Coffee

Category Sustainability Profile

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About the Coffee Product Category

This Category Sustainability Profile is part of a Product Sustainability Toolkit produced by The Sustainability Consortium. The Coffee Toolkit covers roasted and unroasted coffee beans and beverages made from coffee beans. Product types covered include ground coffee, whole bean coffee, instant coffee, cold brew coffee, ready-to-drink coffee, and single serve coffee pods. This Toolkit is not meant to cover coffee substitutes and complex products containing coffee as an ingredient, for example, chicory coffee, roasted barley coffee, coffee ice cream, and coffee-flavored candies.

This Category Sustainability Profile is relevant for global markets.

Introduction

This Category Sustainability Profile (CSP) details key performance indicators (KPIs) that can be used to track and measure the sustainability performance of a brand manufacturer, as well as the set of science-based environmental and social hotspots that support the KPIs. The Sustainability Consortium® (TSC®) has created this CSP through its multi-stakeholder development process with members and partners, including manufacturers, retailers, suppliers, service providers, NGOs, civil society organizations, governmental agencies, and academics, each bringing valuable perspectives and expertise.

TSC is a global organization dedicated to improving the sustainability of consumer products that also offers a portfolio of services to help drive effective implementation. For more information please visit www.sustainabilityconsortium.org.

Contents

Key Performance Indicators

QUESTION	RESPONSE OPTION
1. Crop Supply Mapping For what percentage of your crop supply can you identify the country, region, or farm of origin?	**A.** We are unable to determine at this time. **B.** The following percentages represent the origins of our crop supply: **B1.**_____% is the portion of our crop supply for which we are unable to determine the origin. **B2.**_____% is the portion of our crop supply for which we have identified the country of origin. **B3.**_____% is the portion of our crop supply for which we have identified the region of origin. **B4.**_____% is the portion of our crop supply for which we have identified the farm of origin.
2. Access to Opportunities for Smallholder Farmers What percentage of your smallholder farmer-sourced crop supply, by mass, was sourced from smallholder farmers that are supported by a program to increase opportunities for agricultural training, inputs, and services?	**A.** Not applicable. We do not source our supply from smallholder farmers. **B.** We are unable to determine at this time. **C.** The following percentage of our smallholder farmer-sourced crop supply, by mass, was sourced from smallholder farmers that are supported by a program to increase opportunities for agricultural training, inputs, and services: **C1.**_____%.
3. Child Labor Use - On-farm What are the outcomes of the risk assessments for the worst forms of child labor performed on your crop supply?	**A.** We are unable to determine at this time. **B.** The following percentages, by mass purchased, represent the outcomes of our risk assessment(s) for the worst forms of child labor for our crop supply: **B1.**_____% of crop supply came from low-risk countries with corrective actions taken for any known high-risk sites. **B2.**_____% of crop supply came from high-risk countries that have high-risk sites for which we took corrective actions. **B3.**_____% of crop supply came from high-risk countries, but an audit determined the site risk to be low.
4. Deforestation and Land Conversion - On-farm What percentage of your crop supply, by mass, has been determined to be grown on fields that are low risk for conversion to non-forest use, have had zero conversion of High Conservation Value (HCV) forests or High Carbon Stock (HCS) forests since 2010, had zero deforestation, or was grown on fields with zero conversion of HCV and HCS non-forest lands since 2010?	**A.** We are unable to determine at this time. **B.** We are able to report the following percentages for our crop supply: **B1.**_____% of our crop supply is grown on fields that have been determined to be low risk for conversion to non-forest use. **B2.**_____% of our crop supply has been determined to be grown on fields that have had zero conversion of HCV forests since 2010. **B3.**_____% of our crop supply has been determined to be grown on fields that have had zero conversion of HCS forests since 2010. **B4.**_____% of our crop supply is grown on fields with zero deforestation since 2010. **B5.**_____% of our crop supply is grown on fields with zero conversion of HCV and HCS non-forest lands since 2010.
5. Fertilizer Application - On-farm What was the nitrogen use intensity and phosphorus surplus associated with fertilizer application on the fields where your crops were produced?	**A.** We are unable to determine at this time. **B.** We are able to report the following for our crop supply: **B1.**_____ kg nitrogen per metric tonne of crop harvested. **B2.**_____% of our crop supply, by mass, is represented by the number reported in B1. **B3.**_____ kg phosphorus surplus per metric tonne of crop harvested. **B4.**_____% of our crop supply, by mass, is represented by the number reported in B3.
6. Greenhouse Gas Emissions Intensity - On-farm What was the greenhouse gas emissions intensity associated with the farming operations that produced your crop supply?	**A.** We are unable to determine at this time. **B.** We are able to report the following for our crop supply: **B1.**_____ kg CO_2e per metric tonne of crop harvested. **B2.**_____% of our crop supply, by mass, is represented by the number reported above.

7. Irrigation Water Use Intensity - On-farm What was the irrigation water use intensity associated with the farming operations that produced your crop supply?	**A.** We are unable to determine at this time. **B.** We are able to report the following for our crop supply: **B1.**_____ cubic meters of irrigation water use per metric tonne of crop harvested. **B2.**_____% of our crop supply, by mass, is represented by the number reported above.
8. Labor Rights - On-farm What are the outcomes of your risk assessments, conducted against a labor standard, that were performed on the farming operations that produced your crop supply?	**A.** We are unable to determine at this time. **B.** The following percentages, by mass, represent the outcomes of our risk assessment(s): **B1.**_____% of our crop supply came from low-risk countries with corrective actions taken for any known high-risk sites. **B2.**_____% of our crop supply came from high-risk countries that have high-risk sites for which we took corrective actions. **B3.**_____% of our crop supply came from high-risk countries, but an audit determined the site risk to be low.
9. Worker Health and Safety - On-farm What are the outcomes of your verifiable worker health and safety risk assessments performed on the farming operations that produced your crop supply?	**A.** We are unable to determine at this time. **B.** The following percentages, by mass, represent the outcomes of our risk assessment(s): **B1.**_____% of our crop supply came from low-risk countries with corrective actions taken for any known high-risk sites. **B2.**_____% of our crop supply came from high-risk countries that have high-risk sites for which we took corrective actions. **B3.**_____% of our crop supply came from high-risk countries, but an audit determined the site risk to be low.
10. Yield - On-farm What was the average yield of your crop supply from farming operations?	**A.** We are unable to determine at this time. **B.** We are able to report the following for our crop supply: **B1.**_____ metric tonnes of crop supply harvested per hectare planted. **B2.**_____% of our crop supply, by mass, is represented by the number reported above.
11. Worker Health and Safety - Processing What was the injury and illness rate at the company-owned or contract processing facilities that produced your final product?	**A.** We are unable to determine at this time. **B.** Our injury and illness rate was: **B1.**_____. **B2.**_____% of our product, by mass, is represented by the number reported above.
12. Packaging Raw Material Sourcing What percentage of the sales packaging used for your final products, by mass, was post-consumer recycled material and sustainably-sourced renewable virgin material?	**A.** Not applicable. We do not use sales packaging for our product. **B.** We are unable to determine at this time. **C.** The sales packaging used for our final products was: **C1.**_____% post-consumer recycled material. **C2.**_____% sustainably-sourced renewable virgin material.
13. Sustainable Packaging Design and Production What percentage of the sales packaging for your final products, by mass, was recyclable, was formally assessed for material and process efficiency and weight or volume optimization, and for which quantified environmental impact reduction can be demonstrated?	**A.** Not applicable. We do not use sales packaging for our product. **B.** We are unable to determine at this time. **C.** We are able to report the following for the sales packaging used for our final products: **C1.**_____% of our packaging, by mass, was recyclable. **C2.**_____ % of our packaging, by mass, has demonstrated progress on goals for material and process efficiency during packaging manufacturing. **C3.**_____ % of our packaging, by mass, has demonstrated progress on goals for weight or volume optimization during packaging design. **C4.**_____ % of our packaging, by mass, has a demonstrated quantified environmental impact reduction.

14. Transportation to Retailers What percentage of your final product was transported to downstream retail or distribution centers by logistics providers (carriers) that reported their annual greenhouse gas (GHG) emissions associated with transportation?	**A.** We are unable to determine at this time. **B.** The following percentage of our product, by mass, was shipped to retail or distribution centers by carriers who reported their GHG emissions associated with transportation: **B1.**_____%.

Key Performance Indicators with Guidance

1. CROP SUPPLY MAPPING

Question

For what percentage of your crop supply can you identify the country, region, or farm of origin?

Response Options

A. We are unable to determine at this time.

B. The following percentages represent the origins of our crop supply:

B1._____% is the portion of our crop supply for which we are unable to determine the origin.

B2._____% is the portion of our crop supply for which we have identified the country of origin.

B3._____% is the portion of our crop supply for which we have identified the region of origin.

B4._____% is the portion of our crop supply for which we have identified the farm of origin.

Guidance

Calculation & Scope

This question measures your knowledge of the origins of your crop supply and does not affect your ability to use both primary and regional data in questions requiring farm-level metrics.

Calculate B1 as the mass of your crop supply for which you are unable to identify the country, region, or farm of origin, divided by the total mass of your crop supply, then multiply by 100.

Calculate B2, B3, and B4 as the mass of your crop supply for which you have identified the country, region, or farm of origin, divided by the total mass of your crop supply, then multiply by 100.

The percentages reported for B1, B2, B3, and B4 must be mutually exclusive and their sum must equal 100%.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

A country is defined as a nation-state recognized by the United Nations. A region is defined as a sub-country area such as an agricultural zone or region, eco-region, or geo-political boundary (e.g., state, county, department). Due to the variance in how "region" may be defined, respondents are encouraged to use a consistent interpretation from year to year when reporting data for this question. A farm is an area of land and its buildings that may be comprised of one or more locations that are managed together.

Procurement data, trade networks, or national or subnational product production data may help to identify the origin of your product supply.

If using the Stewardship Index for Specialty Crops Calculator to measure farm-level environmental impacts for any portion of your crop supply, you can enter that portion of your crop supply in B3. Additionally, the percent of your supply from GlobalG.A.P. certified farms can be included in your response for B4.

Certifications, Standards & Tools

GLOBALG.A.P.: GLOBALG.A.P. offers farm management certification for crops (fruits and vegetables, flowers and ornamentals, combinable crops, green coffee, and tea); livestock (cattle and sheep, dairy, calf and young beef, pigs, poultry, and turkey); aquaculture; chain of custody; plant propagation material; compound feed manufacturing; and livestock transport. The program also includes a risk assessment for worker health, safety, and welfare, as well as criteria for animal welfare and food safety.
http://www.globalgap.org/uk_en/

QS. Quality scheme for food: Certifications through the QS scheme allow for traceability from farm to store.
https://www.q-s.de/

Stewardship Index for Specialty Crops Calculator: This calculator calculates yield, energy use, nitrogen application, phosphorus surplus, and irrigation water use for US specialty crop farms. The tool provides an output

per crop that needs to be aggregated for all feed crops to answer this question.
http://www.stewardshipindex.org/metric_calculator.php

TSC Respondent Tools: The Sustainability Consortium has produced a set of tools to help companies respond to KPIs including spreadsheet versions of the Category Sustainability Profiles and data collection and calculation templates for select KPIs. Visit the link below to request access to these tools free of charge.
http://www.sustainabilityconsortium.org/respondenttools

UTZ Certified: UTZ Certified is a sustainable farming program for coffee, cocoa, tea, and hazelnut farms and businesses. The UTZ program focuses on sustainable farming techniques, safe working conditions, environmental protection, and elimination of child labor. UTZ-certified farms must meet strict requirements and are subject to monitoring by third parties.
https://www.utzcertified.org/

Hotspots Addressed	***7.*** *Supply chain traceability*

2. ACCESS TO OPPORTUNITIES FOR SMALLHOLDER FARMERS

Question

What percentage of your smallholder farmer-sourced crop supply, by mass, was sourced from smallholder farmers that are supported by a program to increase opportunities for agricultural training, inputs, and services?

Response Options

- **A.** Not applicable. We do not source our supply from smallholder farmers.
- **B.** We are unable to determine at this time.
- **C.** The following percentage of our smallholder farmer-sourced crop supply, by mass, was sourced from smallholder farmers that are supported by a program to increase opportunities for agricultural training, inputs, and services:

  C1._____%.

Guidance

Calculation & Scope

Calculate C1 as the mass of your crop supply that came from smallholder farmers that are supported by a program to increase smallholder farmer opportunities, divided by the total mass of your crop supply that came from smallholder farmers, then multiply by 100.

Perform this calculation using data from a 12-month period that ended within 12 months of the date you respond to this question.

A program to increase smallholder farmer opportunities includes a documented strategy to identify, engage with, and provide support to smallholder farmers in the supply chain. This program can be developed internally or through external partnerships.

Crops supplied from smallholder farmers certified using the certifications and standards listed below can be included in the calculation of C1. Products with other certifications that have requirements for agricultural training, inputs, and services or otherwise improving the livelihood of smallholder farmers can also be included in the calculation of C1.

