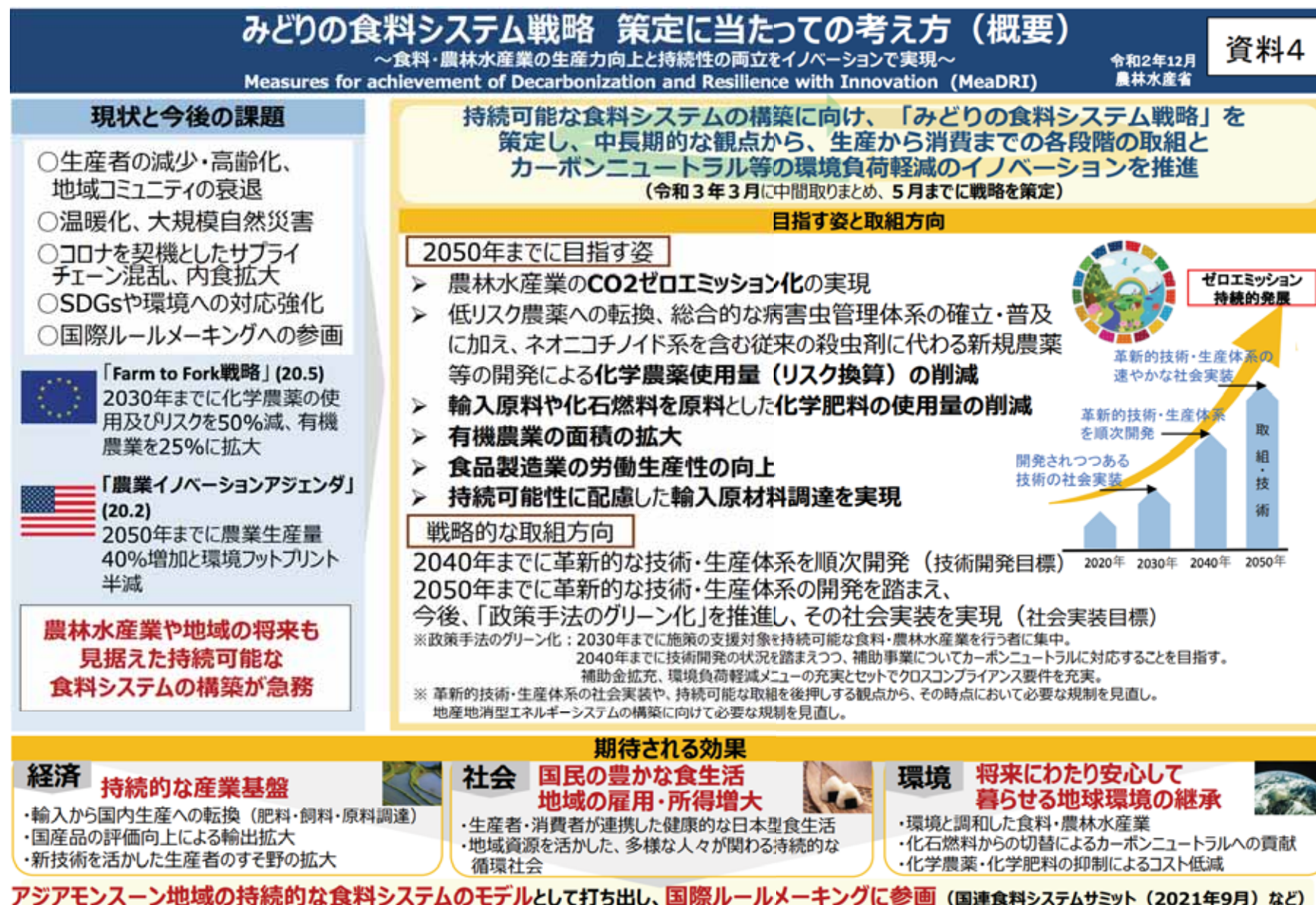
