

Challenges to Gaining Food Sector Participation in Conservation Markets

A Supply Chain View

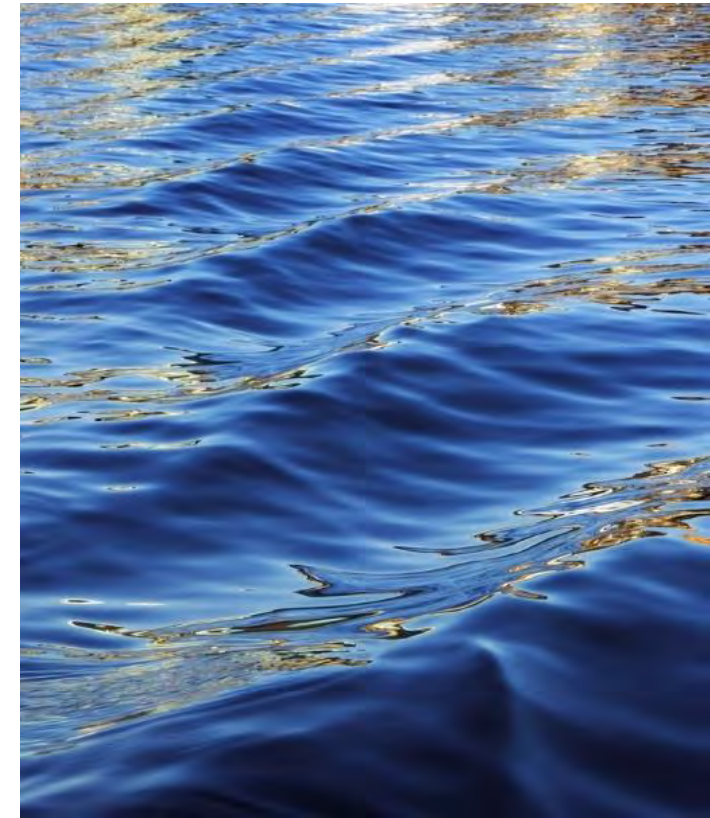
Alberta Grasslands Conservation Markets Symposium

David Y. Smith
Orion Global Business Sustainability Consultants
November 19, 2019



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Global Business Sustainability Consultants



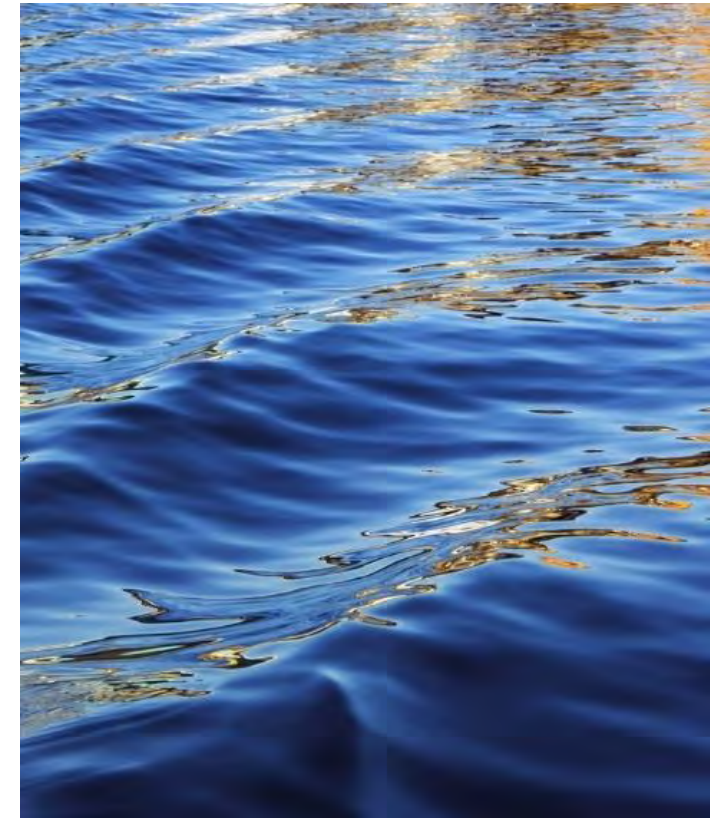
Outline



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- 1) Challenges Facing Grocery & Foodservice Sectors, to Prioritize Biodiversity & Ecosystem Services
- 2) Specific Sector Sustainability Initiatives
- 3) Challenges Mainstreaming Investment
- 4) Grassland Conservation Markets In Practice



David Y. Smith

Companies:



Industry Associations:

PRESENTED BY:



Canadian Council of Grocery Distributors

Conseil canadien des distributeurs en alimentation



Sustainability Initiatives:





Challenges Facing Grocery &
Foodservice Sectors, to Prioritize
Biodiversity & Ecosystem Services

Key Challenges for Food Sector to Address Biodiversity and Ecosystem Services

1. Prioritization vs. Consumer Perceptions
2. Communication/Understanding / Prioritization vs. Human Health, Climate Change, Plastics, Animal Welfare...
3. Public Trust and Supply Chain Transparency
4. Profitability / Short termism
5. Integration into Sustainability Approaches
6. Leadership
7. Which Approach?

Retailer “Footprints”:

- **Retailer:**

- Products sold can account for 90% of environmental footprint
- Vs. only 10% for running stores, warehouses, trucks
- Globalized supply chain
- Many middlemen
- Raw material production can be 6 -7 steps removed from retailer: “hides”

- **Manufacturer:**

- Supply chains can be 40-60% of environmental footprint
- Global commodity supply chains: sources hard to untangle

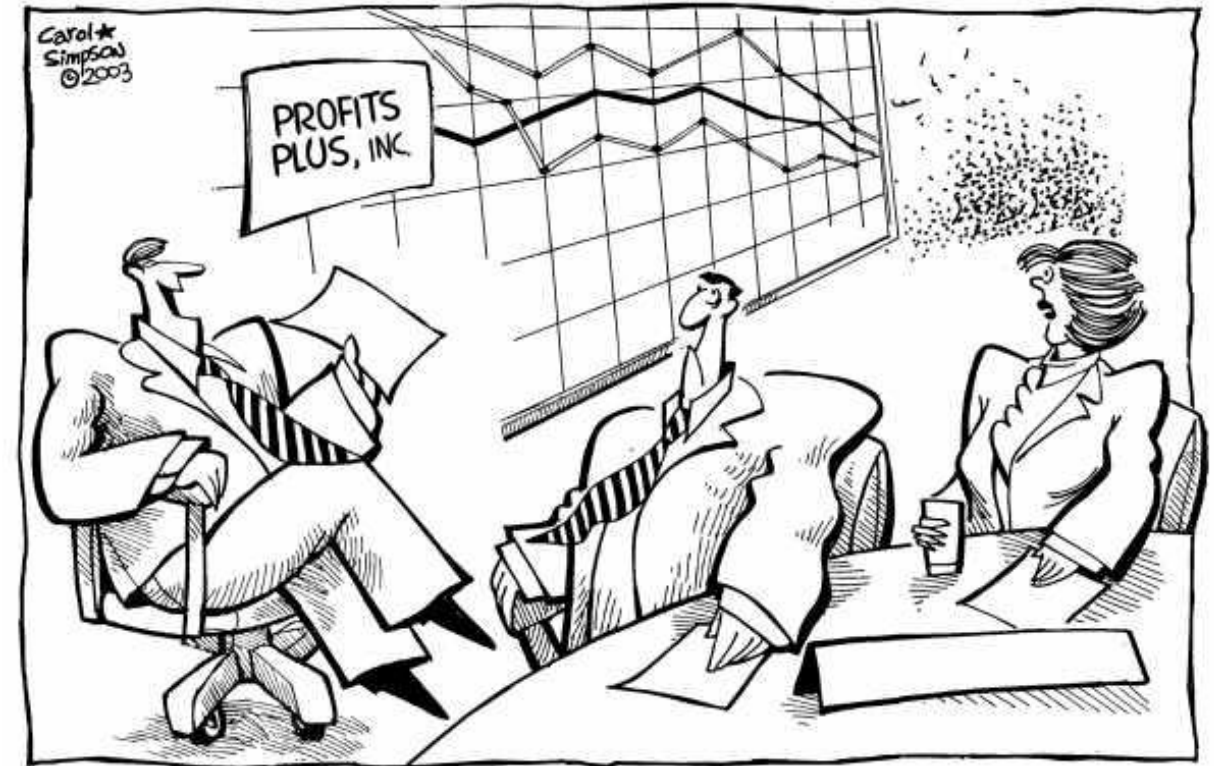
- *Ingredient “X”*: Where does it come from?
- Who is accountable? (esp. to future generation!)
- Who has clout?

Public Trust: Proactive Education to Inform

Public Trust Risk

Distracted by **Emotional** issues public understands
While global buyers seek **Materiality**

- Limited understanding
- Influenced by easy access to many opinions
- Seek “Coles Notes” from credible source
- Balanced “conversations” needed



*“OK, I violated the public trust.
But just how trustworthy is the public anyway?”*

Challenge: “Distraction” By Common Consumer Perceptions vs. Science-based Issues and Collaborative Solutions

Q: What’s the common theme among them?



- “Food miles”
- Transport = small % of env. impact
- Not inherently better practices



- No legal definition
- Not inherently better nutrition
- Ingredients sustainably produced?



- No results of health risk
- Global food prod’n +50%, same land & water
- “precautionary principle”

A: Black or White. Bad or Good. Absolutes.

Low Trust = No Nuance. No Balance.

Time to re-Balance the Conversation.



