

A framework for visual representation of sustainable value creation process in food industry

From Science to Business

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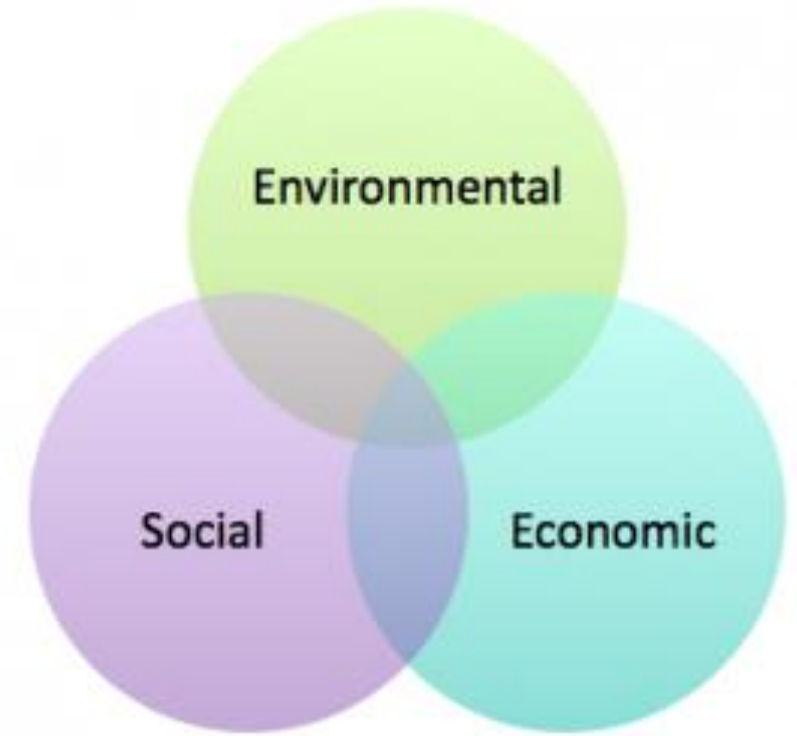
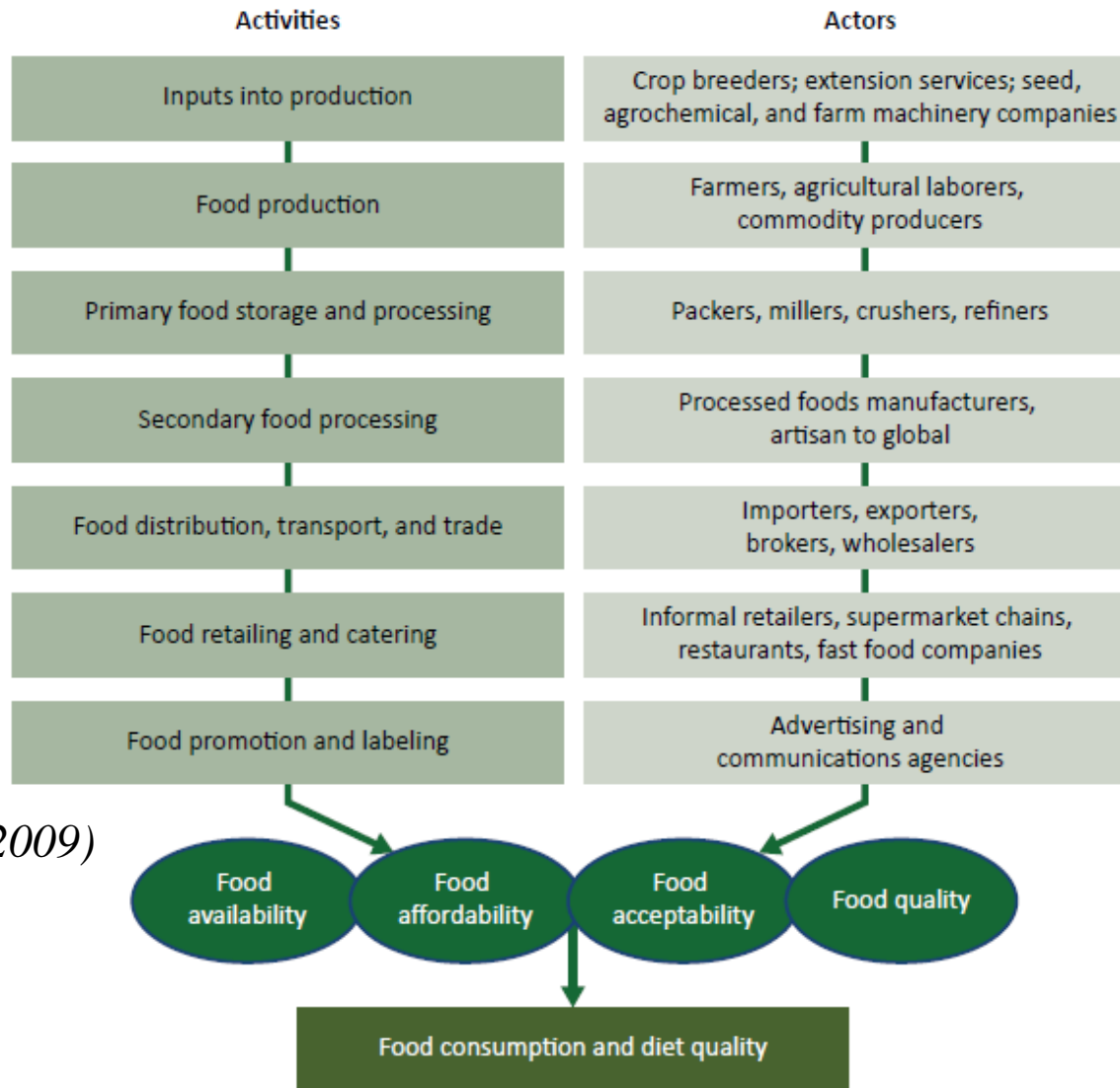
CentraleSupélec