Certifications, Standards & Tools

C.A.F.E. Practices: The Coffee and Farmer Equity (C.A.F.E.) Practices represent a standard by which coffee suppliers can be evaluated against economic, environmental, and social criteria.
http://globalassets.starbucks.com/assets/4a67ce15e63b4ea18461ff65a540feb3.pdf

Fairtrade International Certification: Fairtrade International provides standards and a certification through FLOCERT.
http://www.fairtrade.net/certifying-fairtrade.html

Rainforest Alliance - Agriculture Certification: Rainforest Alliance has two certifications: farm and chain of custody. Rainforest Alliance Certified Farms have met rigorous social and environmental standards set by the Sustainable Agriculture Network (SAN). The SAN/RA Chain-of-Custody certification program supports the traceability of products from farm to package.
http://www.rainforest-alliance.org/agriculture/certification

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UTZ Certified: UTZ Certified is a sustainable farming program for coffee, cocoa, tea, and hazelnut farms and businesses. The UTZ program focuses on sustainable farming techniques, safe working conditions, environmental protection, and elimination of child labor. UTZ-certified farms must meet strict requirements and are subject to monitoring by third parties.
https://www.utzcertified.org/

Background Information

GIZ: Growing Business with Smallholders: The German Federal Ministry for Economic Cooperation and Development has created a document that provides guidance and steps for engaging and doing business with smallholder farmers.

	http://www.inclusivebusinesshub.org/group/agribusiness/forum/topics/growing-business-with-smallholders-a-guide-to-inclusive-agribusin **Oxfam: Think Big Go Small:** Oxfam has produced a document outlining potential benefits from industry-smallholder interactions, and examples of successful implementation. http://www.oxfam.org/en/policy/think-big-go-small
Definitions	**Agricultural training, inputs, and services:** Agricultural training, inputs, and services have been identified as provisions that have produced economic and social benefits for smallholder famers. These include technical agricultural services and training, infrastructure, seeds, fertilizer, equipment, crop protection technologies, credit and banking services, and mobile phones. **Program to increase smallholder farmer opportunities:** A program to increase smallholder farmer opportunities includes a documented strategy to identify, engage with, and provide support to smallholder farmers in the supply chain. This program can be developed internally or through external partnerships. **Smallholder farms:** Family-owned and operated farms whose size varies by geographic region, but is smaller than its agribusiness counterparts in the region. Generally speaking, smallholder farms are two hectares or less in size.
Hotspots Addressed	***1.*** *Access to opportunities for smallholder farmers - On-farm*

3. CHILD LABOR USE - ON-FARM

Question

What are the outcomes of the risk assessments for the worst forms of child labor performed on your crop supply?

Response Options

A. We are unable to determine at this time.

B. The following percentages, by mass purchased, represent the outcomes of our risk assessment(s) for the worst forms of child labor for our crop supply:

B1._____% of crop supply came from low-risk countries with corrective actions taken for any known high-risk sites.

B2._____% of crop supply came from high-risk countries that have high-risk sites for which we took corrective actions.

B3._____% of crop supply came from high-risk countries, but an audit determined the site risk to be low.

Guidance

Calculation & Scope

To determine if a country is low-risk or high-risk for the worst forms of child labor for B1, utilize a country risk analysis tool. The tool should measure the strength of a country's ability to govern and enforce laws, regulations, and internationally recognized principles. This assessment may be a first party systematic review assessment, or external risk analyses tools may be utilized. It must be conducted at least once per year.

On-site risk assessments and audits, where necessary, can be conducted by second or third parties and must have been conducted at least once every two years using a standard based on internationally recognized principles. The assessment and standard must be verifiable and must address the worst forms of child labor, as outlined by International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work or United Nations (UN) Global Compact.

Calculate B1 as the mass of your crop supply that came from low-risk countries with corrective actions taken for any known high-risk sites, divided by the total mass of your crop supply, then multiply by 100.

Calculate B2 as the mass of your crop supply that came from high-risk countries that have high-risk sites for which you took corrective actions, divided by the total mass of your crop supply, then multiply by 100.

Calculate B3 as the mass of your crop supply that came from high-risk countries, but an audit determined the site risk to be low, divided by the total mass of your crop supply, then multiply by 100.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

The sum of B1, B2, and B3 must not exceed 100%.

The Business Social Compliance Initiative Countries' Risk Classification tool listed below may be used to inform your response for B1.

The standards and websites listed in Background Information below may be helpful for conducting your on-site risk assessment(s) and for understanding appropriate corrective actions, which can inform your response for B2.

The certifications listed below may be used to calculate your response for B3.

Other standards, certifications, and tools may also be applicable.

Certifications, Standards & Tools

Business Social Compliance Initiative Countries' Risk Classification: This list classifies countries' risk of social injustice in an effort to assist companies in determining high and low risk for their sourcing and operations.
http://www.bsci-intl.org/news/bsci-supports-improved-working-conditions-risk-classification-list

C.A.F.E. Practices: The Coffee and Farmer Equity (C.A.F.E.) Practices represent a standard by which coffee suppliers can be evaluated against economic, environmental, and social criteria.
http://globalassets.starbucks.com/assets/4a67ce15e63b4ea18461ff65a540feb3.pdf

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UTZ Certified: UTZ Certified is a sustainable farming program for coffee, cocoa, tea, and hazelnut farms and businesses. The UTZ program focuses on sustainable farming techniques, safe working conditions, environmental protection, and elimination of child labor. UTZ-certified farms must meet strict requirements and are subject to monitoring by third parties.
https://www.utzcertified.org/

Background Information

Social Accountability International SA8000 Standard: SA8000 is a human rights standard that can be used for audits of workplaces across industries. It is based on principles developed by the United Nations Declaration on Human Rights and the Conventions of the International Labour Organization.
http://www.sa-intl.org/index.cfm?fuseaction=Page.ViewPage&pageId=937

United Nations Global Compact Human Rights and Business Dilemmas Forum: United Nations Global Compact Human Rights and Business Dilemmas Forum present an introduction to, analysis of, and business recommendations for minimizing social sustainability risks in the supply chain.
http://human-rights.unglobalcompact.org/

Definitions

Corrective actions: Prompt actions taken to eliminate the causes of a problem, thus preventing their recurrence.

Farming operation: An area of land and its buildings, comprised of one or more locations managed together that is used for growing crops that are delivered for further processing or as ingredients to other final products.

First party systematic risk assessment: A risk assessment conducted by the reporting organization for management review and other internal purposes, and may form the basis for an organization's declaration of conformity.

Internationally recognized labor principles: Internationally recognized labor principles include the United Nations Global Compact and International Labour Organization Declaration on Fundamental Principles and Rights at Work or equivalent.

Risk assessment: A systematic process to evaluate potential risks within an operation, system, or supply chain. It can include an on-site audit by a second party or third party or a country risk classification analysis that judges the site risk due to prevailing conditions, controls, or other mitigating factors.

Second-party audit: An audit conducted by a party having an interest in the organization, such as customers, or by another entity on their behalf.

Third-party audit: An audit conducted by external, independent auditing organizations, such as those providing certification of conformity to a standard.

Verifiable: Having the ability to demonstrate, through a reputable assessor, the truth or accuracy of a claim.

Worst forms of child labor: Labor that negatively affects a child's health, safety, morals, or reasonable ability to receive an education. This includes forced labor, prostitution or pornography, labor for illicit activities, and hazardous work. Hazardous work activities include work that is abusive, work underground, underwater, at dangerous heights or in confined spaces, work with dangerous machinery and tools, work with heavy loads, work involving hazardous substances and environments, work for long hours, work at night, or work in which the worker is unreasonably restricted from movement outside the premises.

Hotspots Addressed	***2.*** *Child labor use - On-farm*

4. DEFORESTATION AND LAND CONVERSION - ON-FARM

Question

What percentage of your crop supply, by mass, has been determined to be grown on fields that are low risk for conversion to non-forest use, have had zero conversion of High Conservation Value (HCV) forests or High Carbon Stock (HCS) forests since 2010, had zero deforestation, or was grown on fields with zero conversion of HCV and HCS non-forest lands since 2010?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following percentages for our crop supply:

B1._____% of our crop supply is grown on fields that have been determined to be low risk for conversion to non-forest use.

B2._____% of our crop supply has been determined to be grown on fields that have had zero conversion of HCV forests since 2010.

B3._____% of our crop supply has been determined to be grown on fields that have had zero conversion of HCS forests since 2010.

B4._____% of our crop supply is grown on fields with zero deforestation since 2010.

B5._____% of our crop supply is grown on fields with zero conversion of HCV and HCS non-forest lands since 2010.

Guidance

Calculation & Scope

Calculate B1 as the mass of your crop supply that was grown on fields that have been determined to be low risk for the conversion of forests to non-forest use, divided by the total mass of your crop supply from all fields, then multiply by 100. A field can be considered low risk for conversion to non-forest use when one of the following is true: The field is located in a jurisdiction that is assessed to be low risk by a risk classification analysis; the field is located in a jurisdiction that is assessed to be high risk by a risk classification analysis but corrective actions are taken where needed; or the site risk was determined to be low by an on-site audit.

Calculate B2 as the mass of your crop supply that was grown on fields that have had zero conversion of HCV forests since January 1, 2010, divided by the total mass of your crop supply from all fields, then multiply by 100.

Calculate B3 as the mass of your crop supply that was grown on fields that have had zero conversion of HCS forests since January 1, 2010, divided by the total mass of your crop supply from all fields, then multiply by 100.

Calculate B4 as the mass of your crop supply that was grown on fields that have had zero deforestation since January 1, 2010 divided by the total mass of your crop supply from all fields, then multiply by 100.

Calculate B5 as the mass of your crop supply that was grown on fields with zero conversion of HCV and HCS non-forest lands since January 1, 2010 divided by the total mass of your crop supply from all fields, then multiply by 100.

Zero deforestation means that since January 1, 2010, no existing forest was converted to non-forest use for the production of the crop used in your products. Offsets or zero-net deforestation are not included in this definition. Land on which deforestation has occurred since 2010 may be considered to have “zero deforestation” if restored to its previous state as determined by tree cover, species composition, stored carbon, and all other relevant factors. The absence of deforestation must be confirmed using monitoring of the specific land tracts where the crop originated, such as remote sensing, audits, or other direct observations.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

The maximum possible response for each response option is 100%. However, multiple response options may be applicable to the same portion of your crop supply. For example, supply included in the calculation of C2, C3, and/or C4 could also be included in the calculation of C1 if the stated conditions are also met.

Certifications, Standards & Tools

C.A.F.E. Practices: The Coffee and Farmer Equity (C.A.F.E.) Practices represent a standard by which coffee suppliers can be evaluated against economic, environmental, and social criteria.
http://globalassets.starbucks.com/assets/4a67ce15e63b4ea18461ff65a540feb3.pdf

The HCS Approach Toolkit: This High Carbon Stock Approach Toolkit takes practitioners through the steps in identifying HCS forest, from initial stratification of the vegetation using satellite images and field plots, through a

decision tree process to assess the conservation value of the HCS forest patches in the landscape and ensure communities' rights and livelihoods are respected, to making the final conservation and land use map.
http://highcarbonstock.org/the-hcs-approach-toolkit/

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Background Information

Consumer Goods Forum (CGF) Deforestation Resolution: This website provides information on the Consumer Goods Forum's (CGF) 2010 Deforestation Resolution.
http://www.theconsumergoodsforum.com/sustainability-strategic-focus/sustainability-resolutions/deforestation-resolution

Fairtrade International Certification: Fairtrade International provides standards and a certification through FLOCERT.
http://www.fairtrade.net/certifying-fairtrade.html

Greenpeace High Carbon Stock Approach: This website provides information about how to identify High Carbon Stock forests.
http://m.greenpeace.org/international/en/high/campaigns/forests/solutions/HCS-Approach/

High Carbon Stock Approach: This website provides a standardized methodology for identifying natural, high carbon stock forest areas.
http://highcarbonstock.org

High Conservation Value Resource Network: This resource provides common guidance for how to identify, manage, and monitor High Conservation Value forest areas.
http://www.hcvnetwork.org

Jurisdictional and Nested REDD+ (JNR): This website describes a pathway for existing and new projects to be integrated or 'nested' within broader jurisdictional REDD+ programs in order to quantify carbon benefits for individual conservation projects.
http://www.v-c-s.org/project/jurisdictional-and-nested-redd-framework/

WWF High Conservation Value Forests: This website provides information describing the underlying concept of High Conservation Value forests.
http://gftn.panda.org/practical_info/basics/sound_forest/certification/forest_certification/hcvf/

Definitions

High Carbon Stock (HCS) forest: Forest areas with a significant amount of carbon stored within the vegetation and soil. Burning and clearing HCS forests releases stored carbon as greenhouse gas emissions. Different initiatives have set thresholds for identifying High Carbon Stock forests.

High Conservation Value (HCV) forest: Forested areas that support natural concentrations and distribution of species including significant species and ecosystems (e.g., endemic or endangered species, refuges), provide the basic services of nature in critical conditions (e.g., watershed protection, erosion control), and are fundamental to meeting the basic needs and traditional cultural identity of local communities.

Land conversion: The human-induced change of the prevailing physical and ecological conditions of an area of land to facilitate a new use or function. Examples include forests being replaced by pasture, farmland being replaced by urban development, or marshes being drained to create dry land.