THE CANADIAN CENTRE FOR
FOOD INTEGRITY

93% of Canadians know little
or nothing about farming

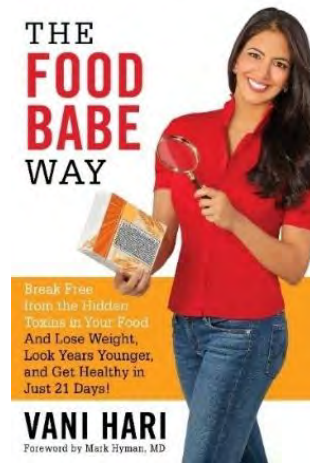


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Public Trust in Food: Context

Easy Access to Everyone's Opinion



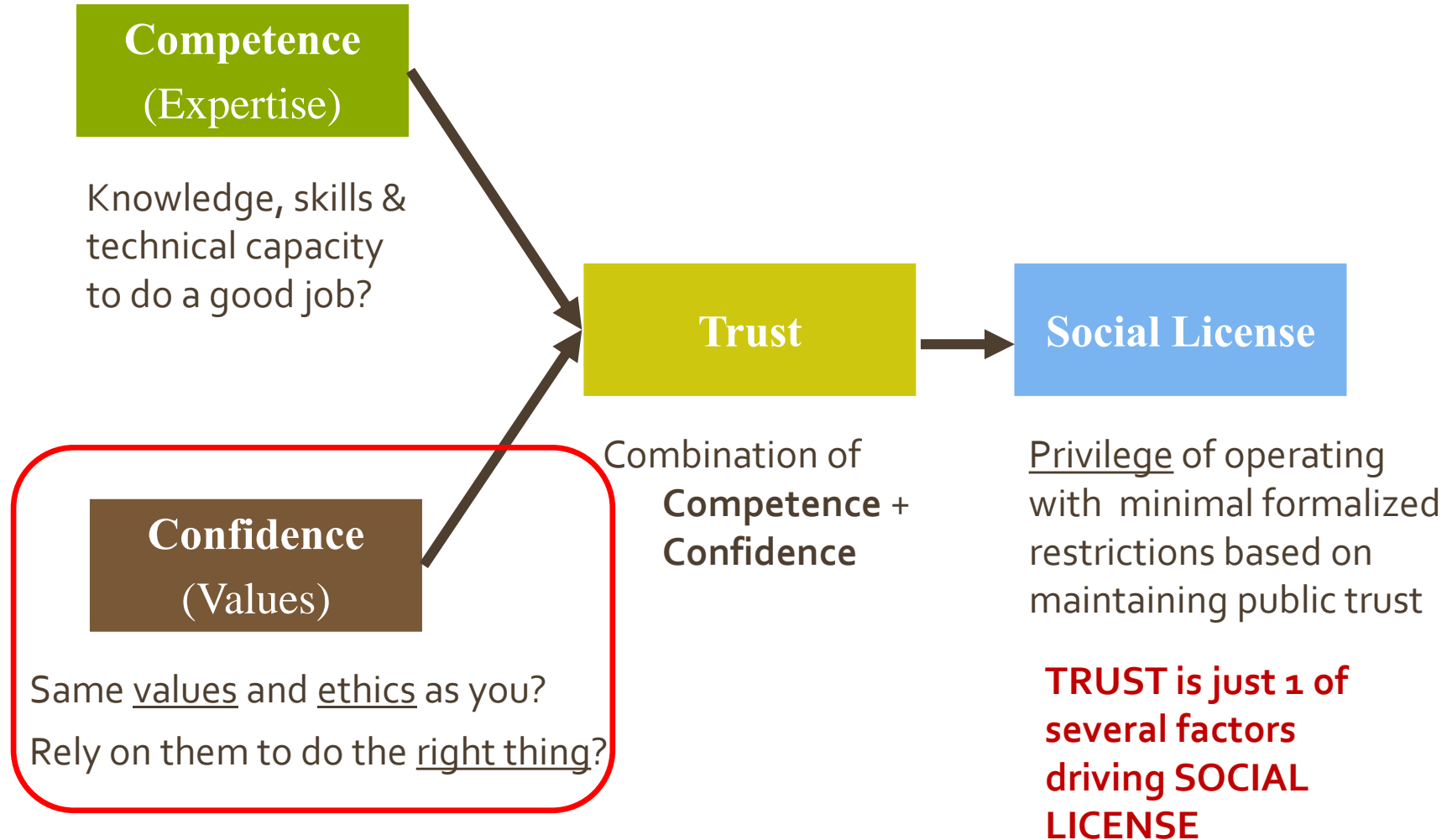
Fake News



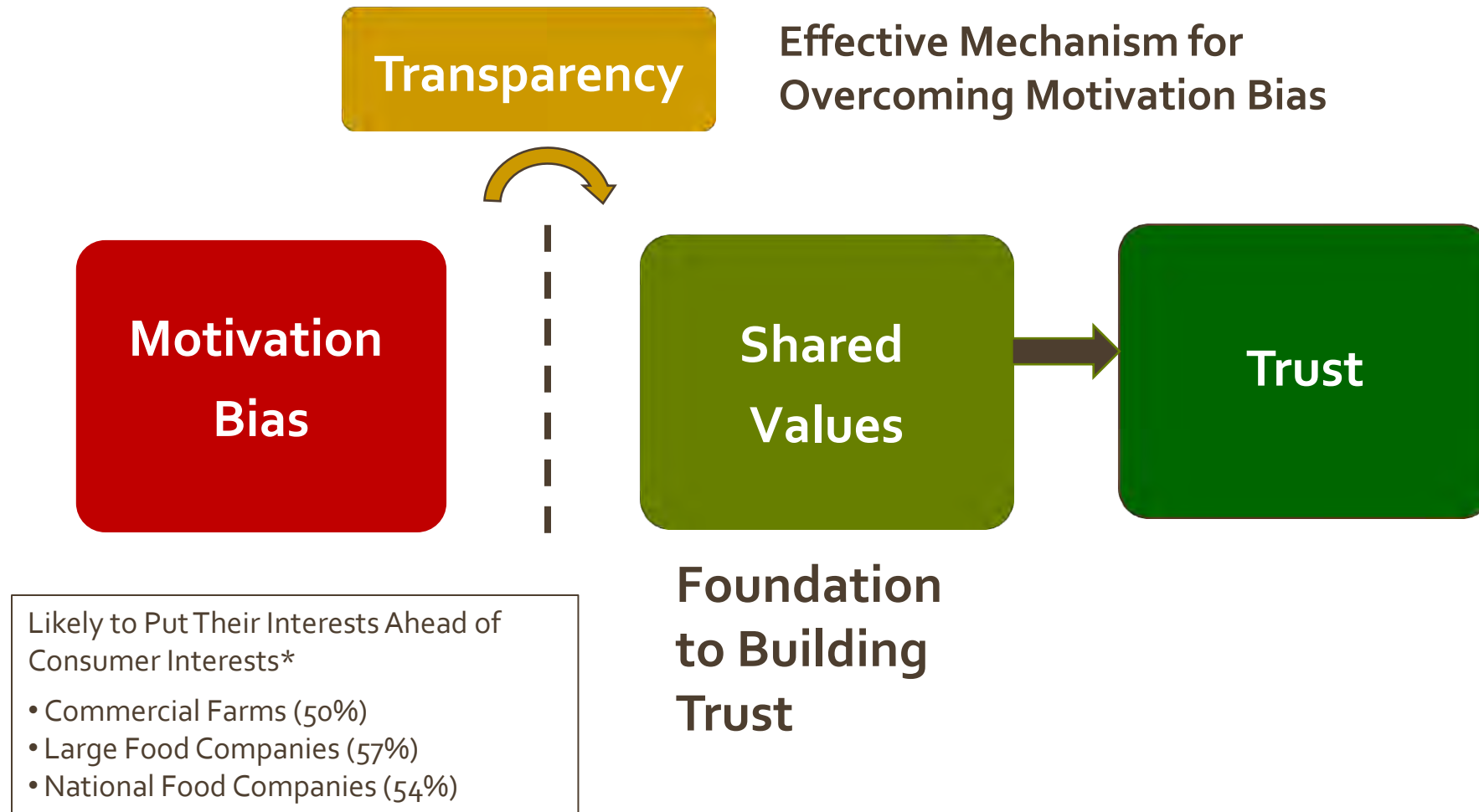
"Post-truth" :

when emotions, beliefs and even lies trump facts as the drivers of public opinion.

Introducing the Trust Model (US Centre for Food Integrity)



Role of Transparency in Promoting Trust (per CFI US)

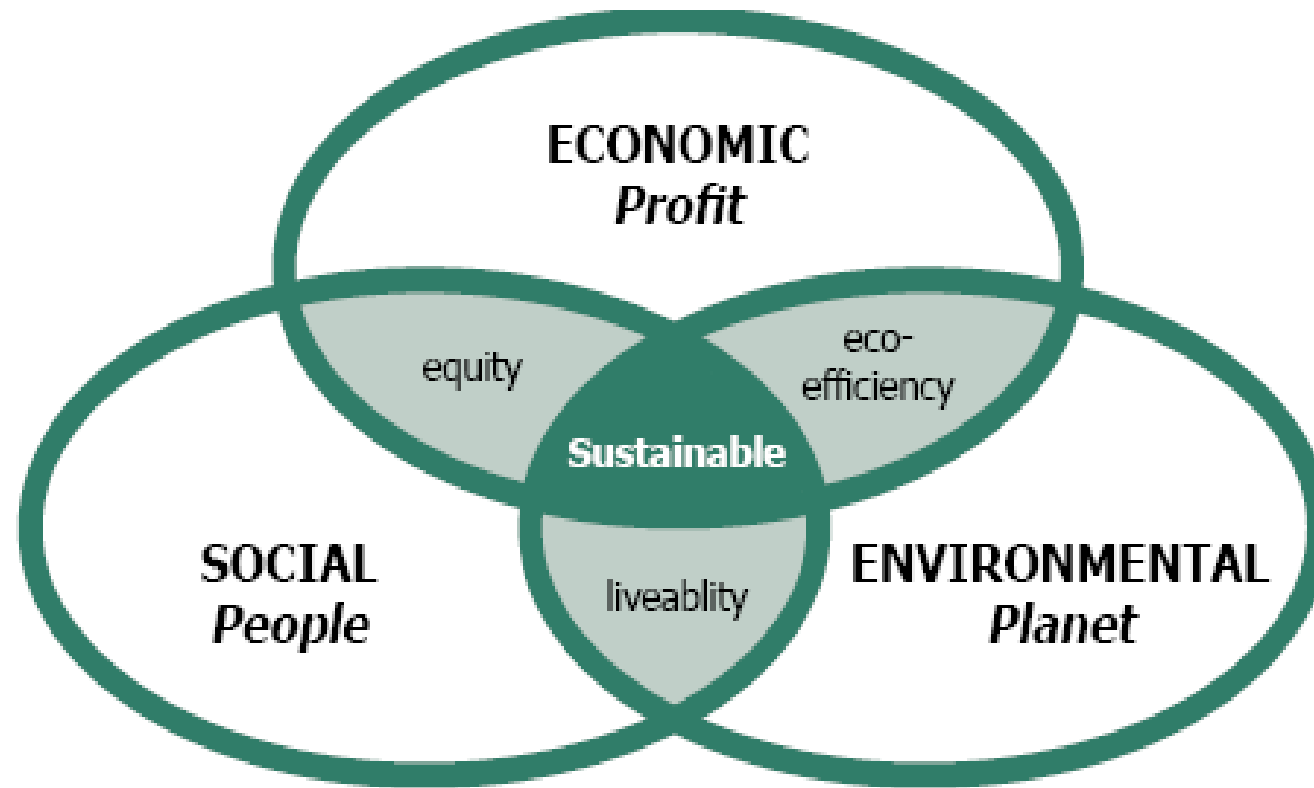


*% Strongly Agreed in US 2015 Consumer Trust Study

Business operates on “what gets measured gets done”, but sustainability has not been that.