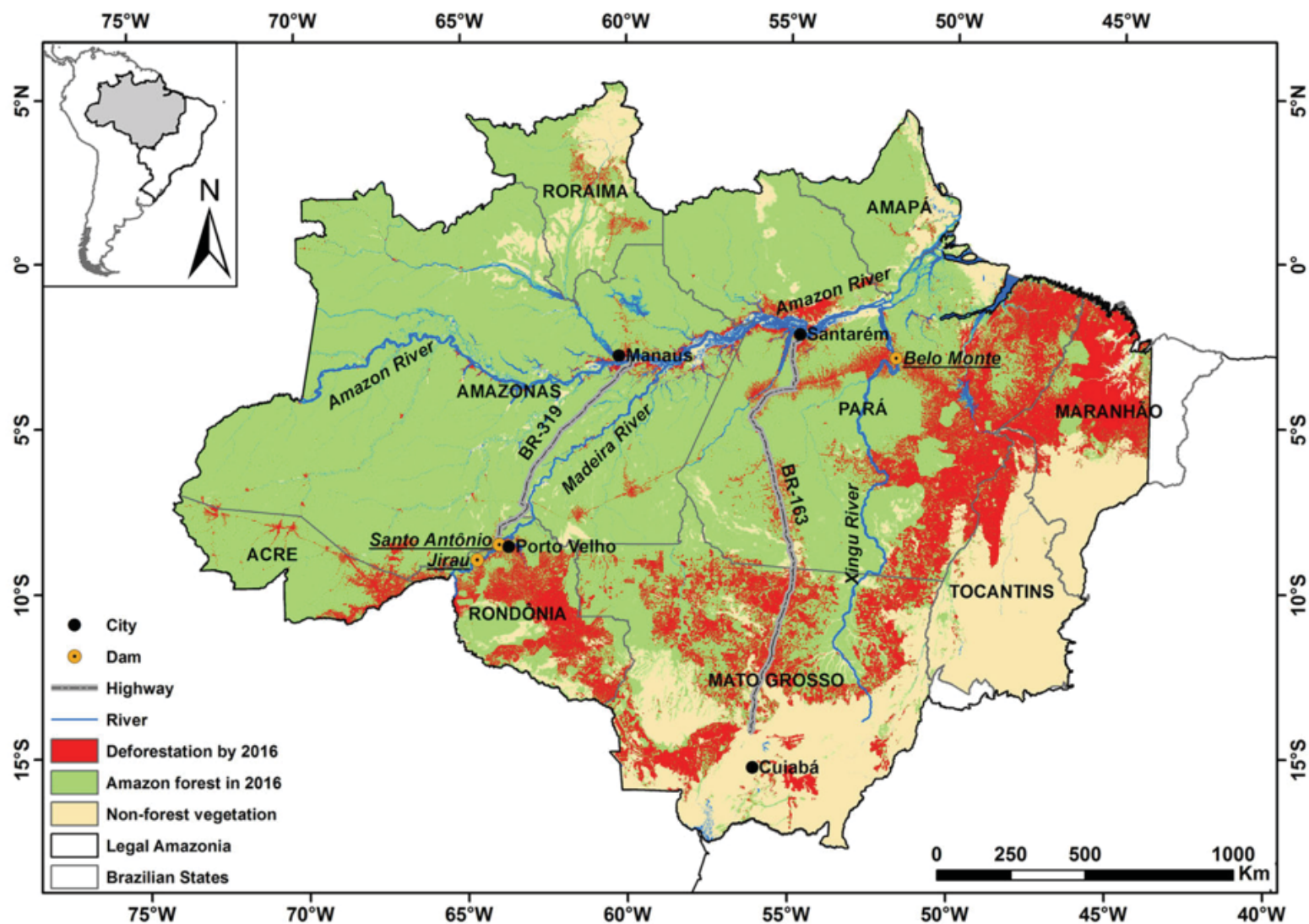