Hotspots Addressed

***6.** Land transformation - On-farm*

5. FERTILIZER APPLICATION - ON-FARM

Question

What was the nitrogen use intensity and phosphorus surplus associated with fertilizer application on the fields where your crops were produced?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following for our crop supply:

B1._____ kg nitrogen per metric tonne of crop harvested.

B2._____% of our crop supply, by mass, is represented by the number reported in B1.

B3._____ kg phosphorus surplus per metric tonne of crop harvested.

B4._____% of our crop supply, by mass, is represented by the number reported in B3.

Guidance

Calculation & Scope

Calculate B1 as the average of the most recent nitrogen (N) use intensities for the farms that produced your crop supply, weighted by the mass of crop supplied by each farm. For each farm, calculate N use intensity as the mass of N applied, divided by the mass of crop harvested. Include all N applied with organic and synthetic fertilizers, as well as N applied with irrigation water, from the end of the harvest of the previous crop through the harvest of the crop that produced your supply. Include N applied to a non-harvested cover crop grown between both harvests. Exclude N deposition from the atmosphere.

For conversion purposes, 1 lb = 0.454 kg and 1 short ton = 0.907 metric tonnes. To convert bushels from volume to weight, see the USDA Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products, listed in the Background Information.

Calculate B3 as the average of the most recent phosphorus (P) surpluses for the farms that produced your crop supply, weighted by the mass of crop supplied by each farm. For each farm, calculate P surplus as the mass of P applied minus the mass of P recommended, divided by the mass of crop harvested. Soil test results should be used to determine the amount of recommended P. Recommendations may be provided directly by soil test labs or by extension agents, certified crop consultants, or similar entities. Include all P applied with organic and synthetic fertilizers, from the end of the harvest of the previous crop through the harvest of the crop that produced your supply, and P applied to a non-harvested cover crop grown between both harvests. Data reported in phosphorus pentoxide (P2O5) should be converted to P as follows: 1 kg P2O5 = 0.436 kg P.

If primary farm data are unavailable for any of your supply, you may use a regional estimate to answer B1 and B3. Do not combine primary data and regional estimates. To answer B1 and B3 using regional estimates, you should only use estimates from a sub-country area such as an agricultural zone or region, eco-region, or geo-political boundary (e.g., state, county, department) where the crop is grown. A regional estimate must be based on a study that is representative of the production system of this crop supply, based on production data not older than 3 years before the harvest date of this supply, and published in a publicly available document.

Calculate B2 and B4 as the mass of your crop supply for which you were able to obtain primary data, divided by the total mass of your crop supply, then multiply by 100. If you have reported a regional estimate for B1 and B3, then report 0% for B2 and B4.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

To calculate N use intensity and P surplus, use one of the tools listed below or farm management software. If not using one of these tools, base your calculations on the "Nitrogen Use" metric and "Phosphorus Use" metric guidelines given by the Stewardship Index for Specialty Crops (SISC), listed in the Background Information.

Certifications, Standards & Tools

Stewardship Index for Specialty Crops Calculator: This calculator calculates yield, energy use, nitrogen application, phosphorus surplus, and irrigation water use for US specialty crop farms. The tool provides an output per crop that needs to be aggregated for all feed crops to answer this question.
http://www.stewardshipindex.org/metric_calculator.php

TSC Respondent Tools: The Sustainability Consortium has produced a set of tools to help companies respond to

KPIs including spreadsheet versions of the Category Sustainability Profiles and data collection and calculation templates for select KPIs. Visit the link below to request access to these tools free of charge.
http://www.sustainabilityconsortium.org/respondenttools

Background Information

GLOBALG.A.P.: GLOBALG.A.P. offers farm management certification for crops (fruits and vegetables, flowers and ornamentals, combinable crops, green coffee, and tea); livestock (cattle and sheep, dairy, calf and young beef, pigs, poultry, and turkey); aquaculture; chain of custody; plant propagation material; compound feed manufacturing; and livestock transport. The program also includes a risk assessment for worker health, safety, and welfare, as well as criteria for animal welfare and food safety.
http://www.globalgap.org/uk_en/

Stewardship Index for Specialty Crops (SISC): SISC provides guidance for calculating irrigation water use, energy use, nitrogen use, phosphorus surplus, and soil organic matter on U.S. specialty crop farms.
http://www.stewardshipindex.org/metrics.php

Sustainable Agriculture Initiative-Sustainable Performance Assessment (SAI-SPA): The Sustainable Agriculture Initiative provides fact sheets and guidelines for sustainable agriculture assessment including metrics.
http://www.saiplatform.org/activities/alias/SPA

UTZ Certified: UTZ Certified is a sustainable farming program for coffee, cocoa, tea, and hazelnut farms and businesses. The UTZ program focuses on sustainable farming techniques, safe working conditions, environmental protection, and elimination of child labor. UTZ-certified farms must meet strict requirements and are subject to monitoring by third parties.
https://www.utzcertified.org/

Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products: This publication provides information on agricultural commodity weights and measures.
http://www.ers.usda.gov/media/935958/ah697_002.pdf

Definitions

Fertilizer: Any material of natural or synthetic origin that is applied to soils or to plant tissues (usually leaves) to supply one or more plant nutrients essential to the growth of plants.

Organic fertilizers: Fertilizers derived from animal or vegetable matter. Examples include peat, animal waste (manure or other wastes), plant waste from agriculture, and sewage sludge.

Synthetic fertilizers: Fertilizers produced by chemical synthesis from inorganic starting materials.

Hotspots Addressed

***4.** Fertilizer application - On-farm*

6. GREENHOUSE GAS EMISSIONS INTENSITY - ON-FARM

Question

What was the greenhouse gas emissions intensity associated with the farming operations that produced your crop supply?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following for our crop supply:

B1._____ kg CO2e per metric tonne of crop harvested.

B2._____% of our crop supply, by mass, is represented by the number reported above.

Guidance

Calculation & Scope

Calculate B1 as the average of the most recent greenhouse gas (GHG) emissions intensity estimates for the farms that produced your crop supply, weighted by the mass of crop supplied by each farm. For each farm, calculate GHG emissions intensity as the mass of all GHGs emitted, divided by the mass of crop harvested. Include the crop grown between the end of the harvest of the previous crop through the harvest of the crop that produced your supply.

For conversion purposes, 1 lb = 0.454 kg and 1 short ton = 0.907 metric tonnes. To convert bushels from volume to weight, see the USDA Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products, listed in the Background Information.

If primary farm data are unavailable for any of your supply, you may use a regional estimate to answer B1. Do not combine primary data and regional estimates. To answer B1 using regional estimates, you should only use estimates from a sub-country area such as an agricultural zone or region, eco-region, or geo-political boundary (e.g., state, county, department) where the crop is grown. A regional estimate must be based on a study that is representative of the production system of this crop supply, based on production data not older than 3 years before the harvest date of this supply, and published in a publicly available document.

Calculate B2 as the mass of your crop supply for which you were able to obtain primary data, divided by the total mass of your crop supply, then multiply by 100. If you have reported a regional estimate for B1, then report 0% for B2.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

To calculate GHG emissions intensity, use one of the tools listed below. If using the Cool Farm Tool, include energy use for field operations; any on-farm processing, cooling, and storage of the crop; and transportation of the crop to the first point of sale in your calculations. If not using one of these tools, base your calculations on the guidelines given in the Sustainable Agriculture Initiative-Sustainable Performance Assessment or in PAS2050:2011, listed in the Background Information.

Certifications, Standards & Tools

Cool Farm Tool: This calculator is available globally and calculates greenhouse gas emissions associated with farms, processing facilities, and transportation for many agriculture and livestock products.
http://www.coolfarmtool.org/CoolFarmTool

TSC Respondent Tools: The Sustainability Consortium has produced a set of tools to help companies respond to KPIs including spreadsheet versions of the Category Sustainability Profiles and data collection and calculation templates for select KPIs. Visit the link below to request access to these tools free of charge.
http://www.sustainabilityconsortium.org/respondenttools

Background Information

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http://www.globalgap.org/uk_en/

PAS 2050:2011: According to BSI, "PAS 2050:2011 is a publicly available specification (PAS) providing a method for assessing the life cycle greenhouse gas (GHG) emissions of goods and services (jointly referred to as "products")."
http://shop.bsigroup.com/en/Browse-By-Subject/Environmental-Management-and-Sustainability/PAS-2050/

Sustainable Agriculture Initiative-Sustainable Performance Assessment (SAI-SPA): The Sustainable Agriculture Initiative provides fact sheets and guidelines for sustainable agriculture assessment including metrics.
http://www.saiplatform.org/activities/alias/SPA

UTZ Certified: UTZ Certified is a sustainable farming program for coffee, cocoa, tea, and hazelnut farms and businesses. The UTZ program focuses on sustainable farming techniques, safe working conditions, environmental protection, and elimination of child labor. UTZ-certified farms must meet strict requirements and are subject to monitoring by third parties.
https://www.utzcertified.org/

Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products: This publication provides information on agricultural commodity weights and measures.
http://www.ers.usda.gov/media/935958/ah697_002.pdf

Definitions

CO2e: Carbon dioxide equivalent; a metric that expresses the impact of a greenhouse gas in terms of the amount of carbon dioxide (CO2) that has the same global warming potential.

Farming operation: An area of land and its buildings, comprised of one or more locations managed together that is used for growing crops that are delivered for further processing or as ingredients to other final products.

Greenhouse gas: Gases that contribute to the greenhouse effect by absorbing infrared radiation in the atmosphere, e.g., carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbons.

Hotspots Addressed

3. *Energy consumption - On-farm*

4. *Fertilizer application - On-farm*

7. IRRIGATION WATER USE INTENSITY - ON-FARM

Question

What was the irrigation water use intensity associated with the farming operations that produced your crop supply?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following for our crop supply:

B1._____ cubic meters of irrigation water use per metric tonne of crop harvested.

B2._____% of our crop supply, by mass, is represented by the number reported above.

Guidance

Calculation & Scope

Calculate B1 as the average of the most recent irrigation water use intensity estimates for the farms that produced your crop supply, weighted by the mass of crop supplied by each farm. For each farm, calculate irrigation water use intensity as the volume of irrigation water applied, divided by the mass of crop harvested. Include the crop grown between the end of the harvest of the previous crop through the harvest of the crop that produced your supply. Methods of obtaining irrigation water use data include, but are not limited to, flow meters, measurements with rain gauges, estimates based on the effective precipitation rate of the sprinklers used, irrigation district reporting, pressurized pipes, or extrapolation from power records.

For conversion purposes, 1 U.S. acre-inch = 102.8 cubic meters or 10.3 hectare-mm, 1 gallon = 0.0038 cubic meters, and 1 short ton = 0.907 metric tonnes. To convert bushels from volume to weight, see the USDA Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products, listed in the Background Information.

If primary farm data are unavailable for any of your supply, you may use a regional estimate to answer B1. Do not combine primary data and regional estimates. To answer B1 using regional estimates, you should only use estimates from a sub-country area such as an agricultural zone or region, eco-region, or geo-political boundary (e.g., state, county, department) where the crop is grown. A regional estimate must be based on a study that is representative of the production system of this crop supply, based on production data not older than 3 years before the harvest date of this supply, and published in a publicly available document.

Calculate B2 as the mass of your crop supply for which you were able to obtain primary data, divided by the total mass of your crop supply, then multiply by 100. If you have reported a regional estimate for B1, then report 0% for B2.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

Irrigation water use intensity can be calculated directly from farm data. The data may also be entered into the tools listed below. If not using these tools, base your calculations on the "Applied Water Use Efficiency" metric guidelines given by the Stewardship Index for Specialty Crops (SISC), listed in the Background Information.

Certifications, Standards & Tools

Stewardship Index for Specialty Crops Calculator: This calculator calculates yield, energy use, nitrogen application, phosphorus surplus, and irrigation water use for US specialty crop farms. The tool provides an output per crop that needs to be aggregated for all feed crops to answer this question.
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http://www.globalgap.org/uk_en/

Stewardship Index for Specialty Crops (SISC): SISC provides guidance for calculating irrigation water use, energy use, nitrogen use, phosphorus surplus, and soil organic matter on U.S. specialty crop farms.
http://www.stewardshipindex.org/metrics.php

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https://www.utzcertified.org/

Water Footprint Network: Waterfootprint.org provides various tools, assessments, and information regarding water consumption accounting.
www.waterfootprint.org

Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products: This publication provides information on agricultural commodity weights and measures.
http://www.ers.usda.gov/media/935958/ah697_002.pdf

WRI - World Resources Institute - Aqueduct Measuring and Mapping Water Risk: WRI created the global water risk mapping tool, Aqueduct, which used 12 indicators to map where and how water risks and opportunities occur globally.
http://www.wri.org/our-work/project/aqueduct

Definitions

Farming operation: An area of land and its buildings, comprised of one or more locations managed together that is used for growing crops that are delivered for further processing or as ingredients to other final products.

Irrigation water use: Total withdrawals from municipal and private water providers, surface water, groundwater, or wells for purposes of crop irrigation. Collected rainwater is not included.