Elena Monastyrnaya

Gwenola Bertoluci

Bernard Yannou

Sustainable food supply chains



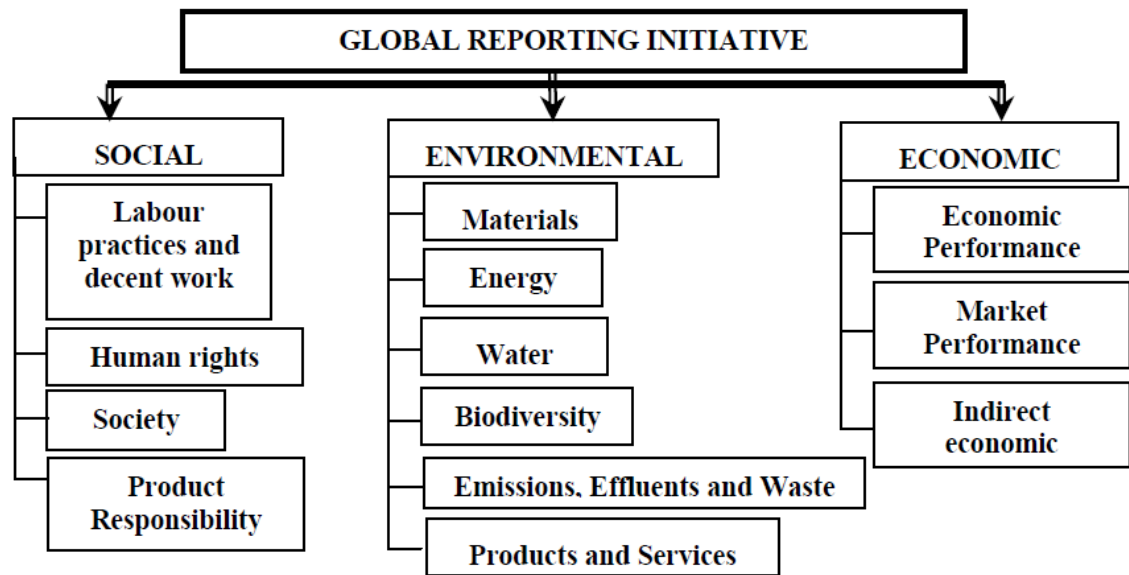
Sustainable business is « one that contributes to sustainable development by delivering simultaneously **economic**, **social** and **environmental** benefits » (Hart and Milstein 2003)