(参考) 農林水産省の「みどりの食料システム戦略」

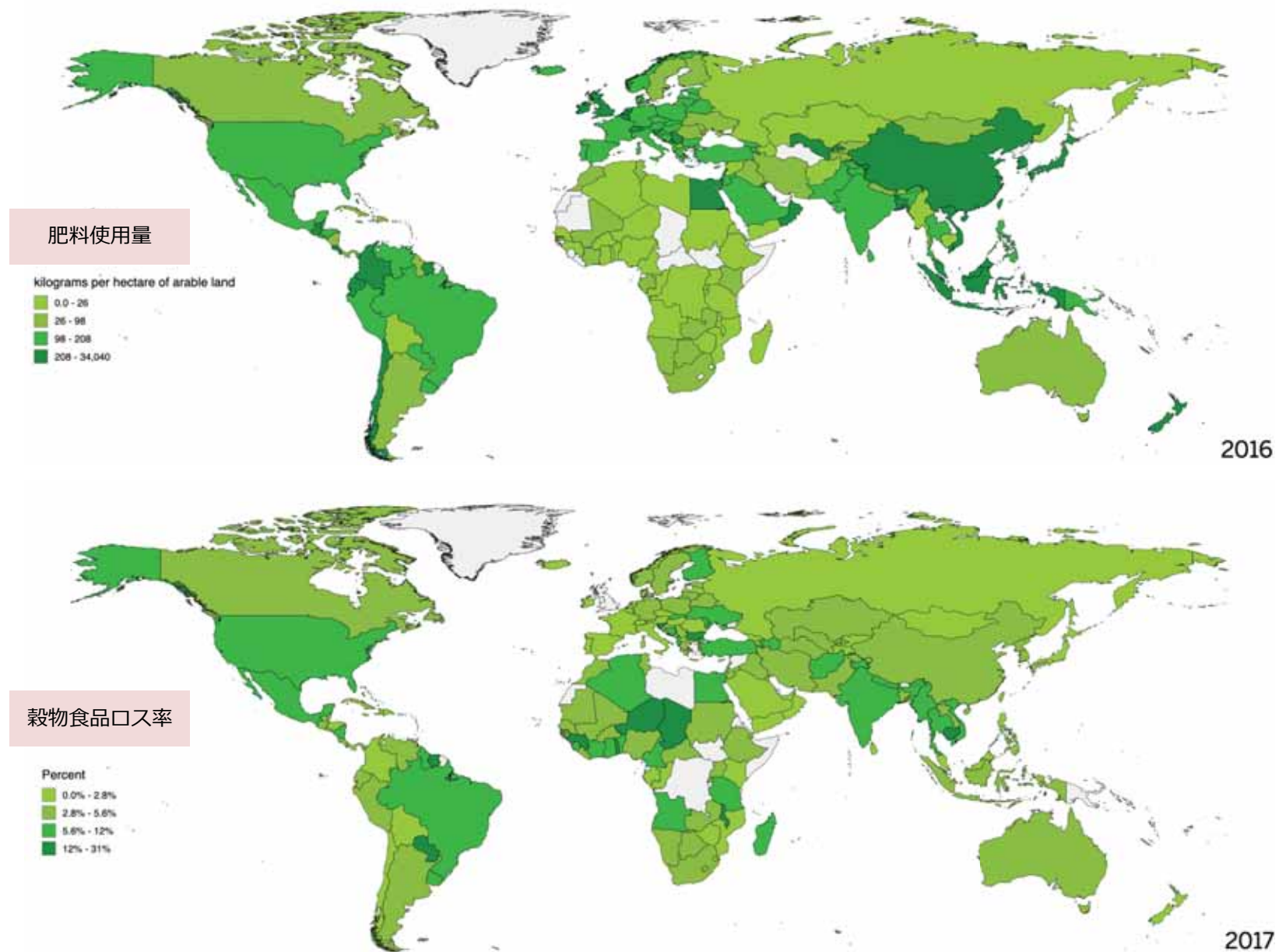


過去40年間のブラジルでの大豆農地拡大と熱帯雨林破壊



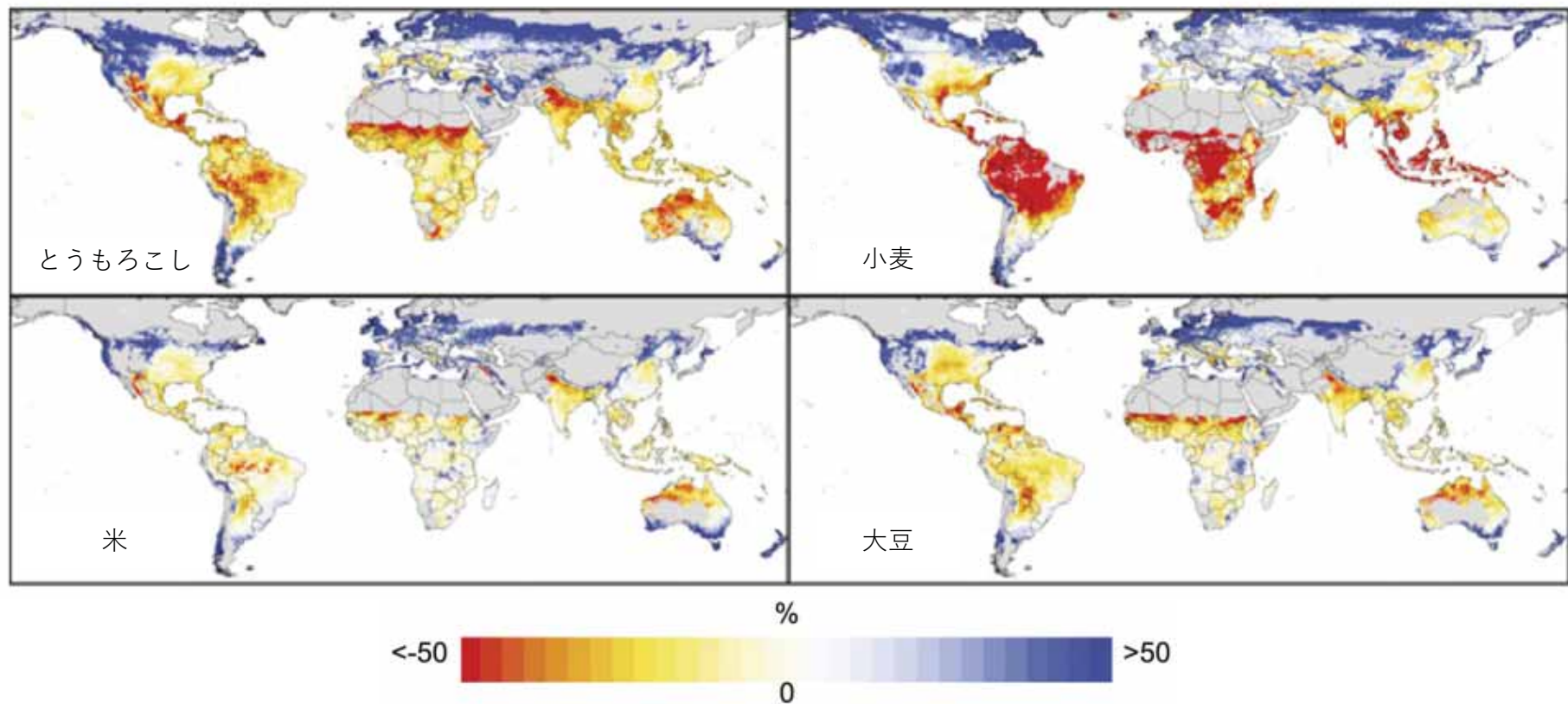
Source : Philip Fearnside, Yale Environment 360, Yale School of Forestry & Environmental Studies. 2016