Hotspots Addressed

***8.** Water use - On-farm*

8. LABOR RIGHTS - ON-FARM

Question

What are the outcomes of your risk assessments, conducted against a labor standard, that were performed on the farming operations that produced your crop supply?

Response Options

A. We are unable to determine at this time.

B. The following percentages, by mass, represent the outcomes of our risk assessment(s):

B1._____% of our crop supply came from low-risk countries with corrective actions taken for any known high-risk sites.

B2._____% of our crop supply came from high-risk countries that have high-risk sites for which we took corrective actions.

B3._____% of our crop supply came from high-risk countries, but an audit determined the site risk to be low.

Guidance

Calculation & Scope

To determine if a country is low-risk or high-risk labor rights violations for B1, utilize a country risk analysis tool. The tool should measure the strength of a country's ability to govern and enforce laws, regulations, and internationally recognized principles. This assessment may be a first party systematic review assessment, or external risk analyses tools may be utilized. It must be conducted at least once per year.

On-site risk assessments and audits, where necessary, can be conducted by second or third parties and must have been conducted at least once every two years using a standard based on internationally recognized principles. The assessments, audits, and standard must be verifiable and must address freedom of association & collective bargaining, forced & child labor, fair income, and equality of opportunity & treatment, as outlined by the United Nations Global Compact or the International Labour Organization Declaration on Fundamental Principles and Rights at Work. Where freedom of association & collective bargaining are restricted by law, employers can use other forms of non-union employee representation and relations to respect this aspect of workers' rights.

Calculate B1 as the mass of the crop supply that came from low-risk countries with corrective actions taken for any known high-risk sites, divided by the total mass of the crop supply, then multiply by 100.

Calculate B2 as the mass of the crop supply that came from high-risk countries that have high-risk sites for which you took corrective actions, divided by the total mass of the crop supply, then multiply by 100.

Calculate B3 as the mass of the crop supply that came from high-risk countries, but an audit determined the site risk to be low, divided by the total mass of the crop supply, then multiply by 100.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

The sum of B1, B2, and B3 must not exceed 100%.

The Business Social Compliance Initiative Countries' Risk Classification tool listed below may be used to inform your response for B1.

The standards and websites listed in Background Information below may be helpful for conducting your on-site risk assessment(s) and for understanding appropriate corrective actions, which can inform your response for B2.

The certifications listed below may be used to calculate your response for B3.

Other standards, certifications, and tools may also be applicable.

Certifications, Standards & Tools

Business Social Compliance Initiative Countries' Risk Classification: This list classifies countries' risk of social injustice in an effort to assist companies in determining high and low risk for their sourcing and operations.
http://www.bsci-intl.org/news/bsci-supports-improved-working-conditions-risk-classification-list

C.A.F.E. Practices: The Coffee and Farmer Equity (C.A.F.E.) Practices represent a standard by which coffee suppliers can be evaluated against economic, environmental, and social criteria.
http://globalassets.starbucks.com/assets/4a67ce15e63b4ea18461ff65a540feb3.pdf

Fairtrade International Certification: Fairtrade International provides standards and a certification through FLOCERT.
http://www.fairtrade.net/certifying-fairtrade.html

Rainforest Alliance - Agriculture Certification: Rainforest Alliance has two certifications: farm and chain of custody. Rainforest Alliance Certified Farms have met rigorous social and environmental standards set by the Sustainable Agriculture Network (SAN). The SAN/RA Chain-of-Custody certification program supports the traceability of products from farm to package.
http://www.rainforest-alliance.org/agriculture/certification

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http://www.sustainabilityconsortium.org/respondenttools

UTZ Certified: UTZ Certified is a sustainable farming program for coffee, cocoa, tea, and hazelnut farms and businesses. The UTZ program focuses on sustainable farming techniques, safe working conditions, environmental protection, and elimination of child labor. UTZ-certified farms must meet strict requirements and are subject to monitoring by third parties.
https://www.utzcertified.org/

Background Information

Social Accountability International SA8000 Standard: SA8000 is a human rights standard that can be used for audits of workplaces across industries. It is based on principles developed by the United Nations Declaration on Human Rights and the Conventions of the International Labour Organization.
http://www.sa-intl.org/index.cfm?fuseaction=Page.ViewPage&pageId=937

United Nations Global Compact Human Rights and Business Dilemmas Forum: United Nations Global Compact Human Rights and Business Dilemmas Forum present an introduction to, analysis of, and business recommendations for minimizing social sustainability risks in the supply chain.
http://human-rights.unglobalcompact.org/

Definitions

Corrective actions: Prompt actions taken to eliminate the causes of a problem, thus preventing their recurrence.

Farming operation: An area of land and its buildings, comprised of one or more locations managed together that is used for growing crops that are delivered for further processing or as ingredients to other final products.

First party systematic risk assessment: A risk assessment conducted by the reporting organization for management review and other internal purposes, and may form the basis for an organization's declaration of conformity.

Internationally recognized labor principles: Internationally recognized labor principles include the United Nations Global Compact and International Labour Organization Declaration on Fundamental Principles and Rights at Work or equivalent.

Risk assessment: A systematic process to evaluate potential risks within an operation, system, or supply chain. It can include an on-site audit by a second party or third party or a country risk classification analysis that judges the site risk due to prevailing conditions, controls, or other mitigating factors.

Second-party audit: An audit conducted by a party having an interest in the organization, such as customers, or by another entity on their behalf.

Third-party audit: An audit conducted by external, independent auditing organizations, such as those providing certification of conformity to a standard.

Verifiable: Having the ability to demonstrate, through a reputable assessor, the truth or accuracy of a claim.

Hotspots Addressed

***5.** Labor rights - On-farm*

9. WORKER HEALTH AND SAFETY - ON-FARM

Question

What are the outcomes of your verifiable worker health and safety risk assessments performed on the farming operations that produced your crop supply?

Response Options

A. We are unable to determine at this time.

B. The following percentages, by mass, represent the outcomes of our risk assessment(s):

B1._____% of our crop supply came from low-risk countries with corrective actions taken for any known high-risk sites.

B2._____% of our crop supply came from high-risk countries that have high-risk sites for which we took corrective actions.

B3._____% of our crop supply came from high-risk countries, but an audit determined the site risk to be low.

Guidance

Calculation & Scope

To determine if a country is low-risk or high-risk for worker health and safety violations for B1, utilize a country risk analysis tool. The tool should measure the strength of a country's ability to govern and enforce laws, regulations, and internationally recognized principles. This assessment may be a first party systematic review assessment, or external risk analyses tools may be utilized. It must be conducted at least once per year.

On-site risk assessments and audits, where necessary, can be conducted by second or third parties and must have been conducted at least once every two years using a standard based on internationally recognized principles. The assessments, audits, and standard must be verifiable and must address worker injury and worker exposure to harmful elements, and must align with applicable International Labour Organization Occupational Safety and Health Conventions (e.g., No. 155).

Calculate B1 as the mass of crop supply used in your final product that came from low-risk countries with corrective actions taken for any known high-risk sites, divided by the total mass of crop supply used in your final product, then multiply by 100.

Calculate B2 as the mass of crop supply used in your final product that came from high-risk countries that have high-risk sites for which you took corrective actions, divided by the total mass of crop supply used in your final product, then multiply by 100.

Calculate B3 as the mass of crop supply used in your final product that came from high-risk countries, but an audit determined the site risk to be low, divided by the total mass of crop supply used in your final product, then multiply by 100.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

The sum of B1, B2, and B3 must not exceed 100%.

The Business Social Compliance Initiative Countries' Risk Classification tool listed below may be used to inform your response for B1.

The percentage of your crop supply that is Fairtrade Certified may be included in your response for B1 or B3, depending on the level of country risk.

The standards and websites listed in Background Information below may be helpful for conducting your on-site risk assessment(s) and for understanding appropriate corrective actions, which can inform your response for B2.

The certifications listed below may be used to calculate your response for B3.

Other standards, certifications, and tools may also be applicable.

Certifications, Standards & Tools

Business Social Compliance Initiative Countries' Risk Classification: This list classifies countries' risk of social injustice in an effort to assist companies in determining high and low risk for their sourcing and operations. http://www.bsci-intl.org/news/bsci-supports-improved-working-conditions-risk-classification-list

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https://www.utzcertified.org/

Background Information

Social Accountability International SA8000 Standard: SA8000 is a human rights standard that can be used for audits of workplaces across industries. It is based on principles developed by the United Nations Declaration on Human Rights and the Conventions of the International Labour Organization.
http://www.sa-intl.org/index.cfm?fuseaction=Page.ViewPage&pageId=937

United Nations Global Compact Human Rights and Business Dilemmas Forum: United Nations Global Compact Human Rights and Business Dilemmas Forum present an introduction to, analysis of, and business recommendations for minimizing social sustainability risks in the supply chain.
http://human-rights.unglobalcompact.org/

Definitions

Corrective actions: Prompt actions taken to eliminate the causes of a problem, thus preventing their recurrence.

Farming operation: An area of land and its buildings, comprised of one or more locations managed together that is used for growing crops that are delivered for further processing or as ingredients to other final products.

First party systematic risk assessment: A risk assessment conducted by the reporting organization for management review and other internal purposes, and may form the basis for an organization's declaration of conformity.

Risk assessment: A systematic process to evaluate potential risks within an operation, system, or supply chain. It can include an on-site audit by a second party or third party or a country risk classification analysis that judges the site risk due to prevailing conditions, controls, or other mitigating factors.

Second-party audit: An audit conducted by a party having an interest in the organization, such as customers, or by another entity on their behalf.

Third-party audit: An audit conducted by external, independent auditing organizations, such as those providing certification of conformity to a standard.

Verifiable: Having the ability to demonstrate, through a reputable assessor, the truth or accuracy of a claim.

Worker exposure to harmful elements: Contact with potentially harmful chemical, physical, or biological elements that occurs as a result of one's job-related activities. Examples include chronic interaction with chemicals, dusts, radiation, environmental elements, allergens, noise, and vibrations.

Worker health and safety: Worker health and safety consists of worker injury and worker exposure to harmful

	elements. Please see the corresponding terms. **Worker injury:** Physical damage to an individual due to a single act that causes immediate damage or repetitive acts that cause damage over time. Examples of causes of injury include repetitive motions, non-ergonomic motions, damage from use of tools and machinery, falls, and burns.
Hotspots Addressed	***9.*** *Worker health and safety - On-farm*

10. YIELD - ON-FARM

Question
What was the average yield of your crop supply from farming operations?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following for our crop supply:

B1._____ metric tonnes of crop supply harvested per hectare planted.

B2._____% of our crop supply, by mass, is represented by the number reported above.

Guidance

Calculation & Scope

Calculate B1 as the average of the most recent yield estimates from the farms that produced your crop supply, weighted by the mass of crop supplied by each farm. For each farm, calculate yield as the mass of crop harvested, divided by the hectares planted. If your current yield estimates are recorded as area planted per mass of crop harvested, take the inverse of each farm's metric and then calculate the average to report B1.

If primary farm data are unavailable for any of your supply, you may use a regional estimate to answer B1. Do not combine primary data and regional estimates. To answer B1 using regional estimates, you should only use estimates from a sub-country area such as an agricultural zone or region, eco-region, or geo-political boundary (e.g., state, county, department) where the crop is grown. A regional estimate must be based on a study that is representative of the production system of this crop supply, based on production data not older than 3 years before the harvest date of this supply, and published in a publicly available document.

Calculate B2 as the mass of your crop supply for which you were able to obtain primary data, divided by the total mass of your crop supply, then multiply by 100. If you have reported a regional estimate for B1, then report 0% for B2.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

Certifications, Standards & Tools

Stewardship Index for Specialty Crops Calculator: This calculator calculates yield, energy use, nitrogen application, phosphorus surplus, and irrigation water use for US specialty crop farms. The tool provides an output per crop that needs to be aggregated for all feed crops to answer this question.
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Stewardship Index for Specialty Crops (SISC): SISC provides guidance for calculating irrigation water use, energy use, nitrogen use, phosphorus surplus, and soil organic matter on U.S. specialty crop farms.
http://www.stewardshipindex.org/metrics.php

UTZ Certified: UTZ Certified is a sustainable farming program for coffee, cocoa, tea, and hazelnut farms and businesses. The UTZ program focuses on sustainable farming techniques, safe working conditions, environmental protection, and elimination of child labor. UTZ-certified farms must meet strict requirements and are subject to monitoring by third parties.
https://www.utzcertified.org/

Definitions	**Farming operation:** An area of land and its buildings, comprised of one or more locations managed together that is used for growing crops that are delivered for further processing or as ingredients to other final products.
Hotspots Addressed	***3.*** *Energy consumption - On-farm* ***6.*** *Land transformation - On-farm*

11. WORKER HEALTH AND SAFETY - PROCESSING

Question

What was the injury and illness rate at the company-owned or contract processing facilities that produced your final product?

Response Options

A. We are unable to determine at this time.

B. Our injury and illness rate was:

B1._____.

B2._____% of our product, by mass, is represented by the number reported above.

Guidance

Calculation & Scope

This question aligns with the United States Occupational Safety and Health Administration (OSHA) Injury and Illness rate. This rate can be normalized for global applicability.