Issues for sustainability in food supply chains

Issues	Consequences	Studies
Complex multinational context, Long uncontrollable supply chains	Information asymmetry, Food contamination	Fritz and Shiefer 2009, Heikkurinen et al. 2012
Increased competition	Danger for local farmers and producers	Eaton and Shepherd 2001, Sari Forsman-Hugg et al. 2007, Hawkes and Ruel 2011
Increased concentration in processing and purchasing	Power imbalances	Stevenson and Pirog 2008, CIAA 2010, Hartmann 2011
Weather vagaries, climatic changes	Increased risks for farmers	Tilman et al. 2002, KPMG 2013
Complexity of sustainability concept	Conflicting interests Misuses of resources or PR tool for managers	Hart and Milstein 2003, Sari Forsman-Hugg et al. 2007, Detre and Gunderson 2011, Bocken et al. 2013

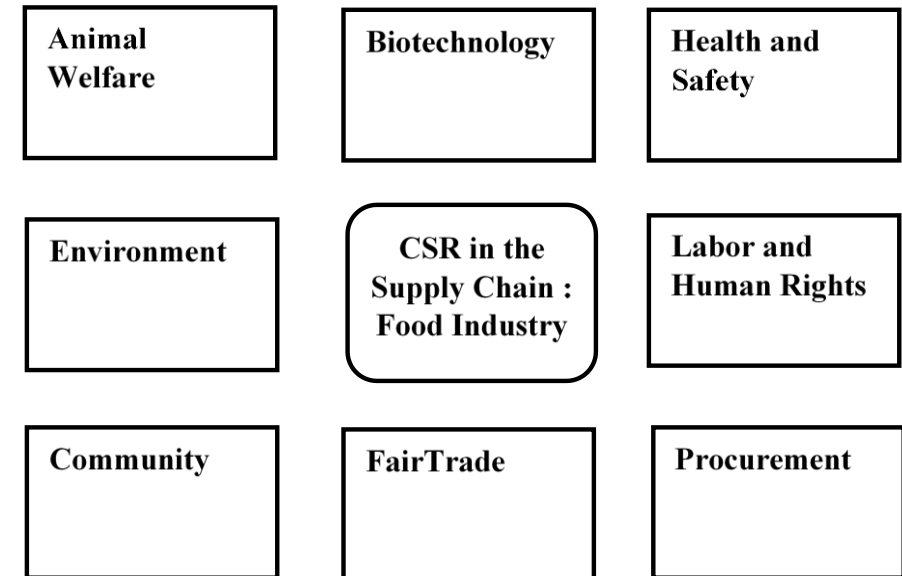
Sustainable indicators

Global Reporting Initiative (2006)