先進国は肥料使用量が多く、食品ロス率が高い



気候変動により収量の低下の予測

2070年から2099年の穀物生産量の変化（窒素ストレスあり）



西日本から東海・北陸では大きくコメの収量が低下していく予想

気候変動によるコメの収量変化予測

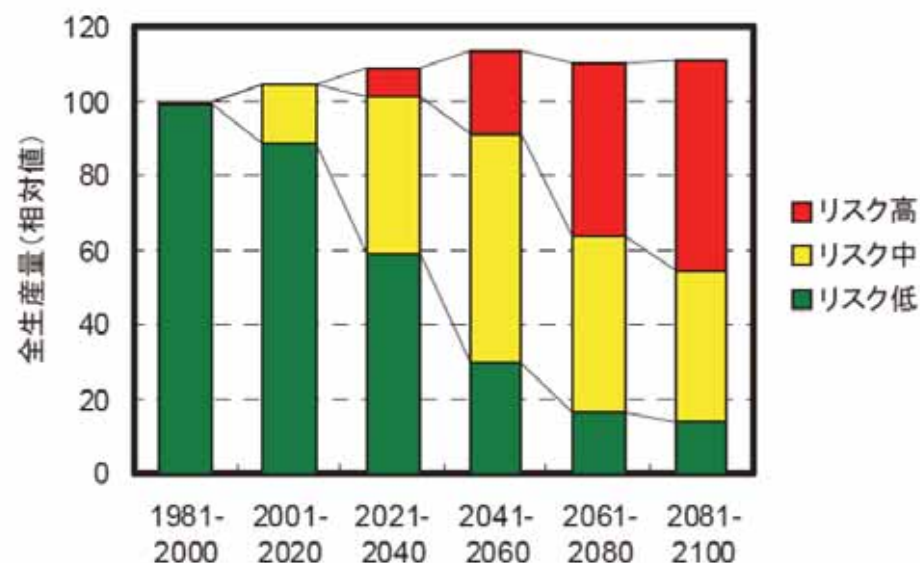


図 1. 全生産量の 20 年毎の推移 (MIROC3.2-hires A1b ; 適応なし)

各メッシュの算定収量に水田面積を乗じて全国集計したもので、1981～2000の現行移植日による値を100とした場合の相対値で表した。高温に因る品質低下のリスク：低 ($HDD < 20$)、中 ($20 < HDD < 40$)、高 ($40 < HDD$)