Calculate B1 according to OSHA's injury and illness rate by multiplying the number of recordable injuries and illnesses by 200,000. Divide this number by the total employee hours worked to produce your final product. If multiple facilities manufacture the final product, the injury and illness rate will need to be adjusted using a weighted average based on each facility's percentage of total production. Include all employees at a facility that participate in the production of the final product. This includes both full-time and contracted employees.

Calculate B2 as the mass of your final product for which you were able to obtain data, divided by the total mass of your final product, then multiply by 100.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

TSC General Guidance document provides guidance to calculate the weighted average. See Background Information for access to this document.

The Incidence Rate Calculator and Comparison Tool is an online calculator that will compute your injury and illness rate. The OSHA Forms for Recording Work-Related Injuries and Illnesses provides forms and information for computing your facility injury and illness rate.

Certifications, Standards & Tools

Incidence Rate Calculator and Comparison Tool: This tool calculates the injury and illness incidence rate for employers.
http://data.bls.gov/iirc/

OSHA Forms for Recording Work-Related Injuries and Illnesses: This webpage contains information on how to record workplace injuries and illnesses and provides the worksheets needed to correctly do so.
https://www.osha.gov/recordkeeping/RKforms.html

TSC Respondent Tools: The Sustainability Consortium has produced a set of tools to help companies respond to KPIs including spreadsheet versions of the Category Sustainability Profiles and data collection and calculation templates for select KPIs. Visit the link below to request access to these tools free of charge.
http://www.sustainabilityconsortium.org/respondenttools

Background Information

How to Compute a Firm's Incidence Rate for Safety Management: This website from the U.S. Bureau of Labor Statistics provides in-depth guidance on computing injury and illness numbers.
http://www.bls.gov/iif/osheval.htm

Social Accountability International SA8000 Standard: SA8000 is a human rights standard that can be used for audits of workplaces across industries. It is based on principles developed by the United Nations Declaration on Human Rights and the Conventions of the International Labour Organization.
http://www.sa-intl.org/index.cfm?fuseaction=Page.ViewPage&pageId=937

TSC General Guidance for Key Performance Indicators: The General Guidance Document for Key Performance Indicators (KPI) provides essential guidance to complement the specific guidance provided for each KPI. TSC recommends reading this document before you begin your first questionnaire and revisiting it as often as

	necessary for clarification and additional information. https://www.sustainabilityconsortium.org/general-guidance-document/
Definitions	**Company-owned or contract manufacturing facilities:** Facilities responsible for manufacturing and assembly of final products, whether these facilities are internal or external to the respondent's organization. **Worker exposure to harmful elements:** Contact with potentially harmful chemical, physical, or biological elements that occurs as a result of one's job-related activities. Examples include chronic interaction with chemicals, dusts, radiation, environmental elements, allergens, noise, and vibrations. **Worker health and safety:** Worker health and safety consists of worker injury and worker exposure to harmful elements. Please see the corresponding terms. **Worker injury:** Physical damage to an individual due to a single act that causes immediate damage or repetitive acts that cause damage over time. Examples of causes of injury include repetitive motions, non-ergonomic motions, damage from use of tools and machinery, falls, and burns.
Hotspots Addressed	***10.*** *Worker health and safety - Manufacturing*

12. PACKAGING RAW MATERIAL SOURCING

Question

What percentage of the sales packaging used for your final products, by mass, was post-consumer recycled material and sustainably-sourced renewable virgin material?

Response Options

- **A.** Not applicable. We do not use sales packaging for our product.
- **B.** We are unable to determine at this time.
- **C.** The sales packaging used for our final products was:
  C1._____% post-consumer recycled material.
  C2._____% sustainably-sourced renewable virgin material.

Guidance

Calculation & Scope

The scope of this question is the product category's sales packaging, which is defined as packaging that leaves a store with the consumer. Include the transportation-related packaging for product that is shipped directly to an end consumer.

Calculate C1 as the mass of post-consumer recycled material in the sales packaging of your final products, divided by the total mass of sales packaging used for your final products, then multiply by 100. This excludes pre-consumer recycled materials.

Calculate C2 as the mass of sustainably-sourced renewable virgin material in the sales packaging of your final products, divided by the total mass of sales packaging used for your final products, then multiply by 100. To be included in C2, the material must be third-party verified (e.g. for paper-based packaging FSC, SFI, PEFC would be examples of certifications for verification).

If data on packaging materials specific to these final products is not available, you may use more aggregated internal data to calculate C1 and C2 (e.g., company-level data for sales packaging of similar products).

The sum of C1 and C2 cannot be greater than 100%.

Please refer to TSC Product Sustainability Toolkit for Packaging for more detailed packaging indicators.

Certifications, Standards & Tools

Global Protocol on Packaging Sustainability: The Global Protocol on Packaging Sustainability provides metrics and a framework for businesses on the relative sustainability of packaging.
http://www.theconsumergoodsforum.com/download-global-protocol-on-packaging-sustainability-gpps

ISO 18604:2013: ISO 18604:2013 (Packaging and the environment -- Material recycling) provides measurement standards for determining how recyclable a particular product is.
http://www.iso.org/iso/catalogue_detail.htm?csnumber=55872

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http://www.sustainabilityconsortium.org/respondenttools

Background Information

FTC Green Guide's Recyclability Definition: In the United States, the Federal Trade Commission defines when a product or packaging can be claimed recyclable. Please refer these guidelines when determining recyclability.
http://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguides.pdf

How2Recycle certification: This certification provides information on how recyclable different materials are in the U.S.
http://www.how2recycle.info/recyclability-reference/

Sustainable Packaging Coalition: Sustainable Packaging Indicators and Metrics Framework: The Sustainable Packaging Coalition's Sustainable Packaging Indicators and Metrics Framework Project is a common set of indicators and metrics for business regarding sustainable packaging.
http://www.sustainablepackaging.org/content/?type=5&id=sustainable-packaging-metrics

Definitions

Post-consumer recycled material: "Material generated by households or by commercial, industrial, and institutional facilities in their role as end-users of the product that can no longer be used for its intended purpose. This includes returns of materials from the distribution chain." (ISO 14021:2016 - Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling))

Pre-consumer recycled material: "Material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it." (ISO 14021:2016 - Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling))

Renewable material: "[M]aterial that is composed of biomass from a living source and that can be continually replenished. To be defined as renewable, virgin materials shall come from sources which are replenished at a rate equal to or greater than the rate of depletion." (FTC Green Guides:2012)

Sales packaging: "Packaging that leaves a store with the consumer". (Global Protocol on Packaging Sustainability 2.0:2011)

Sustainably-sourced material: Material for which it can be demonstrated through second- or third-party verification that the virgin raw material has been harvested or produced legally and in a way that minimizes damage to the environment, workers, and communities. Materials such as paper can be included in this definition if the source of the packaging content comes from sustainably-managed forests with no deforestation.

Hotspots Addressed

11. *Energy consumption - Packaging production*

13. SUSTAINABLE PACKAGING DESIGN AND PRODUCTION

Question

What percentage of the sales packaging for your final products, by mass, was recyclable, was formally assessed for material and process efficiency and weight or volume optimization, and for which quantified environmental impact reduction can be demonstrated?

Response Options

- **A.** Not applicable. We do not use sales packaging for our product.
- **B.** We are unable to determine at this time.
- **C.** We are able to report the following for the sales packaging used for our final products:
  - **C1.**_____% of our packaging, by mass, was recyclable.
  - **C2.**_____ % of our packaging, by mass, has demonstrated progress on goals for material and process efficiency during packaging manufacturing.
  - **C3.**_____ % of our packaging, by mass, has demonstrated progress on goals for weight or volume optimization during packaging design.
  - **C4.**_____ % of our packaging, by mass, has a demonstrated quantified environmental impact reduction.

Guidance

Calculation & Scope

Calculate C1 as the mass of sales packaging used for your final products that was recyclable, divided by the total mass of sales packaging used for your final products, then multiply by 100.

Calculate C2 as the mass of sales packaging used for your final products that has demonstrated progress on goals for material and process efficiency during packaging manufacturing, divided by the total mass of sales packaging used for your final products, then multiply by 100.

Calculate C3 as the mass of sales packaging used for your final products that has demonstrated progress on goals for weight or volume optimization during packaging design, divided by the total mass of sales packaging used for your final products, then multiply by 100.

Goals must be quantitative and time-bound and progress must be reported publicly. Public reporting may include voluntary corporate reporting, sustainability reporting programs, or reporting as part of regulatory compliance.

Calculate C4 as the mass of sales packaging used for your final products that has demonstrated quantified environmental impact reductions, divided by the total mass sales packaging used for your final products, then multiply by 100. Include sales packaging with demonstrated impact reductions since the inception of the product or since purchase of the brand, if post-inception.

Methods for demonstrating quantified environmental impact reduction include, but are not limited to, life cycle impact assessment, or assessment against ISO Standard 18602:2013 (Packaging and the environment -- Optimization of the packaging system), or EN 13428:2004 (Packaging: Requirements specific to manufacturing and composition - Prevention by source reduction).

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

Certifications, Standards & Tools

EN 13428: Prevention by packaging source reduction: European standard 13428:2004 outlines a method for evaluating if packaging material weight and/or volume have been sufficiently minimized while also taking into consideration other packaging performance parameters. The standard also includes recommended methodology for identifying heavy metals and dangerous substances in packaging formats.
http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/packaging/index_en.htm

ISO 18602:2013: ISO 18602 provides criteria for optimization of packaging systems. It outlines a procedure for reduction of packaging material weight or volume while taking into consideration packaging function. It also provides assessment methodology for substances hazardous to the environment and heavy metals.
http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=55870

TSC Respondent Tools: The Sustainability Consortium has produced a set of tools to help companies respond to KPIs including spreadsheet versions of the Category Sustainability Profiles and data collection and calculation

templates for select KPIs. Visit the link below to request access to these tools free of charge.
http://www.sustainabilityconsortium.org/respondenttools

Definitions

Goals: Goals should be specific, measurable, achievable, relevant, and time-bound.

Material and process efficiency: Material efficiency is the ratio between the material input and the benefits derived. Resource conservation (source reduction) of material inputs and/or improving the functionality of the packaging can positively impact material efficiency. Process efficiency is the ratio between the time spent on production steps to the output. Opportunities to improve material and process efficiency include process improvement, product redesign, and technology changes to packaging equipment. It should be noted that continual source reduction has benefits, but there are trade-offs that must be assessed.

Sales packaging: "Packaging that leaves a store with the consumer". (Global Protocol on Packaging Sustainability 2.0:2011)

Weight or volume optimization: "Process for the achievement of a minimum adequate weight or volume (source reduction) for meeting the necessary requirements of primary or secondary or transport packaging, when performance and user/consumer acceptability remain unchanged or adequate, thereby reducing the impact on the environment." (ISO 18601:2013 - Packaging and the environment--General requirements for the use of ISO standards in the field of packaging and the environment)

Hotspots Addressed

11. *Energy consumption - Packaging production*

14. TRANSPORTATION TO RETAILERS

Question

What percentage of your final product was transported to downstream retail or distribution centers by logistics providers (carriers) that reported their annual greenhouse gas (GHG) emissions associated with transportation?

Response Options

- **A.** We are unable to determine at this time.
- **B.** The following percentage of our product, by mass, was shipped to retail or distribution centers by carriers who reported their GHG emissions associated with transportation:
  B1._____%.

Guidance

Calculation & Scope

Include shipments of your product from final manufacturing facilities to downstream retailers or distributors. Include both company-owned and contracted fleet. Exclude data for return trips.

Calculate B1 as the mass of product transported by carriers that reported emissions, divided by total mass of product transported, then multiply by 100.

Reporting can occur through public disclosure or private disclosure from the supplier to your organization directly or through another party.

Perform this calculation using data from a 12-month period that ended within 12 months of the date you respond to this question.

If a supplier responded to the most recent CDP Climate Change Information Request, you may count that as compliance with this question. Examples of other compliant standards are provided in the Certifications, Standards, & Tools section below.