- Needs to become Visible AND Actionable
- Too much effort just on shared definitions and standardizing metrics
- What about the data? (activation)
- Vision: a product’s sustainability key measures available to buyers at parity with costs, QA, product safety

Balancing The Triple Bottom Line



Common “Responsible Sourcing” Challenges

Supplier side

1. Biggest impacts can be 5-7 steps deep in supply chain
2. Comingling
3. Traceability
4. Supplier doesn't have the expertise
5. Supplier has limited choice options (i.e. packaging)
6. Cost premiums for better sustainability options

Buyer side

1. Not enough buying clout
2. No long term supplier relationship
3. No / little knowledge
4. No decision support tool (data) / mgmt system
5. Buying decisions: i.e. specs; change orders / late
6. Shrink: not building the demand for it
7. Not integrated into annual objectives

Large End Buyers: Transparency & Traceability

- Large End Buyers face increasing expectations to be accountable for their supply chains
- Retailers & Foodservice: 90% of footprint is in the food sold
- Challenges include:
 - No relationships beyond “1 up”
 - Comingling
 - Lack of data
 - Short term relationships
- Systemic issues = collaboration opportunities...



40%
of manufacturers
LACK VISIBILITY
ACROSS THE
EXTENDED
SUPPLY CHAIN
-IWFPG Global Manufacturing
Outlook 2014



Biodiversity & Ecosystem Services: Battle for Attention with Climate Change, Plastics, “Natural”

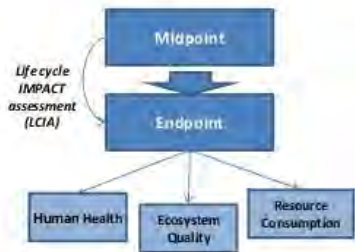
- The terms not well known nor understood
- **Especially** among business people
- Therefore: “protect at risk species”, “conservation”
- Biodiversity included in business activity sustainability initiatives / commodity types as one of the “impact categories” (along with carbon, water, waste/toxicity, labour, indigenous people’s rights)
- Very important to focus senior business people on issues highly relevant to business’ impacts (including supply chain): don’t scare them with immaterial
- Understand that they live in a very short term orientation, while biodiversity improvements take longer

Traditional LCA Methodology hasn't been strong on Biodiversity & Ecosystem Services

But progress is being made to rectify that

LCA: Biodiversity

- Biodiversity will also have host of methodological issues



Midpoint: Various metrics exist
(Potentially Disappeared Fraction *PDF*, α -diversity, Ecosystem scarcity)

- Methodological biases
- Exceptions to the rule

Endpoint: Various methods of LCIA

- Ecosystem service loss
- Lots of data/assumptions required

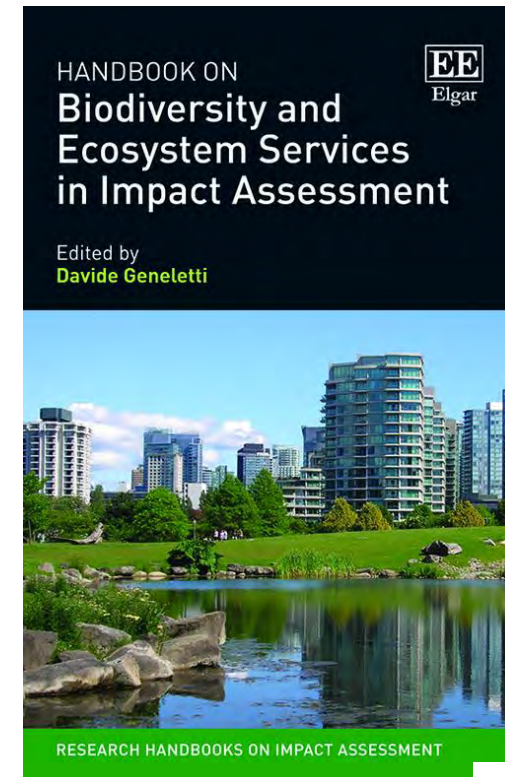
Once you've picked your method you still must address:

Temporal & spatial challenges

How to make comparisons?

What are the baselines?

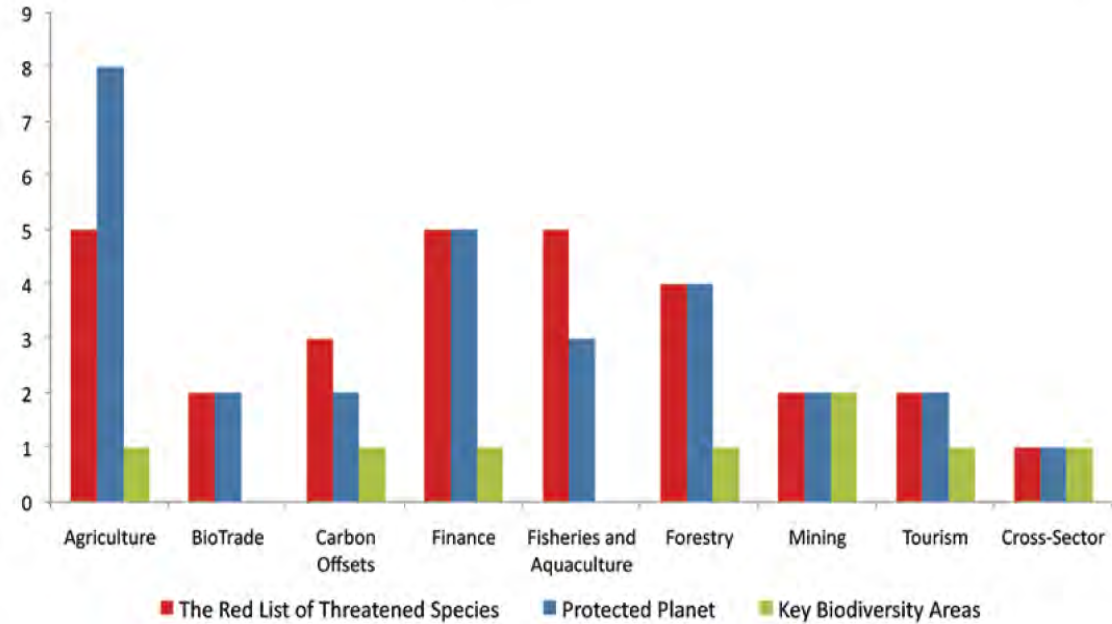
What question are we asking?



Most Sustainability Standards are Evolving to Better Integrate Biodiversity & Ecosystem Services



Figure 11 - Direct references to knowledge products in 37 standards and certification schemes, by sector



Global Sustainability Leadership & Biodiversity Integration



Unilever

UNILEVER SUSTAINABLE LIVING PLAN 2014 PROGRESS

OUR VISION IS TO DOUBLE THE SIZE OF THE BUSINESS, WHILST REDUCING OUR ENVIRONMENTAL FOOTPRINT AND INCREASING OUR POSITIVE SOCIAL IMPACT

SUSTAINABLE SOURCING

By 2020 we will source 100% of our agricultural raw materials sustainably.



- Palm oil:
- Sustainable
 - Traceable
 - Paper and board
 - Soy beans and soy oil
 - Tea
 - Fruit
 - Vegetables
 - Cocoa
 - Sugar
 - Sunflower oil
 - Rapeseed oil
 - Dairy
 - Fairtrade Ben & Jerry's
 - Cage-free eggs
 - Increase sustainable sourcing of office materials

UNILEVER SUPPLIERS A CLOSER LOOK AT BIODIVERSITY



Nestlé in society: Creating Shared Value

695 000 farmers working directly with Nestlé

73%

We audited 8 700 of our 10 000 Tier 1 suppliers to date and found 73% fully complied with our Supplier Code.

38%

The volume of high-priority categories of raw material that are traceable back to the primary source.

MATERIALITY ISSUE	VALUE CHAIN				
	Agriculture	Tier 1 Suppliers	Nestlé	Retail/ Business Channels	Consumers
Traceability Ensuring that priority ingredients have been grown and processed responsibly and can be traced back to origin where possible.	●	●	●	●	●
Animal welfare Safeguarding the well-being of animals in the supply chain and promoting farm animal health and welfare.	●	●	●	●	●
Climate change Reducing GHG emissions and contributing to the mitigation of, and adaptation to, the effects of climate change. • Climate change adaptation • Climate change mitigation	●	●	●	●	●
Natural capital Identifying and preserving elements of ecosystem services that generate value, both directly and indirectly. • Biodiversity • Deforestation • Soil fertility	●	●	●	●	●



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Global Food Sustainability Leadership: Integration



08 Continue to support sustainable agriculture by expanding best practices with our growers and suppliers

Support Sustainable Agriculture

Number of Countries Using Sustainable Farming Initiative



A GUIDE TO SUPPORTING MORE SUSTAINABLE AGRICULTURE

A guide has been drawn up and published in partnership with a panel of international external experts to support practices for more sustainable agriculture.



SUSTAINABILITY | Securing sustainable agricultural supplies and reducing our environmental footprint

GOALS	PROGRESS BY END OF 2014	STATUS
All cocoa will ultimately be sustainably sourced	On Target	In 2014 100% of cocoa sourced sustainably
70% of global coffee will be sustainably sourced by 2015	On Target	As of 2014 65% of global coffee is sustainably sourced
75% of Western European biscuit volume made with Harmony wheat by 2015	On Target	In 2014 65% of Western European biscuits are made with Harmony wheat
Palm oil: 100% RSPO by 2015	Goal Achieved	We met our goal. 100% of palm oil used in biscuits is RSPO certified

Sustainable Agriculture Goals

- All cocoa will ultimately be sustainably sourced
- 70% of global coffee will be sustainably sourced by the end of 2015
- 75% of Western European biscuits volume made with Harmony wheat by the end of 2015
- 100% of palm oil will be RSPO by the end of 2015

Kellogg's GLOBAL SUSTAINABILITY COMMITMENTS

***** RESPONSIBLE SOURCING *****

Ingredients / Materials
Responsible source 100% of agricultural ingredients by 2020*

Sustainable Agriculture
Continue enabling farmers and retailers to implement more sustainable farming practices

Smallholder Farmers
Identify smallholder farmers and build programs to improve agricultural practices and business skills

Women Farmers / Workers
Identify women in the value chain & develop programs to help improve their livelihoods, families and communities

CONSERVING *** NATURAL RESOURCES *******

Energy
By 2020, expand low carbon energy use in plants by 50%*

Reduce energy
Reduce energy used in plants by 13%*

packaging
Continue adding value to foods and the planet via increased resource-efficient packaging

Water
By 2020, implement reuse projects in at least 25% of plants, reduce usage by additional 10% and continue watershed quality support*

Waste
By 2015, increase to 10% number of plants sending zero waste to landfill

* For market leader total production. Excludes Harvest August 2014. © 2014 Kellogg Co.