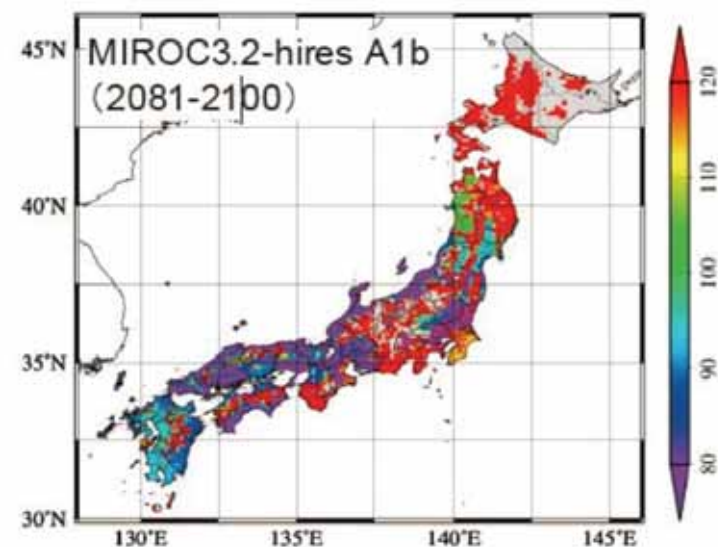
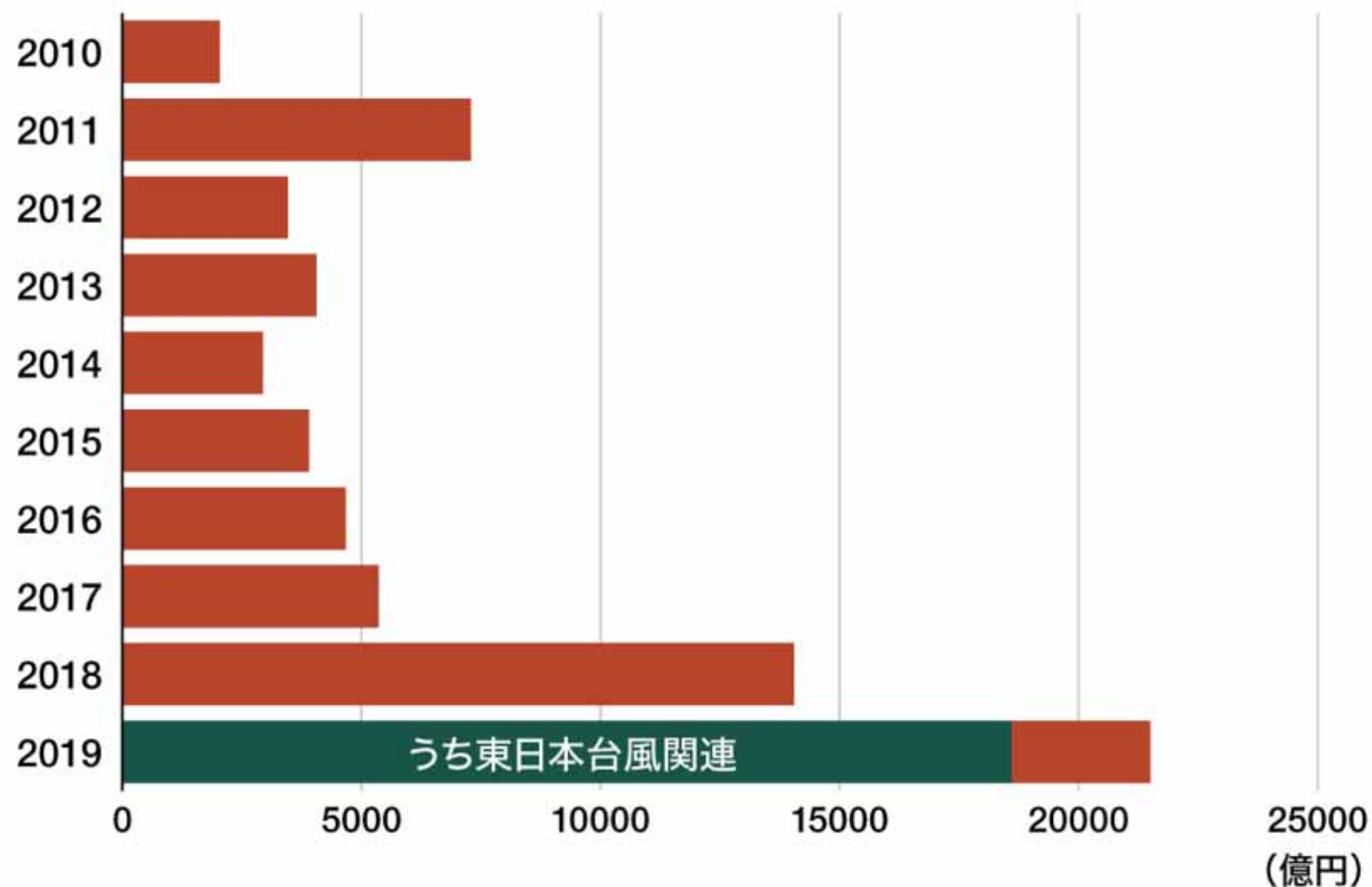


図 2. 推定収量の分布 (2081～2100 平均 ; MIROC3.2-hires A1b)