Certifications, Standards & Tools

BSR Clean Cargo Working Group tool: According to the BsR website, "The Clean Cargo Working Group is a global business-to-business initiative" that asks nonmembers to "join CCWG in creating and using practical tools for measuring, evaluating and reporting environmental impacts of global goods transportation."
http://www.bsr.org/en/our-work/working-groups/clean-cargo

CDP Climate Change Information Request: The CDP Climate Change Information Request provides questions that assess a company's water use, goals, and management. The report provided by CDP provides the overview of the results from companies responding to the request. CDP can be contacted to respond to the Climate Information Request.
https://www.cdp.net/en/research/global-reports/tracking-climate-progress-2016

Clean Shipping Index: According to their website, "Clean Shipping Index is a tool for cargo owners to select clean ships and quality ship operators" to minimize environmental footprint and identify areas for environmental improvement.
http://www.cleanshippingindex.com/

Ecotransit: EcotransIT World calculates and quantifies environmental impacts of different carriers across the world in terms of direct energy usage and emissions during the operation of vehicles during the transport of products.
http://www.ecotransit.org/

EN 16258:2012: The European Committee for Standardization's EN 16258:2012 standard deals with the methodology for calculation and reporting of energy consumption and greenhouse gas (GHG) emissions of freight and passenger transport services.
http://shop.bsigroup.com/ProductDetail/?pid=000000000030241098

GreenFreight Europe: GreenFreight Europe is an independent voluntary program for improving the environmental performance of road freight transport in Europe. It provides a platform "to calculate, validate and benchmark the environmental performance of transport operations" of shippers and carriers.
http://www.greenfreighteurope.eu/

IATA Green Cargo Initiative: According to the IATA website, they "have developed a 4-pillar strategy to reduce

	aviation carbon emissions: investing in technology, improving operational efficiency, building and using efficient infrastructure and providing incentives through positive economic instrument." http://www.iata.org/whatwedo/cargo/sustainability/Pages/green.aspx **TSC Respondent Tools:** The Sustainability Consortium has produced a set of tools to help companies respond to KPIs including spreadsheet versions of the Category Sustainability Profiles and data collection and calculation templates for select KPIs. Visit the link below to request access to these tools free of charge. http://www.sustainabilityconsortium.org/respondenttools **United States Environmental Protection Agency (EPA): Transportation and Air Quality: SmartWay:** This program provides information about how to improve fuel efficiency in trucking. Carriers can use the SmartWay carbon emission calculator to track and publicly report emissions associated with their trucking operations. http://www.epa.gov/smartway/
Background Information	**Greenhouse Gas Protocol: Calculation Tools:** This site provides a list of sector toolsets developed by GHG Protocol, third-party databases, and other tools based on the GHG Protocol standards that can be used to calculate greenhouse gas inventories for use in emissions calculations. http://www.ghgprotocol.org/calculation-tools
Definitions	**CO2e:** Carbon dioxide equivalent; a metric that expresses the impact of a greenhouse gas in terms of the amount of carbon dioxide (CO2) that has the same global warming potential. **Greenhouse gas:** Gases that contribute to the greenhouse effect by absorbing infrared radiation in the atmosphere, e.g., carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbons.
Hotspots Addressed	***12.*** *Fuel combustion - Distribution*

Hotspots

Hotspots are activities in a product's life cycle that have a documented environmental or social impact. TSC evaluates the quality and quantity of the scientific sources of evidence for each hotspot according to a defined decision tree before they are included in the CSP. Items marked with an asterisk (*) are *additional issues* that have not achieved the same level of evidence as a hotspot. For more information on the methodology TSC uses to identify hotspots visit: http://www.sustainabilityconsortium.org/toolkit-methodology

AGRICULTURE AND LIVESTOCK

1. **Access to opportunities for smallholder farmers - On-farm**
Smallholder farmers face a number of challenges that impact their ability to maintain farming operations. These challenges include access to agricultural inputs, banking services, farming information, and markets. Female smallholders are at an increased risk of facing these challenges.

   Related Improvement Opportunities

   1. *Encourage producer cooperative groups*
   2. *Encourage the use of mobile phones to provide information and services to smallholder farmers*
   7. *Partner with civil society organizations to link smallholder farmers to suppliers and buyers*

   KPIs

   2. *Access to Opportunities for Smallholder Farmers*

   References

   - Bijman, Ton, & Meijerink, 2007
   - Eakin, Tucker, & Castellanos, 2006
   - Ezumah & Di Domenico, 1995
   - Foltz, 2004
   - IFAD, 2010
   - International Fund for Agricultural Development, 2013
   - Kelly, Adesina, & Gordon, 2003
   - Maertens & Swinnen, 2012
   - Markelova & Mwangi, 2010
   - Markelova, Meinzen-Dick, Hellin, & Dohrn, 2009
   - Ogunlela & Mukhtar, 2009
   - Oxfam International, 2002
   - Shiferaw, Hellin & Muricho, 2011
   - Ton, 2008
   - Verhart & Pyburn, 2010

2. **Child labor use - On-farm**
School-age children may be working on coffee plantations for little or no pay, and may be losing opportunities for an education, leading to lifelong poverty. The United States Department of Labor has identified child labor in the production of coffee in several countries.

   Related Improvement Opportunities

   17. *Develop a child labor and forced labor social compliance program*
   21. *Implement programs, practices, and technologies to prevent and end the worst forms of child labor*
   22. *Utilize a child labor monitoring system (CLM)*

   KPIs

   3. *Child Labor Use - On-farm*

   References

   - Edmonds, 2007
   - Edmonds & Pavcnik, 2005
   - Hurst, 2007
   - U.S. Department of Labor Bureau of International Labor Affairs, 2012
   - Verite, 2012b

3. **Energy consumption - On-farm**
Energy use on-farm may include equipment, irrigation pumps, and machine use and contributes to greenhouse gas and acidifying emissions, and non-renewable resource depletion.

   Related Improvement Opportunities

   3. *Implement energy conservation practices for farm vehicle operation*
   4. *Implement precision agriculture technologies*

   KPIs

   6. *Greenhouse Gas Emissions Intensity - On-farm*
   10. *Yield - On-farm*

   References

   - Humbert, Loerincik, Rossi, Margni, & Jolliet, 2009
   - Quantis Suisse, 2011

4. Fertilizer application - On-farm Applied fertilizers, both synthetic and organic, release greenhouse gas, smog-forming, ozone-depleting and acidifying emissions and contribute to water quality impacts. Eutrophication is caused by nutrients in surface water runoff, and groundwater contamination occurs due to leaching of nitrate. Also, heavy metals in fertilizers contribute to soil, water, and human toxicity. **Related Improvement Opportunities** ***4.*** *Implement precision agriculture technologies* ***10.*** *Use buffer strips on-farm* **KPIs** ***5.*** *Fertilizer Application - On-farm* ***6.*** *Greenhouse Gas Emissions Intensity - On-farm*	**References** ▪ PCF, 2008 ▪ Quantis Suisse, 2011
5. Labor rights - On-farm* Workers are at risk of several labor rights challenges. These challenges include unfair pay, discrimination, challenges to join unions and collectively bargain, long working hours, and dangerous working conditions. Women and migrants are at an increased risk of facing these challenges. **Related Improvement Opportunities** ***16.*** *Allow workers to join unions or non-union employee representation (NER) programs* ***18.*** *Develop compensation policies and supplier guidance that consider the cost of living in the area of employment for farm laborers* ***20.*** *Implement labor management and equality monitoring programs* **KPIs** ***8.*** *Labor Rights - On-farm*	**References** ▪ Bacon, 2005 ▪ Slob, 2006 ▪ U.S. Department of Labor, 2013 ▪ Verite, 2012b
6. Land transformation - On-farm* Land transformation for agriculture leads to climate change from greenhouse gas emissions and to biodiversity loss from land clearing and habitat conversion. **Related Improvement Opportunities** ***8.*** *Perform a carbon risk assessment before land conversion for agriculture* ***9.*** *Use biostimulants* **KPIs** ***4.*** *Deforestation and Land Conversion - On-farm* ***10.*** *Yield - On-farm*	**References** ▪ Chavez Arce et al., 2009 ▪ Hylander, Nemomissa, Delrue, & Enkosa, 2013 ▪ Jensen & Dicks, 2012
7. Supply chain traceability Due to the complexity of supply chains, information about where the supply chain originates is limited. This makes it more difficult for companies to manage environmental and social impacts. **Related Improvement Opportunities** ***6.*** *Map the geographic origins of agricultural supply chains* **KPIs** ***1.*** *Crop Supply Mapping*	**References** ▪ Maloni & Brown, 2006 ▪ Roth, Tsay, Pullman, & Gray, 2008 ▪ Wagner & Bode, 2008

8. Water use - On-farm* Irrigation water usage can lead to freshwater depletion, as well as to biodiversity and ecosystem losses from altered aquatic habitats and soil conditions. Irrigation also facilitates run-off, leaching, and soil salinization when it is not properly managed. **Related Improvement Opportunities** ***19.** Evaluate the sustainability of water use in the context of local community and environmental water requirements* **KPIs** ***7.** Irrigation Water Use Intensity - On-farm*	**References** ▪ Humbert, Loerincik, Rossi, Margni, & Jolliet, 2009 ▪ Quantis Suisse, 2011
9. Worker health and safety - On-farm* Workers are at risk of several health and safety challenges associated with farm work. These challenges include injuries associated with tools and machinery, repetitive motions, as well as exposure to chemicals and dusts that may have adverse effects on their health. **Related Improvement Opportunities** ***5.** Implement worker health and safety programs on-farm* **KPIs** ***9.** Worker Health and Safety - On-farm*	**References** ▪ Benzaken Koosed, 2010 ▪ McCurdy & Carroll, 2000

MANUFACTURING AND ASSEMBLY

10. Worker health and safety - Manufacturing* Workers are at risk of several health and safety challenges associated with manufacturing occupations. These challenges include injuries associated with tools and machinery, repetitive motions, falls, and burns. Manufacturing workers are also at risk of exposure to loud noises, airborne particulates, and chemicals, which can have adverse effects on their health. **Related Improvement Opportunities** ***11.** Require appropriate use of personal protective equipment (PPE) at food and beverage processing* ***12.** Set measurable goals and objectives for minimizing work-related health and safety risks at food and beverage processing* **KPIs** ***11.** Worker Health and Safety - Processing*	**References** ▪ Sakwari, Braveit, Mamuya, & Moen, 2011 ▪ Zuskin, Skuric, Kanceljak, & Saric, 1988

PACKAGING

11. Energy consumption - Packaging production

Energy consumption for extracting and processing the raw materials that make up the packaging and for fabricating the packaging releases greenhouse gases and toxic emissions and contributes to fossil fuel resource depletion.

Related Improvement Opportunities

13. *Packaging design improvement*
14. *Packaging reduction*

KPIs

12. *Packaging Raw Material Sourcing*
13. *Sustainable Packaging Design and Production*

References

- Quantis Suisse, 2011

DISTRIBUTION

12. Fuel combustion - Distribution

Fuel combustion for distribution of product from manufacturing to retail releases greenhouse gases.

Related Improvement Opportunities

15. *Use software to optimize truck route design*
23. *Use pooled logistics during distribution*

KPIs

14. *Transportation to Retailers*

References

- Salinas, 2008
- Salomone, 2003

Improvement Opportunities

Improvement opportunities are practices that address one or more environmental or social hotspots and are actionable by brand manufacturers or their suppliers. TSC evaluates the quality of the evidence supporting each improvement opportunity according to a defined decision tree before including it in the CSP. For more information on the methodology TSC uses to identify hotspots visit: http://www.sustainabilityconsortium.org/toolkit-methodology

AGRICULTURE AND LIVESTOCK

1.	**Encourage producer cooperative groups** The issue of working capital to members needs to be resolved by the group willing to engage in collective marketing. Development of cooperation in access to working capital is crucial and logically related to the emergence of many of the new producer organizations in developing countries that effectively provide market access to smallholder farmers, inclusive to poorer strata of the population. **Related Hotspots** ***1.*** *Access to opportunities for smallholder farmers - On-farm*	**References** ▪ Ton, 2008
2.	**Encourage the use of mobile phones to provide information and services to smallholder farmers** Mobile phones are widely used throughout the developing world and have the capability of providing banking services as well as important information for farming including input costs, commodity prices, weather patterns, and best management practices. **Related Hotspots** ***1.*** *Access to opportunities for smallholder farmers - On-farm*	**References** ▪ Agri-fin Mobile, 2013 ▪ Torero, 2013
3.	**Implement energy conservation practices for farm vehicle operation** There are many practices that can help to conserve energy used by farm vehicles. Some practices include minimizing field passes by performing multiple operations at a time, maintaining proper ballast, using a tractor size that is suitable for each operation, shifting tractors to a higher gear and throttling down during field operations, minimizing driving tractors on the road, upgrading to more efficient models, minimizing idling, reducing excess weight on vehicles, and refraining from using quick start engines. **Related Hotspots** ***3.*** *Energy consumption - On-farm*	**References** ▪ California Farm Bureau Federation, 2014 ▪ NCAT, 2007
4.	**Implement precision agriculture technologies** Precision agriculture technologies can use field data, remote sensing, and global positioning systems (GPS) to control the variable rate and precise placement of fertilizers and crop protection chemicals. Precision agriculture can reduce on-farm energy consumption as well as the negative environmental and human health impacts that can be associated with fertilizer and crop protection chemical application. **Related Hotspots** ***3.*** *Energy consumption - On-farm* ***4.*** *Fertilizer application - On-farm*	**References** ▪ Bongiovanni and Lowenberg-DeBoer, 2004 ▪ Pierce and Nowak, 1999 ▪ Zhang et al., 2002