Goals	Progress
Performance (Yearly) Strive to deliver superior long-term financial performance and sustained shareholder value.	On Track
Human (By 2020) Continue to refine our food and beverage choices to meet changing consumer needs by reducing sodium, added sugars and saturated fats, and developing a broader portfolio of product choices. Continue to provide clear nutrition information on our products, and sell and market them appropriately to our consumers, including children, in line with our global policies and accepted global standards.	Additional Work Required
Environmental (By 2015) Help protect and conserve global water supplies, especially in water-stressed areas, and provide access to safe water. Innovate our packaging to make it increasingly sustainable, minimizing our impact on the environment. Work to eliminate solid waste to landfills from our production facilities. Work to achieve an absolute reduction in greenhouse gas (GHG) emissions across our global businesses. Continue to support sustainable agriculture by expanding best practices with our growers and suppliers.	On Track
Talent (Yearly) Create a safe, healthy, diverse and inclusive workplace that reflects the global communities in which we operate. Respect human rights in the workplace and across the supply chain.	In Progress



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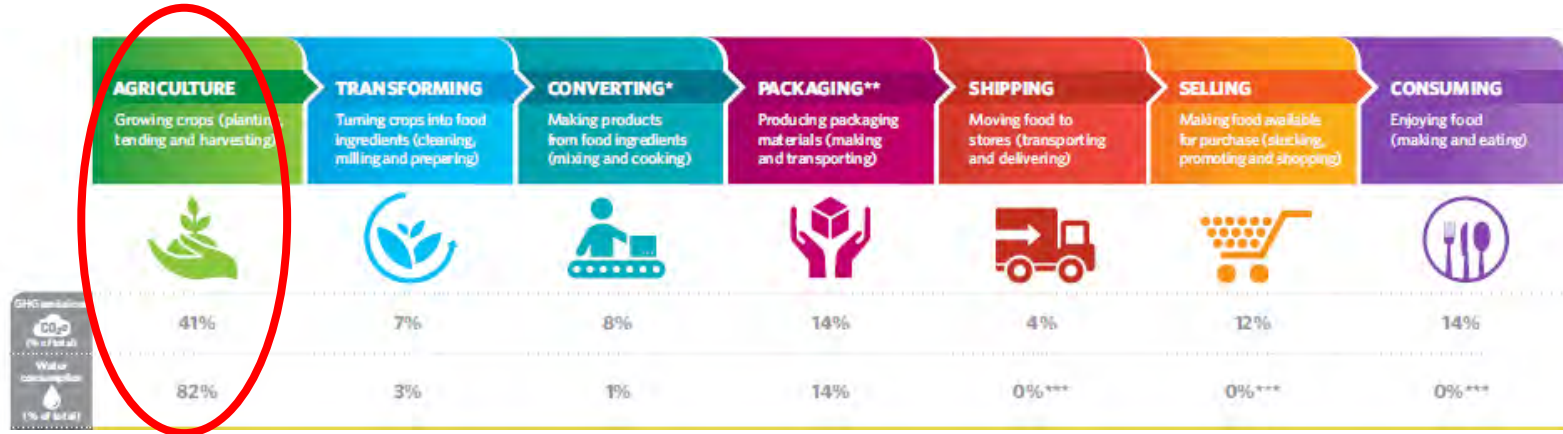
Sust Ag North American Focus

General Mills raw material sourcing

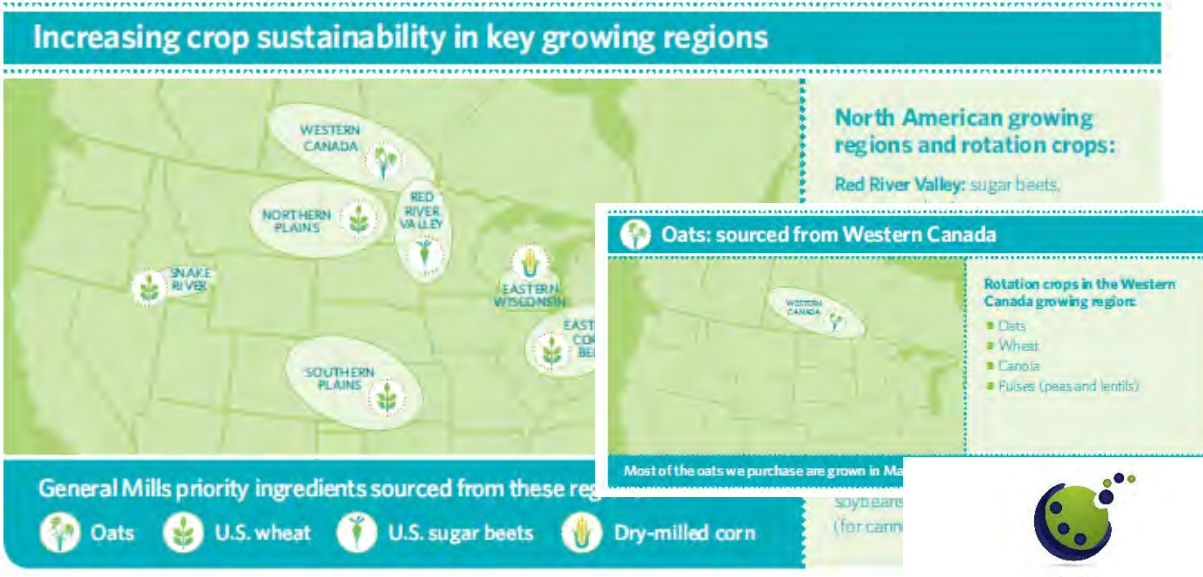


80% developed economies
20% developing economies

OUR GOAL is to sustainably source the raw materials we use in our products. We are committed to sustainably sourcing 100 percent of our 10 priority ingredients by 2020 - representing more than 50 percent of our annual raw material purchases. We partner



Performance dashboard (see sustainability definitions on page 123)			
Ingredient	Primary challenges	FY2020 target (% of spend sourced sustainably)	Progress through FY2014 (% of spend sourced sustainably***)
Vanilla	Smallholder farmer incomes, food security, quality of ingredients	100%	45%
Cocoa	Smallholder farmer incomes, community economic/social development, education (child labor), deforestation/environment	100%	10%
Palm oil	Deforestation (biodiversity, endangered species, environmental impact), indigenous peoples' rights	100%*	83%
Sugarcane	Labor rights (child & forced labor, working conditions); lack of origin visibility due to supply chain complexity	100%	42%
Oats	Declining supply due to profitability vs. other crops	100%	35%
U.S. wheat	GHG emissions, water usage, biodiversity	100%	15%
U.S. sugar beets	GHG emissions, soil loss	100%	34%
U.S. corn (dry milled)	GHG emissions, nutrient utilization, biodiversity	100%	6%
Dairy (fluid milk)**	GHG emissions, water usage, water quality, animal well-being	100%	20%
Fiber packaging	Deforestation	100%	99%



Improving Labour Practices in Supply Chain

- “social license” challenged frequently
- Opp to use huge resources and clout
- 100 staff doing social compliance audits



ASSESSMENTS COMPLETED JAN – DEC 2014
(BREAK UP BY REGION AND AUDIT RESULT)

	Green	Yellow	Orange	Red denied	Industry Audit Approved	Administrative	Grand Total
	Low-risk	Medium-risk	Higher-risk	Higher-risk	Industry suppliers who are required to follow rules	Not used for internal program administration	
	Reached audit metrics	Reached site setup	Reached other BI etc.	Reached BI compliance			
Region A South East Asia	2.1%	30.3%	38.6%	1.9%	25.2%	0.9%	100%
Region B India, Sri Lanka	4.4%	40.5%	52.6%	1.4%	0.4%	0.7%	100%
Region C Europe	18.2%	37.5%	43.7%	0.3%	0.0%	0.4%	100%
Region D China, Pakistan	1.7%	51.6%	37.1%	1.3%	7.6%	0.7%	100%
Region E America	30.1%	28.2%	30.7%	0.4%	0.4%	1.2%	100%
Region F Brazil, Mexico, Middle East, Pakistan, Africa	5.3%	54.7%	21.2%	2.2%	4.6%	12.0%	100%
GRAND TOTAL	11.8%	42.1%	38.8%	1.0%	5.3%	1.2%	100%

Click here to see our Global Assessments and Audit Results >



- 100 auditors became capacity builders
- Global collaboration: tools & equivalency
- Reduced audit fatigue / costs, drove more improvements



Case Study: Forest Products (packaging material)

- Already proactive on many sustainability issues
- Not willing to risk its reputation



Asia Pulp & Paper

- Supplier of raw material for Nestle packaging
- Not a direct supplier
- Much of material from Indonesian rainforests – problems with illegal, in vulnerable areas, indigenous people