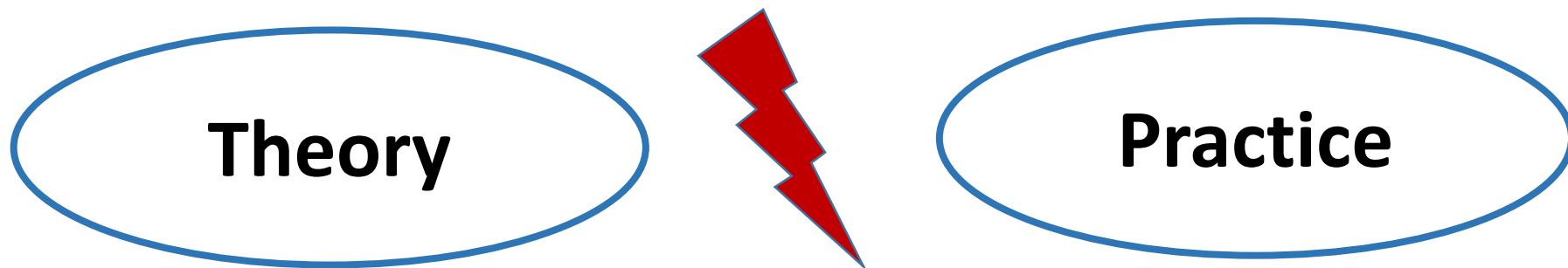
(Developed from: GRI Report 2006, p. 25-35)

Dimensions of corporate social responsibility in food industry *(Maloni and Brown, 2008)*



Problem

- **Managers** disagree about specific meaning of business sustainability (*Hart and Milstein 2003*)
- Focus on **environmental** and **economic** dimensions (*Katajajuuri et al. 2007, Seuring 2013, Bocken et al. 2014*)
- **Public relation** tool (*Rana et al. 2009, Heikkurinen et al. 2012*)



Bocken et al. 2014, Craig and Rogers 2007

Methodology

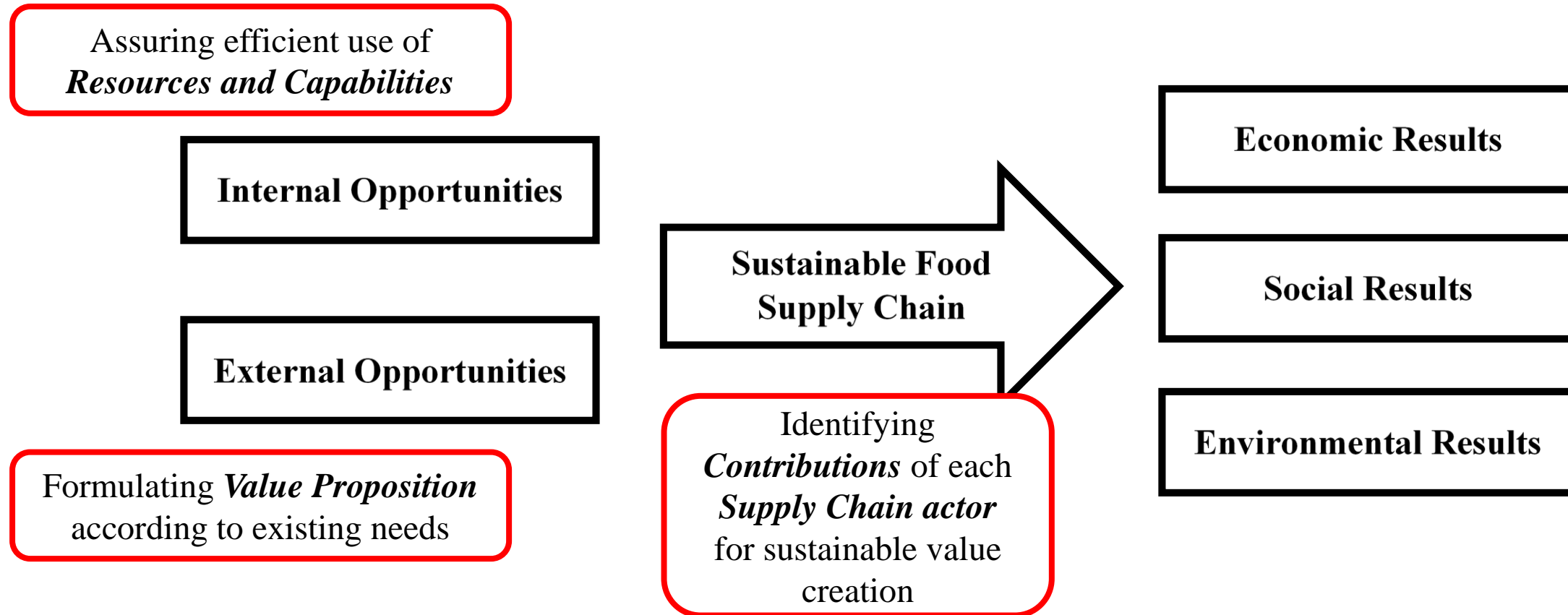
Objective: to create a synthetic framework that **embeds all three dimensions of sustainability** and displays **supply chain management practices** and **sustainable values created** within the food supply chain.