5. Implement worker health and safety programs on-farm Worker health and safety programs should address the appropriate ways to handle, use, and store pesticides and pesticide application equipment as well as educate workers about the risks associated with farm work and the practices that mitigate those risks. Practices should be specific to ergonomics, repetitive motions, chemical and particulate exposure, appropriate use of personal protective equipment (PPE), and proper use of tools and machinery. **Related Hotspots** ***9.*** *Worker health and safety - On-farm*	**References** ▪ International Finance Corporation, 2012a ▪ Meyer & Radwin, 2007
6. Map the geographic origins of agricultural supply chains Knowing the geographic origins of agricultural supply chains can inform planning and policy for the sustainable management of social and environmental farm practices. **Related Hotspots** ***7.*** *Supply chain traceability*	**References** ▪ Bryan, Barry & Marvanek, 2009 ▪ Maloni & Brown, 2006 ▪ Roth, Tsay, Pullman, & Gray, 2008 ▪ Scholten, Verdouw, Beulens, van der Vorst, & Santaclara, 2016 ▪ Wagner & Bode, 2008
7. Partner with civil society organizations to link smallholder farmers to suppliers and buyers Participate in or lead partnerships with civil society organizations that engage smallholder farmers. Doing so may enhance smallholder farmers' expertise, capacity, and production techniques, as well as increase their access to markets, which can increase supply chain security. **Related Hotspots** ***1.*** *Access to opportunities for smallholder farmers - On-farm*	**References** ▪ Markelova & Mwangi, 2010 ▪ Njuki, Kruger, & Starr, 2013
8. Perform a carbon risk assessment before land conversion for agriculture Identifying and avoiding conversion of high carbon forests and lands can inform decision-making and can help reduce greenhouse gas emissions that result from deforestation and land transformation. All soils store carbon, but peat soils store particularly high amounts of carbon. Therefore, conversion of peatlands should be particularly minimized. **Related Hotspots** ***6.*** *Land transformation - On-farm*	**References** ▪ Agus, Hairiah, & Mulyani, 2011 ▪ Climate Action Reserve, 2012 ▪ Golden Agri-Resources, 2012 ▪ Joosten, Tapio-Bistrom, & Tol, 2012
9. Use biostimulants Plant biostimulants enhance nutrient uptake, nutrient efficiency, tolerance to abiotic stress, and plant health, which can result in crop yield increases that help to reduce land transformation for agriculture. Examples of biostimulants include: plant growth-promoting rhizobacteria, humic substances, protein hydrolysates, seaweed extracts, botanicals, biopolymers, beneficial fungi, and beneficial bacteria. **Related Hotspots** ***6.*** *Land transformation - On-farm*	**References** ▪ du Jardin, 2015 ▪ Le Mire et al., 2016
10. Use buffer strips on-farm Forest riparian buffers, filter strips, field borders, contour buffer strips, wetlands, and other conservation buffer practices can help intercept, store, and utilize nutrients and other pollutant run-off to water bodies. **Related Hotspots** ***4.*** *Fertilizer application - On-farm*	**References** ▪ Osborne and Kovacic, 1993 ▪ Parkyn, 2004 ▪ USDA NRCS, 2009

MANUFACTURING AND ASSEMBLY

11. Require appropriate use of personal protective equipment (PPE) at food and beverage processing

Providing personal protective equipment (masks, gloves, protective clothing) may help to reduce exposure to hazardous chemicals, particulates, and noise where prevention interventions are ineffective. Providing slip-resistant footwear can reduce workplace injuries.

Related Hotspots

10. *Worker health and safety - Manufacturing*

References

- Cohen, Connon, & Silverstein, 2003

12. Set measurable goals and objectives for minimizing work-related health and safety risks at food and beverage processing

Develop metrics and benchmarks, and set goals to reduce specific injuries and exposures in the workplace.

Related Hotspots

10. *Worker health and safety - Manufacturing*

References

- Health and Safety Executive, 2005

PACKAGING

13. Packaging design improvement

For instant coffee, switch from glass jars to laminated pouch packaging systems.

Related Hotspots

11. *Energy consumption - Packaging production*

References

- Lockrey, 2012

14. Packaging reduction

Manufacturers can reduce excess packaging for instant coffee, and can package product in optimal sizes to reduce material waste.

Related Hotspots

11. *Energy consumption - Packaging production*

References

- Busser, Steiner, & Jungbluth, 2008

DISTRIBUTION

15. Use software to optimize truck route design

Route optimization has been proven to reduce fuel usage and subsequent emissions.

Related Hotspots

12. *Fuel combustion - Distribution*

References

- Scientific Logistics Institute, 2011
- Xiao, Zhao, Kaku, and Xu, 2012

IMPROVEMENT OPPORTUNITIES FOR MULTIPLE LIFE CYCLE STAGES

16. Allow workers to join unions or non-union employee representation (NER) programs Non-union employee representation (NER) programs are methods for providing aspects of freedom of association and collective bargaining to workers that may not have access to unions. NERs are alternative approaches to union certifications for employee/employer relations. They involve the implementation of non-adversarial and democratic representation of supply chain actors. Examples of NERs include compulsory proportional representation (CPR) and statutory works councils. **Related Hotspots** ***5.*** *Labor rights - On-farm*	**References** ▪ Harcourt & Lam, 2007
17. Develop a child labor and forced labor social compliance program A social compliance program is part of an organization's larger corporate responsibility program and is intended as a means of developing policies and practices based on widely-recognized standards with the goal of allowing for maximum adherence to codes of conduct. Social compliance programs have specific action steps that guide organizations from initial risk awareness to full compliance with policies. **Related Hotspots** ***2.*** *Child labor use - On-farm*	**References** ▪ United States Department of Labor, 2013 ▪ United States Department of Labor, 2012a
18. Develop compensation policies and supplier guidance that consider the cost of living in the area of employment for farm laborers Compensation policies may consider the expenses needed to provide for the basic level of consumption, as well as other costs of living. There are many models for determining a fair compensation for workers. Prominent models include living wage and family wage, which take into account many variables for the cost of living. Monitor actual wages against the chosen model. **Related Hotspots** ***5.*** *Labor rights - On-farm*	**References** ▪ Ethical Trading Initiative, 2008 ▪ International Labour Organization, 2011
19. Evaluate the sustainability of water use in the context of local community and environmental water requirements When planning developments, water availability and appropriation must be evaluated in the context of the water resources used by the surrounding community and in the context of the capacity of the surrounding ecosystems. **Related Hotspots** ***8.*** *Water use - On-farm*	**References** ▪ Aldaya et al., 2012 ▪ Minnesota Environmental Quality Board, 2008
20. Implement labor management and equality monitoring programs Employers should implement labor management and equality monitoring to prevent discrimination in their labor and hiring policies and procedures along the lines of race, color, gender, age, religion, social class, political tendencies, nationality, sexual orientation, or civil status. **Related Hotspots** ***5.*** *Labor rights - On-farm*	**References** ▪ SAN & SAI, 2010

21. Implement programs, practices, and technologies to prevent and end the worst forms of child labor Programs, practices, and technologies can be implemented to increase awareness of, and monitor for the worst forms of child labor in supply chains. Companies can also consider investing in local programs that increase access to education, as this has been shown to lead to a decrease in child labor. **Related Hotspots** ***2.*** *Child labor use - On-farm*	**References** ▪ Bureau of International Labor Affairs, 2011 ▪ Stop Child Labour, 2012 ▪ United States Department of Labor, 2013
22. Utilize a child labor monitoring system (CLM) A child labor monitoring system will support companies' efforts to prevent and eliminate the worst forms of child labor that occur in the supply chain. **Related Hotspots** ***2.*** *Child labor use - On-farm*	**References** ▪ International Labour Organization, 2005a ▪ International Labour Organization, 2007 ▪ Stop Child Labour, 2012
23. Use pooled logistics during distribution Using pooled logistics reduces the number of less than truckload (LTL) shipments, the distribution energy required per unit of product shipped, and allows for improved just-in-time (JIT) delivery of product, thereby reducing food waste during distribution and retail operations. **Related Hotspots** ***12.*** *Fuel combustion - Distribution*	**References** ▪ Humpl and Starkl, 2010 ▪ Wick, Klumpp, and Kandel, 2011

References

A Agr-fin Mobile. (2013). Mercy corps Agri-Fin Mobile product development and baseline research report-Indonesia. Mercy Corps. Retrieved from http://www.mercycorps.org/sites/default/files/indonesia_baseline_survey_and_product_development_report_-_abridged_2013.pdf

Agus, Hairiah, & Mulyani (2011). Measuring carbon stock in peat soils: Practical guidelines. Bogor, Indonesia: World Agroforestry Centre (ICRAF) Southeast Asia Regional Program, Indonesian Centre for Agricultural Land Resources Research and Development.

Aldaya, M. M., Chapagain, A. K., Hoekstra, A. Y., & Mekonnen, M. M. (2012). The water footprint assessment manual: Setting the global standard. Routledge.

B Bacon, C. (2005). Confronting the coffee crisis: Can fair trade, organic and specialty coffees reduce small-scale farmer vulnerability in northern Nicaragua? World Development, 33(3), 497-511.

Benzaken Koosed, T. (2010). Occupational health and safety system in Costa Rican coffee production. BSR.

Bijman, J. G. Ton, G. Meijerink. (2007). Empowering small holder farmers in Markets. National and International Policy Initiatives. Retrieved from http://www.esfim.org/wp-content/uploads/ESFIM_Working_Paper_1.pdf

Bongiovanni, R., & Lowenberg-DeBoer, J. (2004). Precision agriculture and sustainability. Precision Agriculture, 5(4), 359-387.

Bryan B.A., Barry S., & Marvanek S. (2009). Agricultural commodity mapping for land use change assessment and environmental management: an application in the Murray-Darling Basin, Australia, Journal of Land Use Science, 4:3, 131-155, DOI:10.1080/17474230802318722

Bureau of International Labor Affairs (2011). The United States Department of Labor's 2011 findings on the worst forms of child labor. Technical Report, U.S. Department of Labor. Retrieved from: http://www.dol.gov/ilab/reports/child-labor/findings/

Busser, S., Steiner, R., & Jungbluth, N. (2008). LCA of packed food products -- The function of flexible packaging -- Case study: Coffee. Uster, Switzerland: ESU-services, Ltd.

C California Farm Bureau Federation. (2014). Fuel efficiency on the farm. Retrieved from Issues and Regulations: http://www.cfbf.com/CFBF/Issues/Issue_and_Regulations/cfbf/Issues/Fuel_Efficiency_on_the_farm.aspx

Chavez Arce, V. J., Raudales, R., Trubey, R., King, D. I., Chandler, R. B., & Chandler, C. C. (2009). Measuring and managing the environmental cost of coffee production in Latin America. Conservation and Society, 7(2), 141-144.

Climate Action Reserve. (2012). Supplemental guidance - Updated guidance for accounting for soil carbon avoided conversion projects. Retrieved from http://www.climateactionreserve.org/wp-content/uploads/2009/03/Supplemental-Guidance-for-Soil-Carbon-Accounting-in-Avoided-Conversion-Projects2.pdf

Cohen, M., Connon, C., & Silverstein, B. (2003). Safety in the food processing industry. Professional Safety, 48(11), 20-30. Retrieved from http://www.highbeam.com/doc/1P3-463423071.html

D du Jardin, P. (2015). Plant biostimulants: definition, concept, main categories and regulation. Scientia Horticulturae, 196, 3-14.

E Eakin, H., Tucker, C., & Castellanlos, E. (2006). Responding to the coffee crisis: a pilot study of farmers' adaptions in Mexico, Guatemala, and Honduras. The Geographical Journal, 172(2) (June 2006). pp 156-171.

Edmonds, E. V. (2007). Child labor. Handbook of development economics, 4, 3607-3709.

Edmonds, E. V., & Pavcnik, N. (2005). Child labor in the global economy. The Journal of Economic Perspectives, 19(1), 199-220.

Ethical Trading Initiative. (2008). Living wage: Make it a reality. ETI Conference 2008, Workshop 5. Retrieved from http://www.ethicaltrade.org/sites/default/files/resources/ETI%20Conference%2008%20briefing%20paper%20%20Living%20wage.pdf

Ezumah, N. N., & Di Domenico, C. M. (1995). Enhancing the role of women in crop production: A case study of Igbo women in Nigeria. World Development, 23(10), 1731-1744.

F Foltz, J. D. (2004). Credit market access and profitability in Tunisian agriculture. Agricultural Economics, 20(3), 229-240.

G Golden Agri-Resources. (2012). High carbon stock forest study report. Golden Agri-Resources and SMART. Retrieved from

http://www.goldenagri.com.sg/pdfs/misc/High_Carbon_Stock_Forest_Study_Report.pdf

H Harcourt, M., & Lam, H. (2007). Union certification: A critical analysis and proposed alternative. WorkingUSA, 10(3), 327-345.

Health and Safety Executive. (2005). A recipe for safety: Occupational health and safety in food and drink manufacture. [Sudbury, Suffolk]: Great Britain Health and Safety Executive.

Humbert, S., Loerincik, Y., Rossi, V., Margni, M., & Jolliet, O. (2009). Life cycle assessment of spray dried soluble coffee and comparison with alternatives (drip filter and capsule espresso). Journal of Cleaner Production, 17(15), 1351-1358.

Humpl, D. and Starkl, F. The Contributions of Logistics to Enhance Energy Efficiency in Freight Transport. Proceedings from POMS 21st Annual Conference, Vancouver, Canada, May 7-10 2010.

Hurst, P. (2007). Health and child labor in agriculture. Food & Nutrition Bulletin, 28(Supplement 2), 364S-371S.