GREENPEACE

Activist NGO

1. High profile public campaign against Nestle
2. Nestle removes APP from supply chain



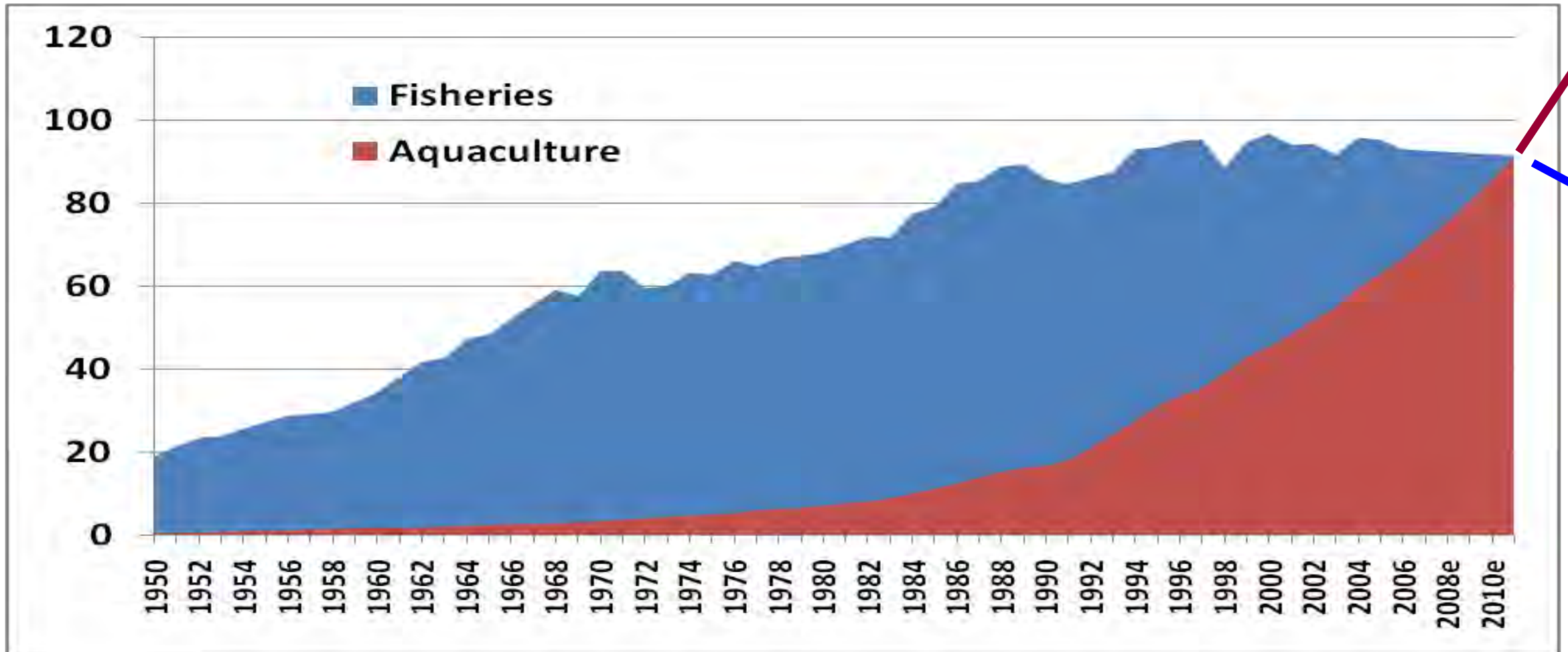
The Forest Trust: Swiss NGO

3. Nestle engages to mediate
4. APP makes commitments
5. Nestle adds APP back in



Seafood Sustainability – Why?

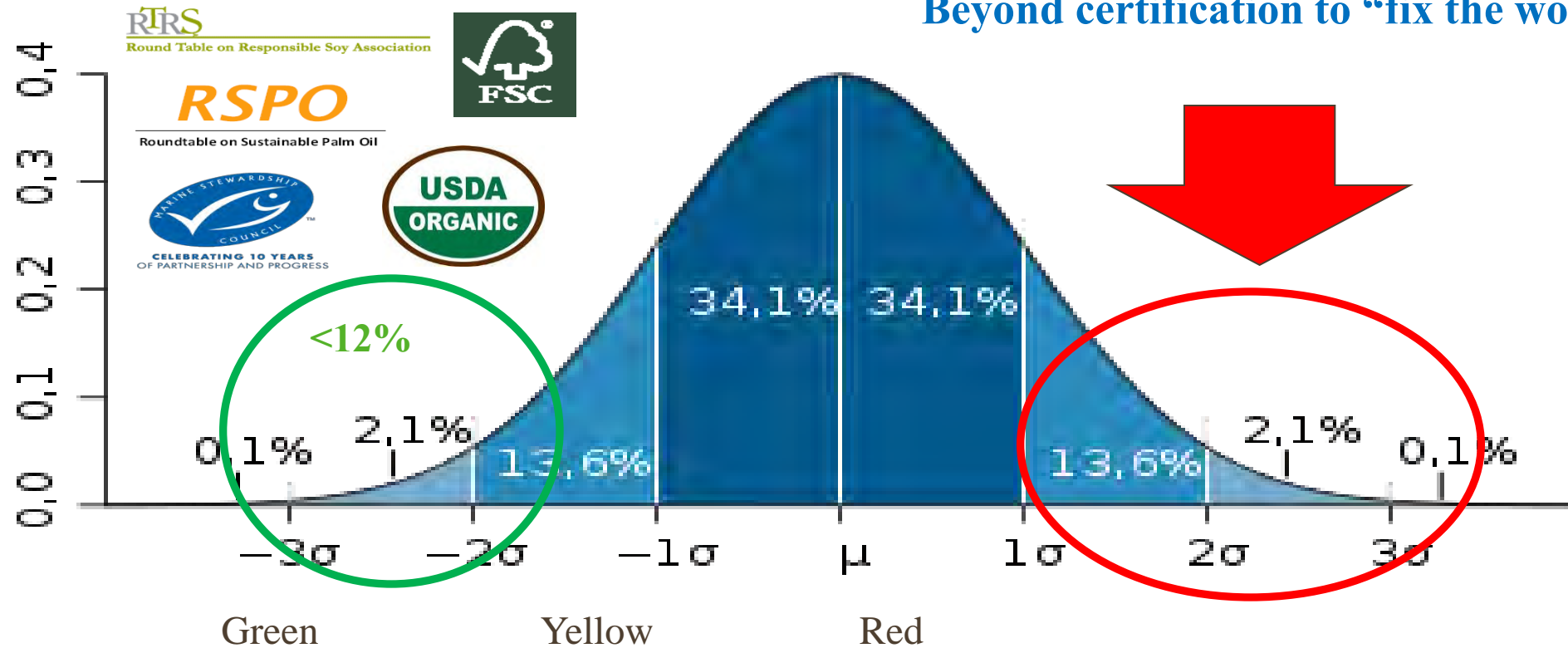
Wild Seafood - Plateau Since Late 1980s; Farming will Increase



Which Approach?

What about the Biggest Challenges?

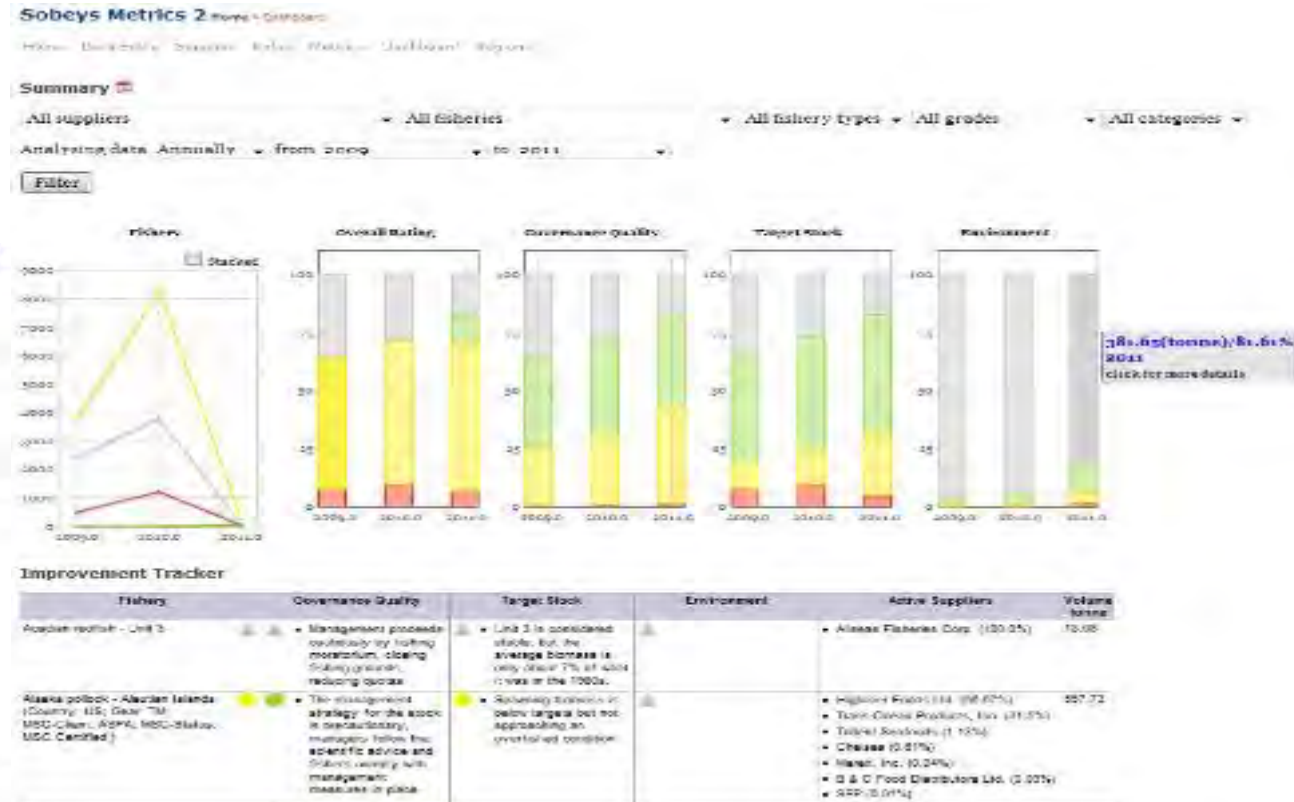
Sobeys Sustainable Seafood:
Beyond certification to “fix the worst first”



Sustainable Seafood: Making Sources Visible

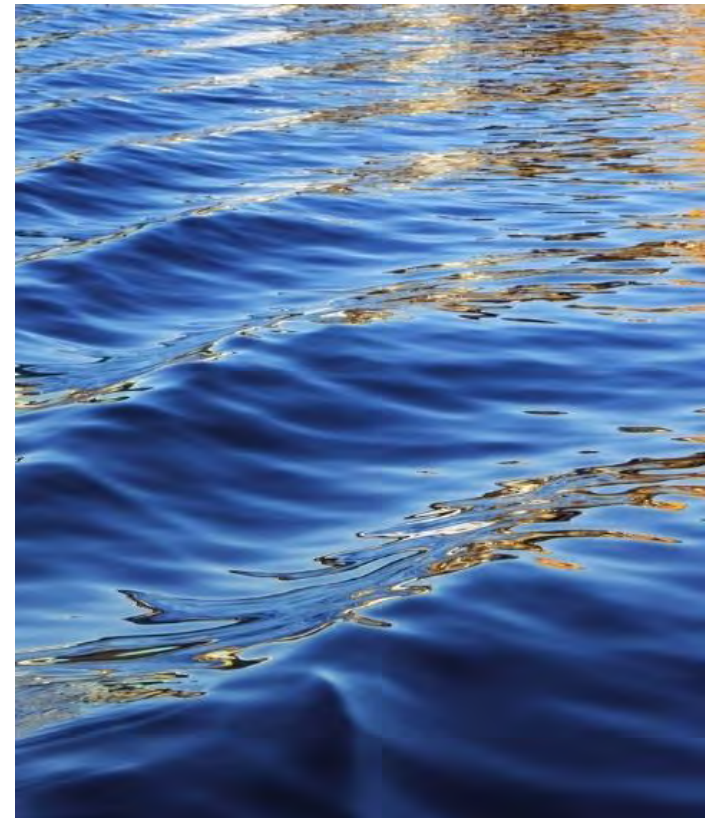
Sobeys suppliers input monthly sourcing data into a web tool that provides an evaluation of each species purchased