- Deductive approach
- Database keyword search
 - Science Direct
 - Springer
 - Web of Science
 - Google Scholar
 - FAO, KPMG, APEC...

Three case studies

- Bleu Blanc Cœur (France)
- Terrena –Système U (France)
- Pekan Baru Project (Singapore)

Conceptual representation of value creation process in food supply chains



Concepts and tools for business sustainability

Authors	Name of the Model/Concept	
Porter and Kramer (2011)	Shared Value Concept	<i>Conceptual tools</i>
Craig and Rogers (2007)	Framework of Sustainable Supply Chain Management	
Hart and Milstein (2003)	Sustainable Value Framework	
Laszlo (2008)	Sustainable Value Framework	
Lassale de Salins (2014)	Demand Supply Chain Approach	
Osterwalder et al. (2010)	Business Model Canvas	<i>Business modelling tools</i>
Kaplan and Norton (1996)	Balanced Scorecard	
Bocken et al.	Value Mapping Tool	
Quantitative approaches (Seuring, 2013)	Equilibrium models	<i>Quantitative approaches</i>
	Life cycle assessment	
	Multicriteria decision making	
	Analytical hierarchy process	

Model creation

Strategic orientation	Supply chain management Triple bottom line
Continuity	Long-term relationship Partner development Partner selection
Collaboration	Joint development Technical integration Logistical integration Enhanced communication
Risk Management	Individual monitoring Pressure group management Standards and certification
Pro-activity	Learning Stakeholder management Innovation Life cycle assessment

(Beske et al. 2014)

Internal Opportunities

External Opportunities

Sustainable Supply Chain Actors

Economic Results

Social Results

Environmental Results

Animal Welfare

Biotechnology

Health and Safety

Environment

CSR in the Supply Chain : Food Industry

Labor and Human Rights

Community

FairTrade

Procurement

		Supply chain			
		Primary production	Manufacturing	Retail	Consumer
Corporate responsibility (CR)	Environment	Measuring responsibility in terms of inputs, process, outputs and impacts			Demand for responsibility information
	Product safety				
	Nutrition				
	Occupational welfare				
	Animal welfare				
	Local well-being				
	Economy	Other stakeholders			

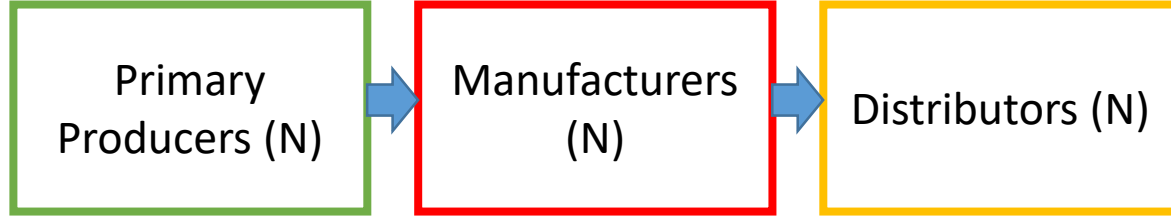
(Maloni and Brown 2008)

(Heikkurinen et al. 2012)