Hylander, K., Nemomissa, S., Delrue, J., & Enkosa, W. (2013). Effects of coffee management on deforestation rates and forest integrity. Conservation Biology, 27(5), 1031-1040.

I International Finance Corporation (IFC). (2012a). 2.0 Occupational health and safety (pp. 60-76). Washington D.C.

International Fund for Agricultural Development. (2010). Gender and Youth in the Tea and Coffee Value Chains. IFAD Report No. 2295-RW. Downloaded from: http://genderlearning.wikispaces.com/file/view/PDCRE%20-%20Gender%20Study%20-%20final%20Sep10.pdf/188614019/PDCRE%20-%20Gender%20Study%20-%20final%20Sep10.pdf

International Fund for Agricultural Development. (2013). Investing in smallholder agriculture for global food security and nutrition. International Fund for Agricultural Development. Retrieved from http://www.ifad.org/pub/post2015/english/3.pdf

International Labour Organization. (2005). Overview of child labour monitoring. Retrieved from http://www.ilo.org/ipec/Informationresources/WCMS_IPEC_PUB_1500/lang--en/index.htm

International Labour Organization. (2007). Eliminating child labour-Guides for employers. Retrieved from http://www.ilo.org/public/english/dialogue/actemp/downloads/projects/child_guide2_en.pdf

International Labour Organization. (2011). Estimating a living wage: A methodological review. Retrieved from http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_162117.pdf

J Jensen, J., & Dicks, M. R. (2012). What is the difference in profit per acre between organic and conventional coffee? Paper presented at the Southern Agricultural Economics Association Annual Meeting, Birmingham, AL.

Joosten, H., Tapio-Bistrom, M.-L., & Tol, S. (2012). Peatlands - guidance for climate change mitigation through conservation, rehabilitation and sustainable use. Food and Agriculture Organization and Wetlands International.

K Kelly, V., Adesina, A. A., & Gordon, A. (2003). Expanding access to agricultural inputs in Africa: a review of recent market development experience. Food Policy, 28(4), 379-404.

L Le Mire, G., Nguyen, M. L., Fassotte, B., du Jardin, P., Verheggen, F., Delaplace, P., & Jijakli, M. H. (2016). Implementing plant biostimulants and biocontrol strategies in the agroecological management of cultivated ecosystems. A review/Intégrer les biostimulants et les stratégies de biocontrôle dans la gestion agroécologique des écosystèmes cultivés (synthèse bibliographique). Biotechnologie, Agronomie, Société et Environnement, 20(S1), 299.

Lockrey, S. (2012). Life cycle assessment of Nestlé NESCAFÉ gold coffee packaging executive summary report. Melbourne, RMIT University, Centre for Design.

M Maertens, M., & Swinnen, J. F. (2012). Gender and modern supply chains in developing countries. The Journal of Development Studies, 48(10), 1412-1430.

Maloni, M. J., & Brown, M. E. (2006). Corporate social responsibility in the supply chain: an application in the food industry. Journal of business ethics, 68(1), 35-52.

Markelova, H., & Mwangi, E. (2010). Collective action for smallholder market access: Evidence and implications for Africa. Review of Policy Research, 27(5), 621-640. doi: 10.1111/j.1541-1338.2010.00462.x

Markelova, H., Meinzen-Dick, R., Hellin, J., & Dohrn, S. (2009). Collective action for smallholder market access. [Collective Action for Smallholder Market Access]. Food Policy, 34(1), 1-7. doi: http://dx.doi.org/10.1016/j.foodpol.2008.10.001

McCurdy, S. A., & Carroll, D. J. (2000). Agricultural injury. American Journal of Industrial Medicine, 38(4), 463-480.

Meyer, R. H. & Radwin, R. G. (2007). Comparison of stoop versus prone postures for a simulated agricultural harvesting task. Applied Ergonomics, 38(5), 549-555.

Minnesota Environmental Quality Board. (2008). Managing for water sustainability: Report of the EQB water availability project. Retrieved from http://www.eqb.state.mn.us/documents/Managing_for_Water_Sustainability_12-08.pdf

N National Center for Appropriate Technology. (2007). Conserving fuel on the farm. Retrieved from http://njsustainingfarms.rutgers.edu/assets/energy/consfuelfarm.pdf

Njuki, JI, Kruger, E. & Starr, L. (2013). Increasing the Productivity and Empowerment of Women Smallholder Farmers. CARE. Retrieved from: http://www.care.org/sites/default/files/documents/pathways-global-baseline-report-2013.pdf

O Ogunlela, Y. I., & Mukhtar, A. A. (2009). Gender issues in agriculture and rural development in Nigeria: The role of women. Humanity & Social Sciences Journal, 4(1), 19-30.

Osborne, L., and Kovacic, D. (1993). Riparian vegetated buffer strips in water-quality restoration and stream management. Freshwater Biology 29, 243-258. Accessed at: http://www.pcwp.tamu.edu/docs/lshs/end-notes/riparian%20vegetated%20buffer%20strips%20in%20water-quality%20restor-0588496923/riparian%20vegetated%20buffer%20strips%20in%20water-quality%20restoration%20and%20stream%20management.pdf.

Oxfam International. (2002). Mugged: Poverty in your coffee cup. Downloaded from http://www.oxfamamerica.org/static/oa3/files/mugged-full-report.pdf

P Parkyn, S. (2004). Review of Riparian Buffer Zone Effectiveness. MAF Technical Paper No: 2004/05. Accessible at: http://www.biol.canterbury.ac.nz/ferg/MacKenzie%20project/PDF/Riparian%20management/upper-waitaki-submitter-evidence-maf-technical-paper-review-riparian-buffer-zone-effectiveness.pdf.

PCF. (2008). Case Study Tchibo Private Kaffee Rarity Machare by Tchibo GMBH. Pilot Project Germany. Accessed at: http://www.saiplatform.org/uploads/Library/pcf_tchibo_coffee-2.pdf.

Pierce, F. J., & Nowak, P. (1999). Aspects of precision agriculture. Advances in agronomy, 67, 1-85.

Q Quantis Suisse. (2011). Comparative full life cycle assessment of B2C cup of espresso made using a packaging and distribution system from Nespresso espresso and three generic products. Lausanne, Switzerland: Quants Suisse.

R Roth, A. V., Tsay, A. A., Pullman, M. E., & Gray, J. V. (2008). UNRAVELING THE FOOD SUPPLY CHAIN: STRATEGIC INSIGHTS FROM CHINA AND THE 2007 RECALLS*. Journal of Supply Chain Management, 44(1), 22-39.

S Sakwari, G., Bratveit, M., Mamuya, S. H., & Moen, B. E. (2011). Dust exposure and chronic respiratory symptoms among coffee curing workers in Kilimanjaro: a cross sectional study. BMC pulmonary medicine, 11(1), 54.

Salinas, B. (2008). Life cycle assessment of coffee production. Seattle: Luminaire coffee. Retrieved from http://luminairecoffee.com/img/lca_paper.pdf

Salomone, R. (2003). Life cycle assessment applied to coffee production: investigating environmental impacts to aid decision making for improvements at company level. Agriculture & Environment Vol. 1(2): 295-300.2003.

SAN & SAI. (2010). Comparison Report of the Standards: Sustainable Agriculture Standard, Leonardo Academy (SAN) & Social Accountability International, 2010 (Vol. 8000). San Jose, CA. Retrieved from http://www.leonardoacademy.org/programs/standards/agstandard.html

Scholten, H., Verdouw, C. N., Beulens, A., van der Vorst, J. G. A. J., & Santaclara, F. J. (2016). 2 - Defining and Analyzing Traceability Systems in Food Supply Chains A2 - Espiñeira, Montserrat Advances in Food Traceability Techniques and Technologies (pp. 9-33): Woodhead Publishing.

Scientific Logistics Institute (2011). Power optimization TM: Cloud-computing route optimization [White paper]. Retrieved from http://www.scientific-logistics.com/downloads/ScientificLogistics-PowerOptimizationWhitePaper_201111.pdf

Shiferaw, B., J. Hellin, & Muricho, G. (2011). Improving market access and agricultural productivity growth in Africa: What role for producer organizations and collective action institutions? Food Security, 3(4), 475-489.

Slob, B. (2006). A fair share for smallholders. A value chain analysis of the coffee sector. SOMO. Centre for Research on Multinational Corporations.

Stop Child Labour (2012) Action Plan for companies to combat child labour. June 2012.

T Ton, G. (2008). Challenges for smallholder market access: A review of literature on institutional arrangements in collective marketing. Steward Postharvest Review, 4(5), 1-6(6).

Torero, M. (2013). Farmers, Markets, and the Power of Connectivity

U U.S. Department of Labor Bureau of International Labor Affairs. (2012). U.S. Department of Labor's List of Goods Produced by Child Labor or Forced Labor. Retrieved from: http://www.dol.gov/ilab/reports/child-labor/list-of-goods/

U.S. Department of Labor. (2013). News release: U.S. Labor Department's initiative results in more than $100,00 in back wages and penalties for violations affecting 150 workers in Hawaii's coffee industry. (Release Number 12-2264-SAN, Feb 21, 2013). Washington, DC: U.S. Department of Labor. Retrieved from http://www.dol.gov/opa/media/press/whd/WHD20122264.htm.

United States Department of Agriculture, Natural Resources Conservation Service. (2009). Conservation Practice Standard. Anaerobic Digester (No.) Code 366. Retrieved from http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull//?cid=nrcs143_026849

United States Department of Labor, Bureau of International Labor Affairs (2013). Reducing Child Labor and Forced Labor: A Toolkit for Responsible Business. Retrieved from: http://www.dol.gov/ilab/child-forced-labor

United States Department of Labor. (2012). List of goods produced by child labor or forced labor. Retrieved from http://www.dol.gov/ilab/reports/pdf/2012TVPRA.pdf

V Verhart, N., & Pyburn, R. (2010). The rough road to gender equitable growth: The case of cafe de mujer Guatemala. Development 53(3), 356-361.

Verite. (2012). Reserach on indicators of forced labor in the supply chain of coffee in Guatemala. Amherst, MA: Verite.

W Wagner, S. M., & Bode, C. (2008). An empirical examination of supply chain performance along several dimensions of risk. Journal of business logistics, 29(1), 307-325.

Wick, C., Klumpp, M., and Kandel, C. (2011). Shapley Value Simulation for Allocating GHG Emission Savings Due to Logistics Pooling within ECR Cooperations. In Navais, P, Machado, J., Analide, C., and Abelha, A. (eds.): The 2011 European Simulation and Modelling Conference, Conference Proceedings, October 24-26, 2011 at University of Mino, Guimaraes, Portugal, page 240-244. Accessed at: http://www.fom.de/download/544-GPS_02_ESM_2011_Wick_Klumpp_Kandel_FINAL_V3_01.pdf.

X Xiao, Y., Zhao, Q., Kaku, I, and Xu Y. (2012). Development of a fuel consumption optimization model for the capacitated vehicle routing problem. Computers & Operations Research 39, 1419-1431.

Z Zhang, N., Wang, M., & Wang, N. (2002). Precision agriculture—a worldwide overview. Computers and electronics in agriculture, 36(2), 113-132.

Zuskin, E., Skuric, Z., Kanceljak, B., & Saric, M. (1988). Effect of coffee and tea dust in industrial workers. Annals of Occupational Hygiene, 32, 315-319.

Release Notes

"03.02.10, June 2017*

Language referring to the "last twelve months" was removed from the question and/or response options text to avoid any confusion with the related statement in the "Calculation and Scope" of the Guidance. The following KPIs were affected:
- Access to Opportunities for Smallholder Farmers
- Crop Supply Mapping
- Fertilizer Application - On-farm
- Greenhouse Gas Emissions Intensity - On-farm
- Worker Health and Safety - Processing
- Irrigation Water Use Intensity - On-farm
- Yield - On-farm

Packaging Raw Material Sourcing KPI:
- Title: Changed from "Packaging Raw Material Sourcing and End-of-life"
- Response Options: A response option for recyclable content was moved to the Sustainable Packaging Design and Production KPI to improve the scorability and answerability of both KPIs. The remaining response options are defined to be mutually exclusive where the sum of the two percentages entered cannot be greater than 100%.
- Definitions: "Pre-consumer recycled content", "post-consumer recycled content", "sustainably sourced content", and "renewable content" were added or updated to improve interpretation.

Sustainable Packaging Design and Production:
- Question: The question text was updated to reflect the changes below.
- Response Options: A response option for the percentage of recyclable content was moved from the Packaging Raw Material Sourcing KPI to improve the scorability and answerability of both KPIs.
- Response Options: A qualitative response option was removed which stated: "We have established goals to address all of these factors and publicly report our progress towards those goals."
- Response Options: The above response option was replaced with two percentage response options for reporting "demonstrated progress on goals" for material and process efficiency as well as weight or volume optimization. The information required to respond to the KPI has not changed.
- Response Options: The existing response option for “quantifiable impact reduction” was retained.
- Definitions: "Material and process efficiency" and "weight or volume optimization" were updated.
- Definitions: "Resource conservation" was previously included as a separate factor and was included in the definition for material and process efficiency.

Transportation to Retailers:
- The question and response options were changed to address whether carriers report GHG emissions rather than what those aggregate emissions are.