Fishery	Governance Quality	Target Stock	Environment	Active Suppliers	Volume (tonnes)
Alaska pollock - US 3	<ul style="list-style-type: none"> Management proceeds cautiously by taking momentum, closing fishing grounds, reducing quotas. 	<ul style="list-style-type: none"> Line 3 is considered stable, but the average biomass is only about 7% of what it was in the 1980s. 		<ul style="list-style-type: none"> Alaska Fisheries Corp. (100.0%) 	15,08
Alaska pollock - Aleutian Islands (Country: US, Gear: TM, MSC-Clear, ASPA, MSC-Status: MSC-Certified)	<ul style="list-style-type: none"> The management strategy for the stock is precautionary; managers follow the scientific advice and management measures in place. 	<ul style="list-style-type: none"> Spawning biomass is below targets but not approaching an overfished condition. 		<ul style="list-style-type: none"> Highline Foods Ltd. (90.67%) Terra-Ocean Products, Inc. (81.0%) Talton Seafoods (1.18%) Chesse (0.81%) Manco, Inc. (0.24%) S & C Food Distributors Ltd. (0.02%) SPF (0.01%) 	557.72
Alaska pollock - F Bering Sea (Country: US, Gear: TM, TS, MSC-Clear, ASPA, MSC-Status: MSC-Certified)	<ul style="list-style-type: none"> MSC advised 'Ser TAC is equivalent to the advised TAC of 513,000t. Actual catch is just below the TAC at 511,000t. 	<ul style="list-style-type: none"> SSB at 24% B0 (the virgin biomass) - the lowest since 1980 but within the B0 corridor (from 1991 B0) showing a slight increase and if 2015 TAC (513,000t) is applied with SSB is expected to rise to about 27% of B0. 	<ul style="list-style-type: none"> Conservation groups have raised concerns about impact of trawler tows upon benthic habitats. Adoption of unselectivity recently has altered the fishery's stock management and production due to possibility that illegal harvesting of the Biological Opener or collection of Steeler sea lions may lead to renewed litigation. 	<ul style="list-style-type: none"> Highline Foods Ltd. (x2.35%) Sive, Mital (13.9%) Export Packers Company Ltd. (11.00%) United Seafoods (1.70%) Manco, Inc. (0.24%) 	570.97
Alaska pollock - East of Alaska (Country: US, Gear: TM, MSC-Clear, ASPA, MSC-Status: MSC-Certified)	<ul style="list-style-type: none"> The management strategy for the stock is precautionary; managers follow the scientific advice and management measures in place. 	<ul style="list-style-type: none"> Recent poor recruitment shows current biomass below targets but does not drop below the critical threshold and considered "negligible" given the precautionary management and recent stock fluctuations. 	<ul style="list-style-type: none"> Regulations in place that restrict logging to prevent potential depletion of prey for endangered Steller sea lions. 	<ul style="list-style-type: none"> Oliver Ltd - Seafoods (50.40%) Brook Water Seafoods (21.38%) Toi Foong International (16.70%) Chesse (5.01%) Janus Family Foods Ltd. (2.16%) Terra-Ocean Products, Inc. (1.41%) S & C Food Distributors Ltd. (0.02%) Alton Fisheries (0.20%) 	200.26
Alaska pollock - Sea of Okhotsk (Country: RU, Gear: TM, MSC-Clear, RPA, MSC-Status: MSC-Pa/Assessment)	<ul style="list-style-type: none"> Precautionary harvest control measures are employed in determining the advised TAC. However if sea-ice advanced TACs are to be based on our knowledge not precisely viable due to so little existing management decisions cannot be evaluated. 	<ul style="list-style-type: none"> SSB appears to be in a very good condition but the 'Low Risk' evaluation is conditional to the public release of stock assessment reports and other information on the stock including reference point. Estimated biomass in 2009 and 2010 is well above the reference point. 	<ul style="list-style-type: none"> Bycatch and discarding of other species is recorded and data are low, generally under 2% (no direct or indirect impacts on HSI species can be attributed to the Alaska pollock fishery). Benthic habitats were first surveyed over 20 years ago in the Bering Sea. 	<ul style="list-style-type: none"> Manco, Inc. (100.0%) 	344





Specific Sector Sustainability Initiatives



“Radical Collaboration”

Problems are Systemic, So Solutions Must Be Too

- Not company specific issues: but material to company
- “Pre-competitive” collaboration: unprecedented
 - Competitors
 - Across value chain
 - Multi - stakeholder engagement
- Adopting standard definitions / metrics just a start
- Verification: avoid “audit fatigue” via collaborative solutions / data sharing



“Radical Collaboration”



Tropical Deforestation Climate Change Initiative

- Objective: “Zero net deforestation by 2020”
- 5 Key commodities: palm oil, soy, paper & timber, beef
- 4 Key countries: Indonesia, Malaysia, Brazil, (Russia)
- 4 Consuming regions: EU, North America, China, India
- Standards engagement (“or equivalent”):



Global Roundtable for Sustainable Beef

Palm Oil Plantations – Northern Sumatra



Risk-based Approach: After Determining What to Focus On

Next Step is Supply Chain Mapping = sources: Transparency and Risk Assessment

Using "Smart Tools" for efficiency

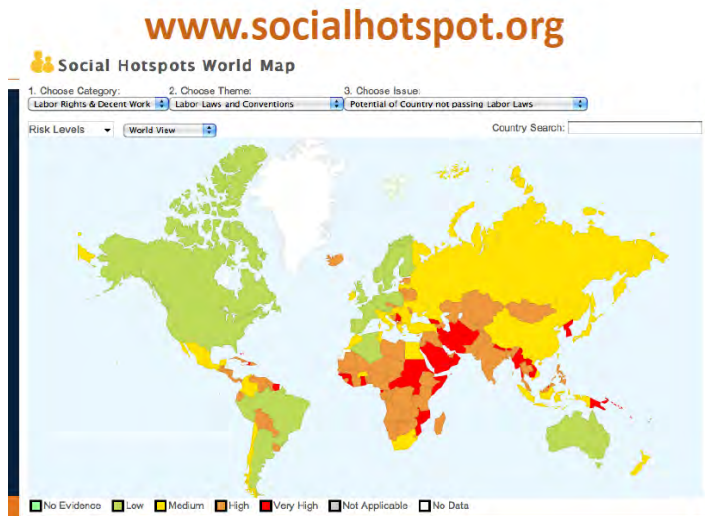
Identify Product/ Ingredient Sources from High Risk Areas

Labour risks

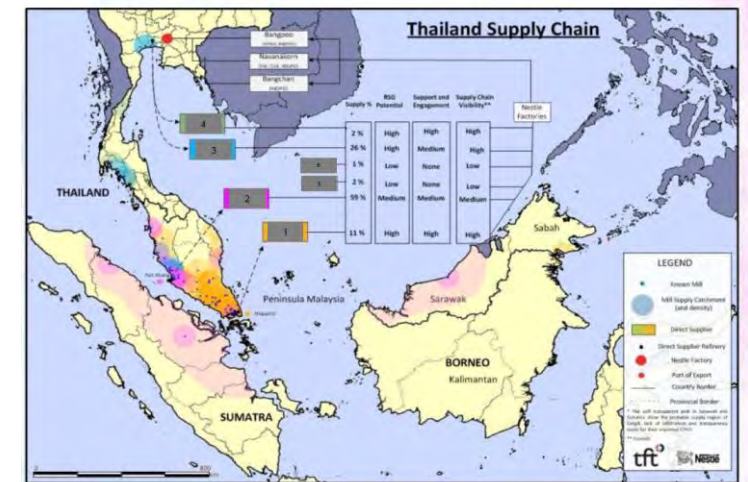
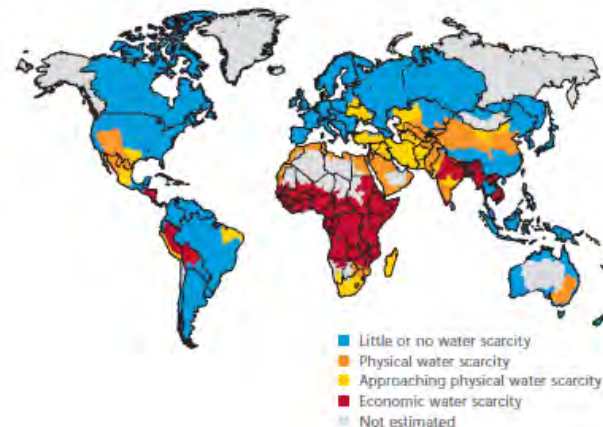
Water risks

Palm oil risks

Overlay production facilities & ingredient sources



Areas of physical and economic water scarcity¹⁵



Shared Insights: Product category “hot spot” analyses

- **SYSTEMIC**: Environmental & Social problems similar across products in a category
- **SHARED INSIGHTS**: No need for each business to do a “life cycle” analysis to answer: *“what should I focus on?”*

THE SUSTAINABILITY CONSORTIUM
 Category Sustainability Profile
 Category: Milk
 Version: 1.0 | Sector: Food, Beverage, & Agriculture | Created: July 27, 2012 | Next Revision: January 1, 2013

Introduction to Category Sustainability Profiles
 A Category Sustainability Profile, or CSP, is a summary of the best available, credible and actionable knowledge about the sustainability aspects related to a product over its entire life. Each CSP represents the culmination of an enormous body of scientific research and expert opinion into one user-friendly document. CSPs are developed and managed by The Sustainability Consortium. To learn more about The Sustainability Consortium and the Category Sustainability Profile development process please visit WWW.SUSTAINABILITYCONSORTIUM.ORG/GMRC.

Life Cycle Hotspots
 Activities that are known, through scientifically derived evidence, to cause significantly greater environmental or social impact than the other activities in the products' life cycles.