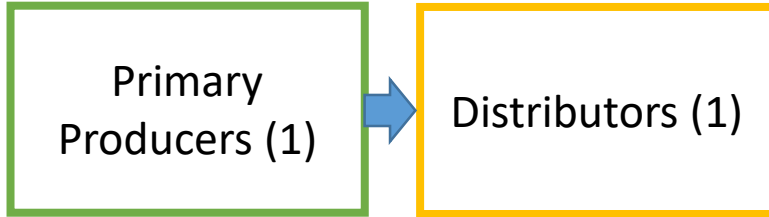
Food supply chain sustainability framework

Internal opportunities	<i>Type of contract</i>	<i>Strategic orientation</i>		Food Supply Chain Process	Practices used for successful sustainable strategy “accomplishment”			Results
		<i>Continuity</i>						
		<i>Collaboration</i>						
		<i>Risk management</i>						
		<i>Pro-activity</i>						
External opportunities	<i>Need for sustainable value creation</i>	<i>Value proposition</i>	<i>Sustainability dimensions</i>	<i>Primary production</i>	<i>Manufacturing</i>	<i>Distribution</i>	What and where sustainable value is added while creating a product or service	
	Market segment	Dedication to Triple Bottom Line	<i>Community</i>					
			<i>Environment</i>					
			<i>Animal Welfare</i>					
			<i>Biotechnology</i>					
			<i>Health and Safety</i>					
			<i>Labor and Human Rights</i>					
			<i>Procurement</i>					

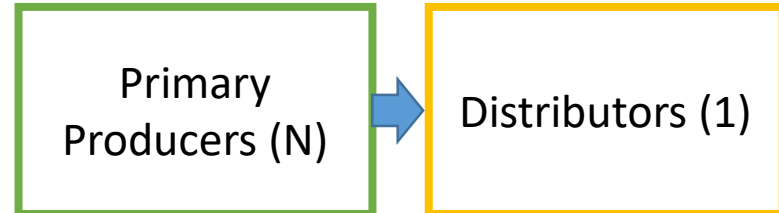
Cases of sustainable food supply chains



Milk and Meat products with improved lipid profile and less environmental damage



Meat products with improved lipid profile and less environmental damage



Reliable source of fresh vegetables, new working places, reduced environmental impact

Bleu Blanc Coeur Association

Internal opportunities	<i>Type of contract:</i> Multipartite model	<i>Strategic orientation</i>		Food Supply Chain Process	Network of local suppliers providing more sustainable product			Results: Guaranteed product quality, local farmers and producers involvement, reduced environmental impact, -10-15% methane emission, +10-15% production, +5-10% price, final product – preventive measure against certain diseases
		<i>Continuity</i>			Three years contract (2013-2016)			
		<i>Collaboration</i>			Profit is redistributed to support local farmers, communication is assured by improved traceability			
		<i>Risk management</i>			More than twenty technical references concerning production inputs and outputs			
		<i>Pro-activity</i>			Collaborates with research institutions and laboratories			
External opportunities	<i>Need for sustainable value creation</i>	<i>Value proposition</i>	<i>Sustainability dimensions</i>	<i>Primary production</i>	<i>Manufacturing</i>	<i>Distribution</i>		
	Need for better and healthier nutrition	Healthier product produced by local farmers and producers with less environmental damage	<i>Community</i>	local farmers involved	local producers involved			
			<i>Environment</i>	Conserving biodiversity, improved soil profile, reduced methane emission				
			<i>Animal Welfare</i>	Improved animal wellbeing				
			<i>Biotechnology</i>					
			<i>Health and Safety</i>	Better lipid profile				
			<i>Labor and Human Rights</i>					
			<i>Procurement</i>	Support of local farmers				

Conclusion

Synthetic framework that allows representation of sustainable food supply chains is developed to help:

- ✓ Practitioners
- ✓ Supply chains
- ✓ Associations in food industry

- **picture** of current sustainability
- convey it to **stakeholders**
- assure a better **communication**
- achieve **greater effects** of joint sustainable performance.

Next steps:

- Continue theoretical studies
- Apply to more cases
- Interview food industry experts
- Develop a framework to assist sustainable food supply chains design

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