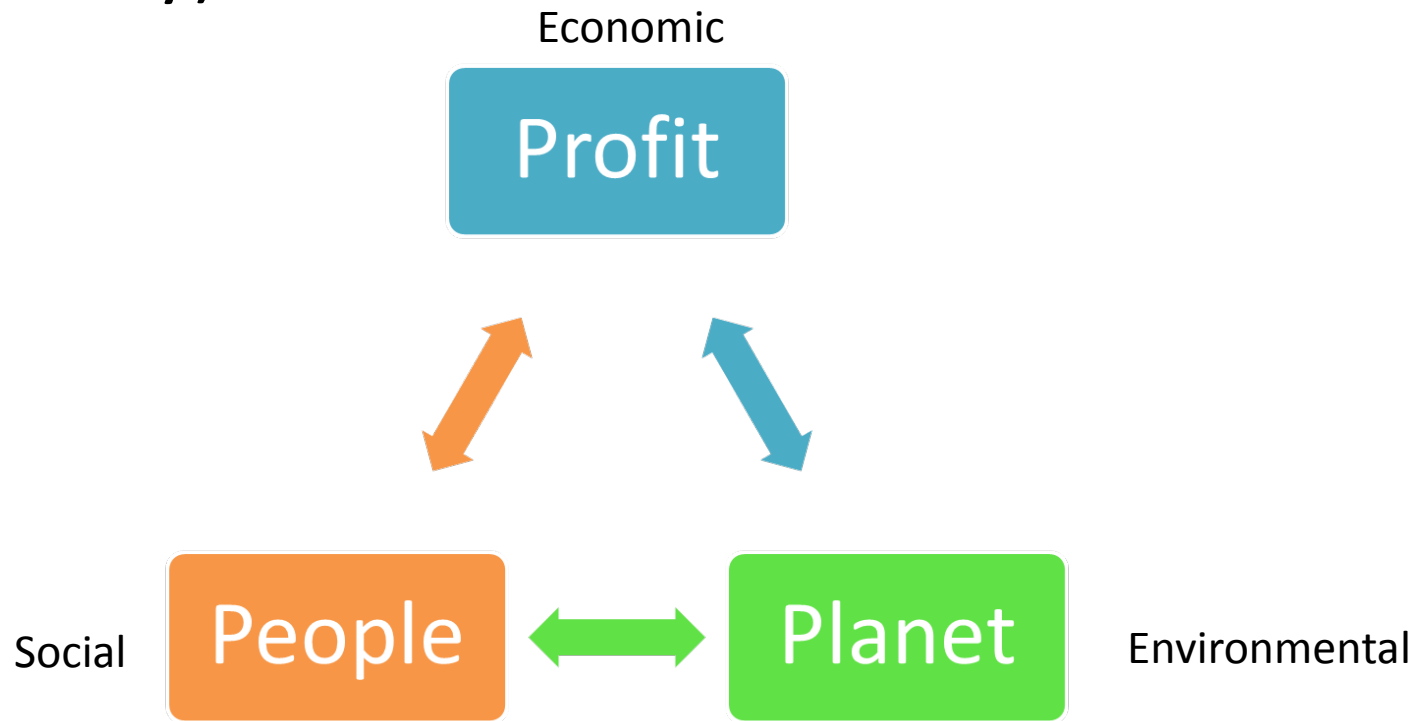
COMPANY	
Indicator	Description/discussion
Company Characteristics	
Stability	How stable is the company in terms of size and operations?
Transparency	Compliance with international accounting practices and regulatory requirements. Transparency of processes.
Long term viability	A company needs to make money to ensure its long term survival. How healthy is the company? The goal of a company is to make money for its shareholders.
Ethics	Does the company operate in a way which meets the ethical expectations of the national community? Of the international community?
Research and development	
Engagement in R&D	Steps taken to ensure the company has new products or services to sell in the future. The long term viability of a company is dependent on the R&D taking place. Labuschagne (2005) places this within the employee stakeholder category. It is about the amount of money the company puts into developing new products new processes etc. An investment in innovation, so to speak.

SLCA Impact Assessment for each stakeholder and impact category

Employee / Employment Practices/ Indicator	International requirements		Local requirements	
	Critical value (CV)	Meets CV (yes/no)	Critical value (CV)	Meets CV (yes/no)
Workplace security				
Employment contracts				
Equity issues				
Labour source				
Strikes and lockouts				

Integrated Life Cycle Approach

- Three pillars of Sustainability (Socio-economic efficiency)



SLCA results about Bioenergy from Landowners in NC: Bioenergy

Category	Indicator	Outcome
Social well being	Opinion on Environmental well being	No Change (88%)
	Income from land	Agree/Strongly Agree (56%)
	Increase in acreage	No (99%)
Energy security	Belief in bioenergy contribution	Mean Response (3.2)
External trade	Belief in bioenergy impact	Mean Response (3.6)
Profitability	Long term supply (contract)	No (96%)
Resource conservation	Desire to harvest forest land sustainably	BMP's Are Important (93%)
	Utilizing logging slash	No Impacts (36%)
	Change in forest productivity	No Change (31%)
Social acceptability	Public opinion	Mean Response (3.7)
	Community benefit	Mean Response (3.7)
	Positive opinion about biomass production	Mean Response (3.7)
	Supply willingness	Interest in Future Harvest (40%)
	Sharing support with community	Mean Response (2.9)
Emotional investment	Reason for owning land	Family Legacy (4.1)
	Level of management	Management Plan (50%)
	Land transaction	Inherited (49%)
Recreational impacts	Documented wildlife disturbances	No change (52%)
	(Recreational) holding capacity	Interested in Increase (42.4%)
Peer influence/outside information	Information seeking behavior	No (93%)

Questions?

- http://www.unep.fr/shared/publications/pdf/DTIx1164xPA-guidelines_sLCA.pdf