Life Cycle Stages	Environmental Impacts	Social Impacts
Raw Material Extraction, Raw Material Processing, Manufacturing & Assembly, Retail, Use	Climate, Ecosystems, Resources	Workers, Society, Consumer, Value Chain Actor, Local Community

Hotspot

1. On-farm application of agrochemicals and other resources, subsequent emissions from farms for feed production; consumption of fuels, energy, emissions from agrochemical production; On-farm leaching and emission of ammonia and sulphur dioxide contribute to acidification. Nitrate, ammonia, and phosphorus emissions lead to eutrophication. Application of pesticides could lead to ecotoxicity impacts. Irrigation for feed production makes up majority of water use in milk supply chain. Land use for the production of feed is significant in the milk supply chain. Phosphorus consumption in phosphate fertilizer production. Fossil fuel consumption for electricity and heat for feed and concentrates production.
2. Leaching and volatilization of emissions from manure management: Ammonia volatilisation from manure leads to acidification, ammonia and nitrate leaching from manure leads to eutrophication; anaerobic methane and nitrous oxide emissions contribute significantly to climate change potential and photochemical ozone formation (ground-level ozone).
3. Enteric methane from dairy cows: Enteric methane from ruminants such as dairy cows lead to climate change potential and photochemical ozone formation (ground level ozone).

Life Cycle Hotspots continued on the next page.

THE SUSTAINABILITY CONSORTIUM
 Category Sustainability Profile
 Category: Milk

Hotspot	Life Cycle Stages	Environmental Impacts	Social Impacts
4. Dairy farm operations: carbon dioxide and carbon monoxide from combustion of fossil fuels, drinking water, raw milk refrigeration; Consumption of fossil fuels (cumulative energy demand) for dairy farm operations lead to carbon dioxide and carbon monoxide emissions, leading to climate change and photochemical ozone formation, respectively. Dairy operations lead to significant land use. Drinking water is supplied to the dairy cows. Refrigeration of raw milk leads to ozone-depleting emissions.	[Icon]	[Icon]	[Icon]
5. Dairy processing, energy use: Energy is consumed in the processing and refrigeration of milk, leading to ozone-depleting emissions.	[Icon]	[Icon]	[Icon]
6. Dairy processing, milk loss and waste water: Loss of milk as effluent leads to eutrophication. Significant water is used for cleaning equipment which leads to waste water generation.	[Icon]	[Icon]	[Icon]
7. Land transformation and forest clearing for diet production: Removal of land cover affects habitat, changes soil temperature and moisture, which causes declines in terrestrial and soil species. Sedimentation and changes in water temperature from land cover removal result in loss of aquatic species.	[Icon]	[Icon]	[Icon]

Additional Issues & Stakeholder Concerns
 Sustainability issues that have either conflicting or limited scientifically derived evidence linked to this category of products.

1. On-farm land use and management: Intensive cultivated pasture maintenance is a source of nutrient loading and nitrate pollution, which brings harm to community watersheds. In general, land use and management (especially of animal wastes) are cited as contributing to water depletion.
2. Animal welfare: The ethical treatment of cattle is of high concern for animal rights and welfare organizations. The concept of the five freedoms form a widely accepted set of principles or target. Provide cattle freedom from hunger, thirst, discomfort, pain, injury, disease, fear and distress during animal husbandry, transport and slaughter. Also provide freedom to Express Normal Behavior.

Improvement Opportunities
 Actionable design, production and/or management practices that are known to reduce the negative impact of one or more life cycle hotspots.

Consumer Goods Manufacturer Practice

1. Reduction of energy use, milk loss, and cleaning water at processing: Implement milk loss prevention practices during milk transfer, milk filling, and cleaning. Implement continuous processing and optimize processing schedule to minimize interruption. Efficiency-gaining equipment can be installed.

Supply Chain Engagement

- II. Use of benchmarking tools: Use a calculation tool or other benchmarking method to catalog inputs to and outputs from the fabrication of this product, and set targets for reducing inputs and managing waste, using the tool as a guide.

Improvement Opportunities continued on the next page.

Changing Context

- Large brandowners (global) seeking farm level performance assurance
- “Public Trust” requires greater transparency
- Governments want higher level of assurance of progress
- Numerous sustainable agriculture codes/criteria/standards emerge (commodity specific)

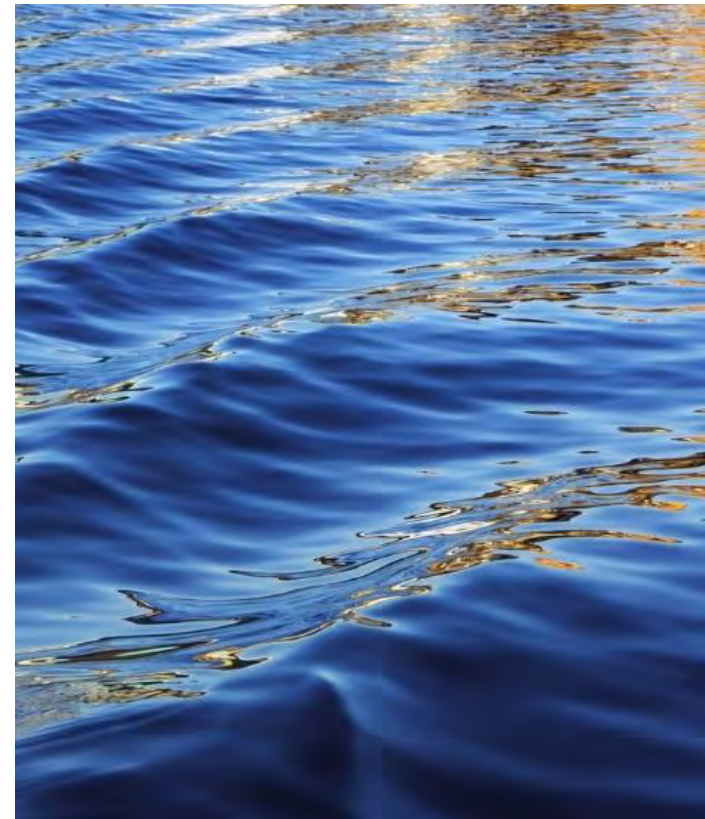


Sustainable agriculture code
Implementation guides





Challenges Mainstreaming Investment



Ecosystem Valuation: Interesting Academic Exercise

Figure 1: Business benefits of undertaking CEV

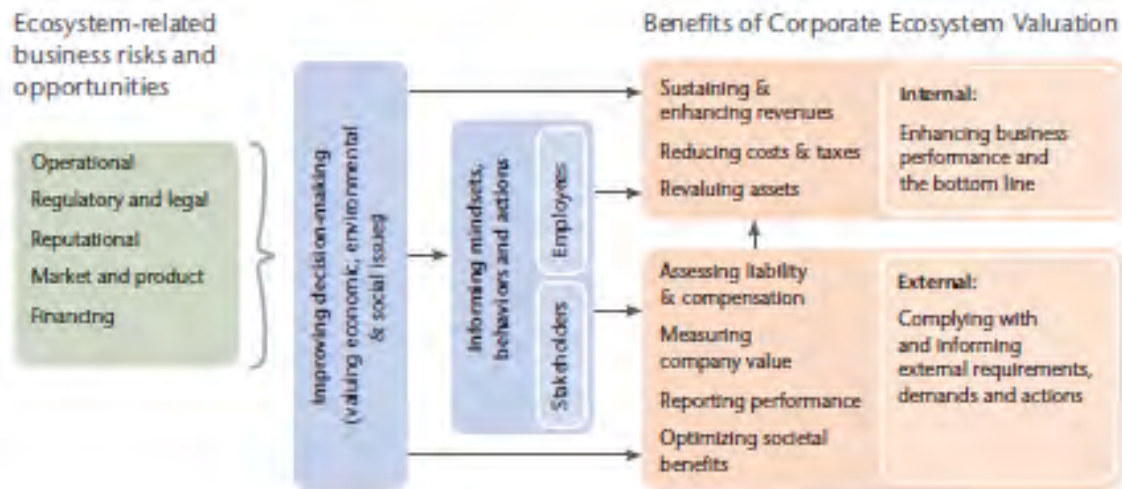
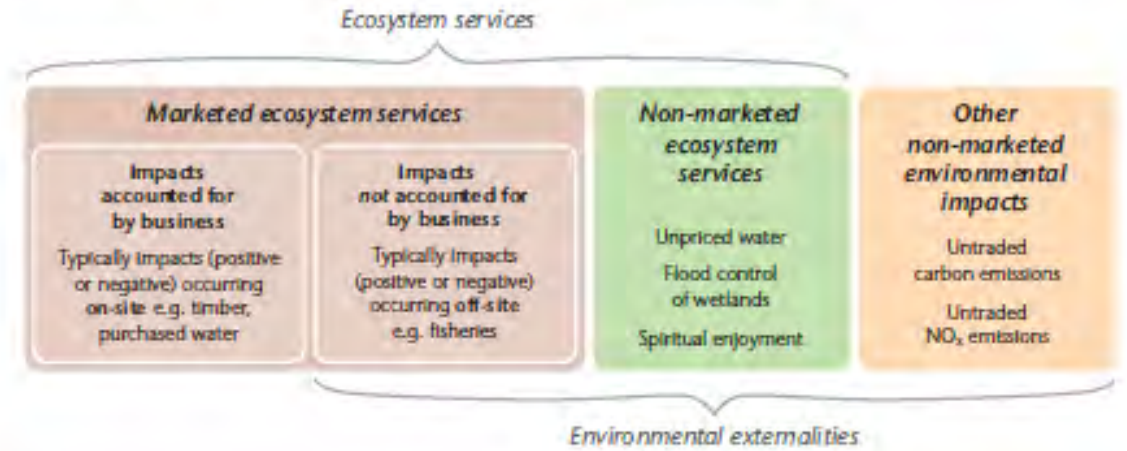


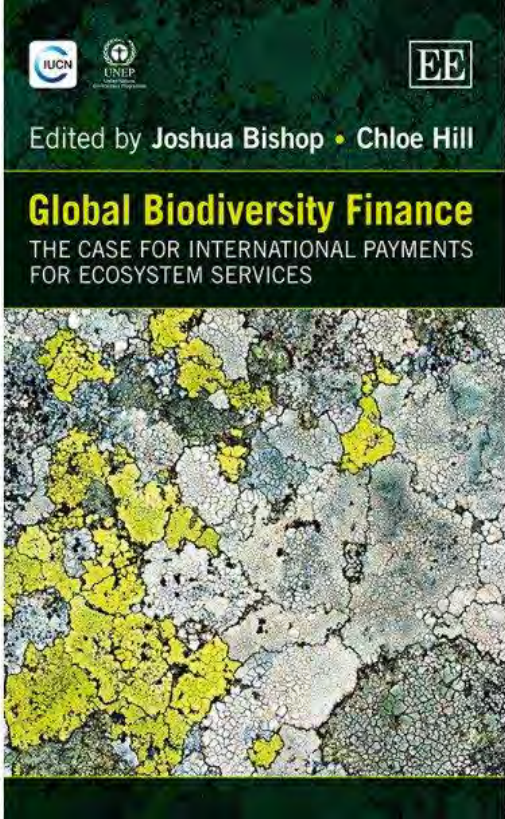
Figure 3: The relationship between ecosystem services and environmental externalities



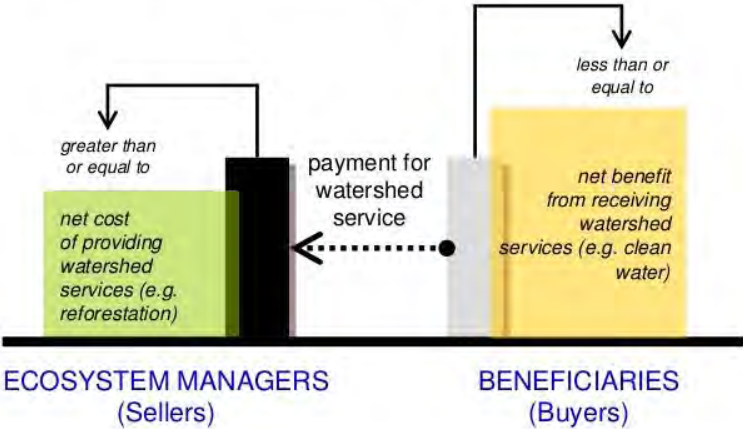
Source: WBCSD



Beyond Valuation to Payment: From Externality to Internality



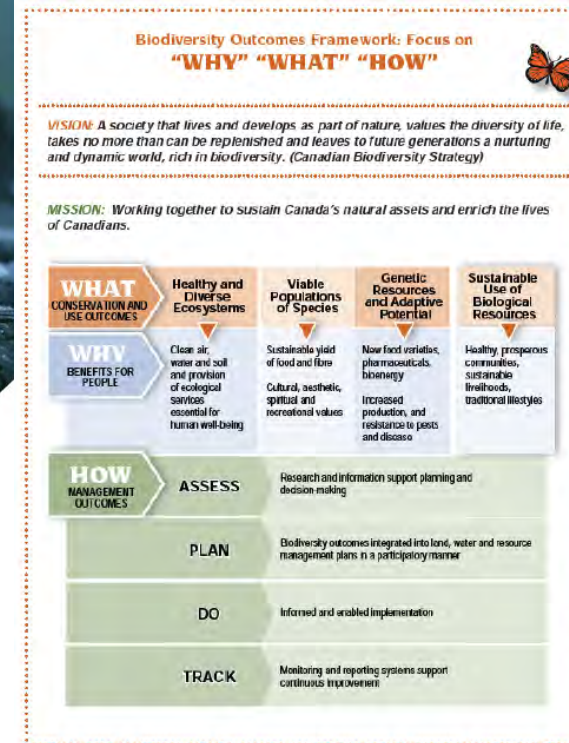
PES as a conservation incentive





Grassland Conservation Markets In Practice

Ensure Linkages: CBD/ Aichi Targets / Canadian Strategy

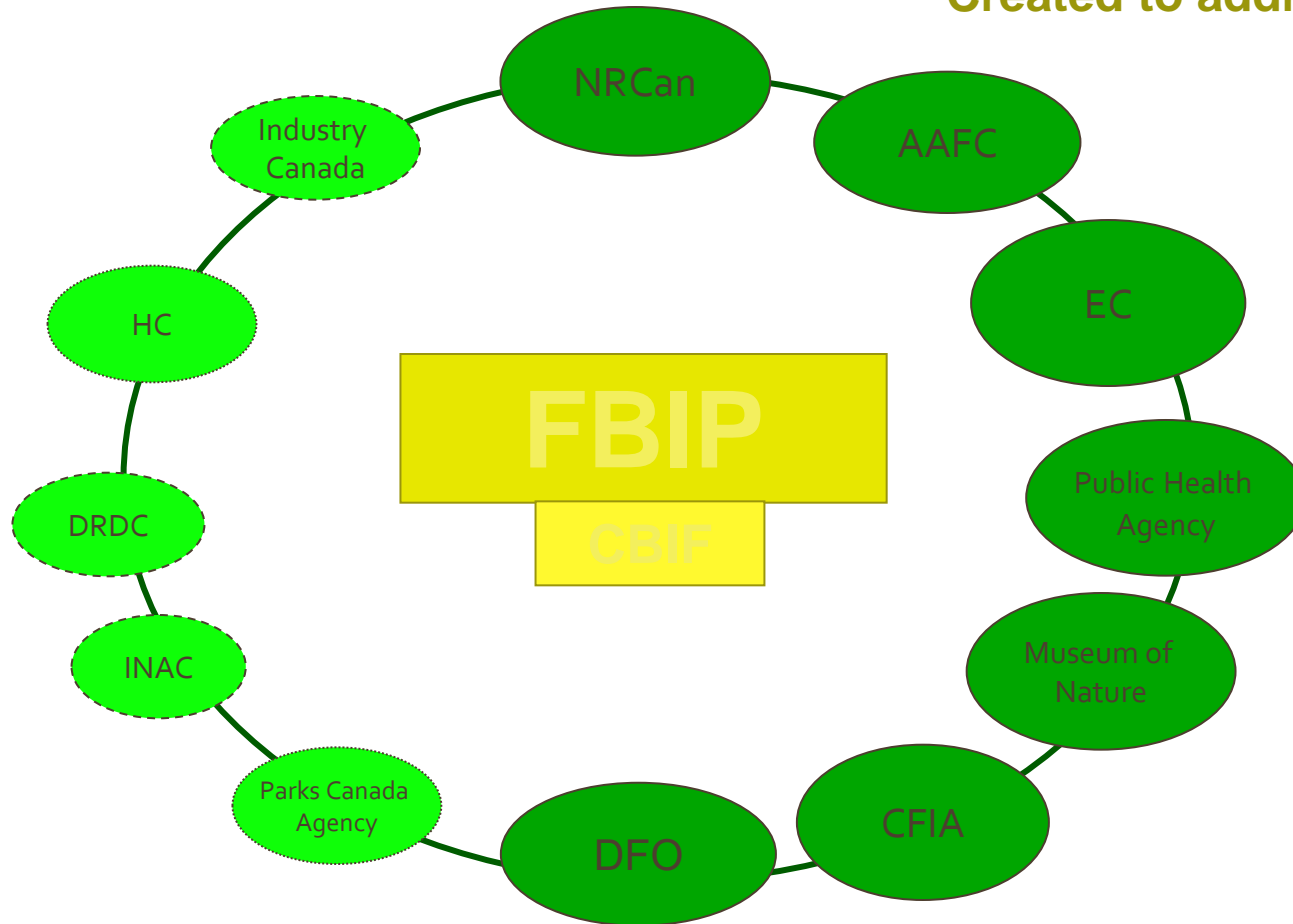


Risk-based approach and Smart Tools: Biodiversity

FBIP: Federal Biodiversity Information Partnership

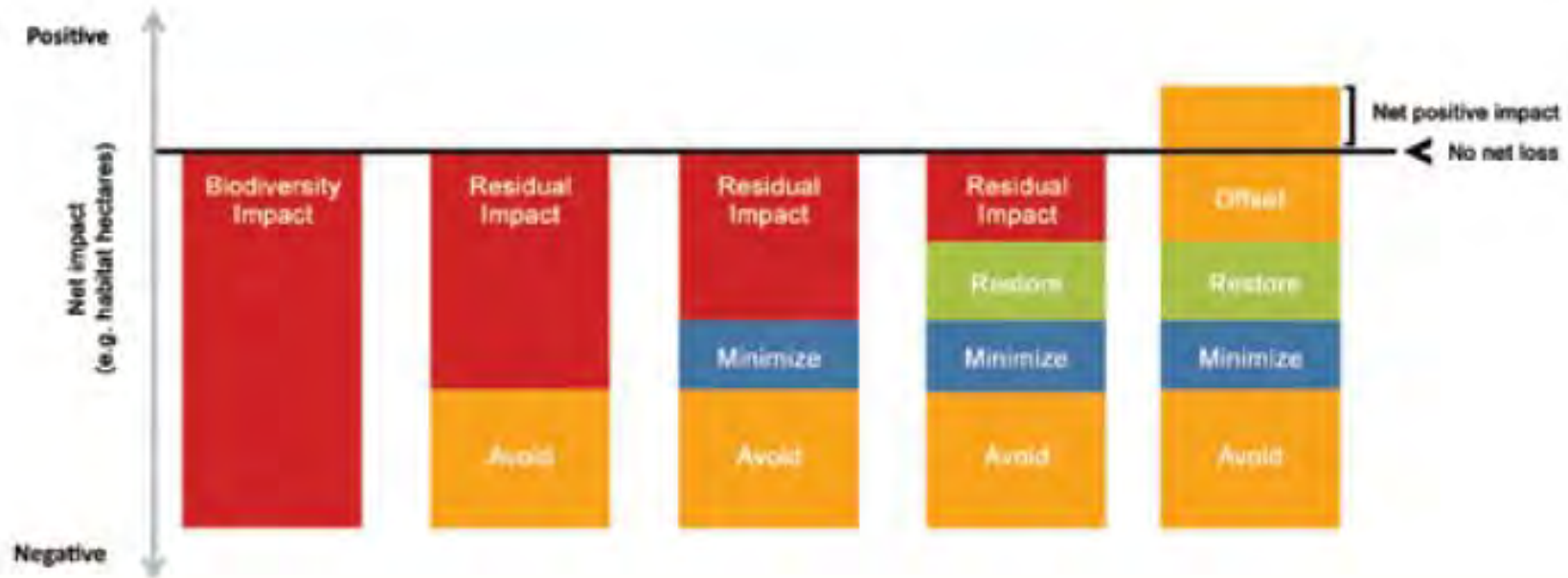
A national database and mapping of biodiversity data

Created to address the federal role:



1. **Provides federal leadership** on integration and cooperation;
2. **Creates access** to federal biodiversity data;
3. **Builds capacity** to support decision-making;
4. **Enhances responsiveness** to domestic priorities;
5. **Lowers Costs** by reducing duplication.

The Biodiversity Mitigation Hierarchy: Toward “Net Positive Impact”



Source: Adapted from ICMM & IUCN, 2012



Driving Biodiversity for Business Forward: Beyond Carbon and Water

- **Increase relevancy:**

- Illustrative category supply chain mapping
- Deeper into supply chains: 4-5 steps back
- The business case: build on McKinsey “Resource Revolution”
- Activation: Add to LCA methodology (+ data capture)

- **Engagement/ Collaboration:**

- Across NGOs/ trade association initiatives for critical mass

- **Activation:**

- Comprehensive “tool kit”: turnkey for a business
- Tools and a vision for data capture/sharing and supply chain transparency: habitats vs. biodiversity
- Proactive communications

THANK YOU

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