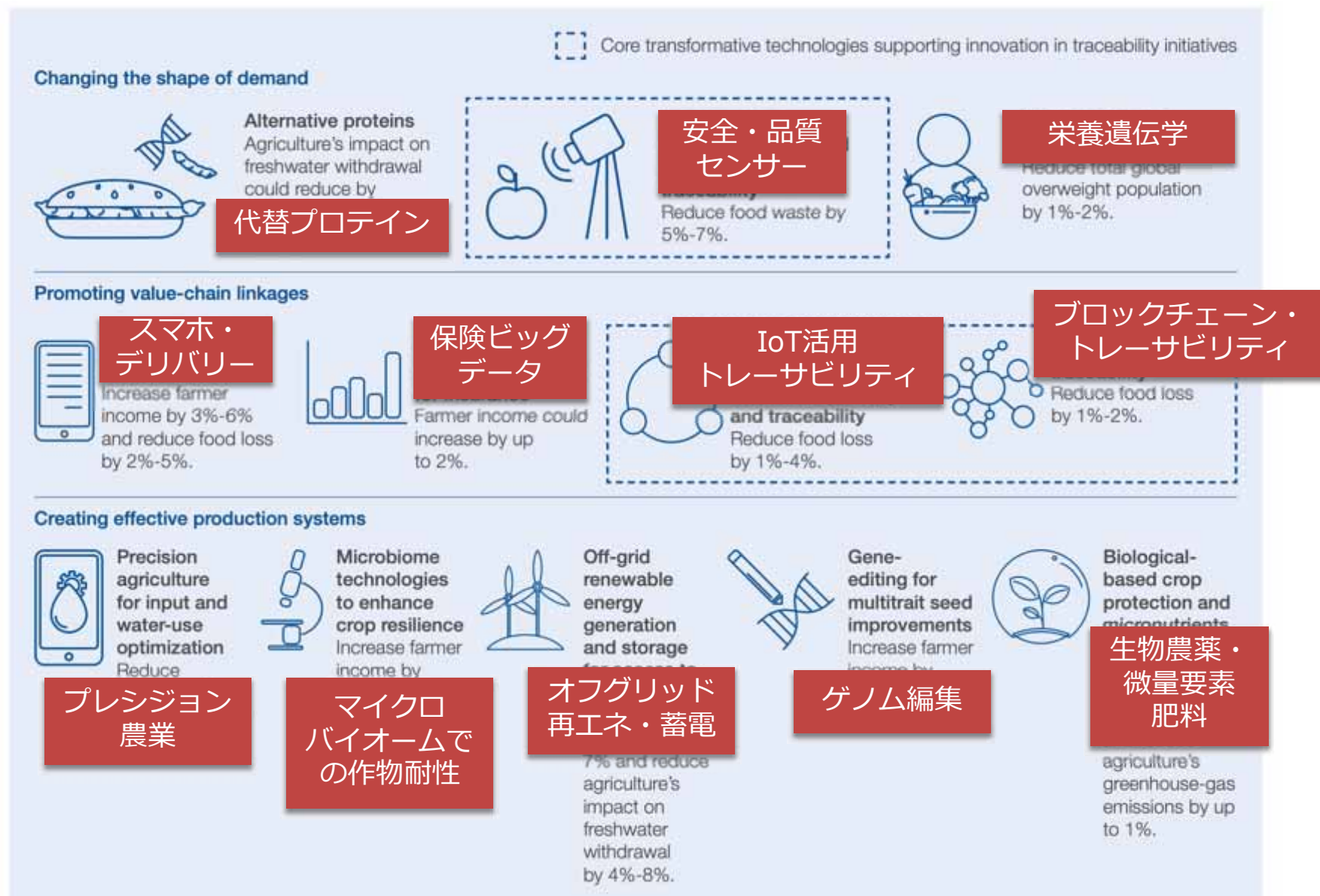
値は 1981～2000 平均の値を 100 とした相対値

日本でも水害被害額が年々増えている

過去10年の津波以外の水害被害額



食品・農林水産業にはイノベーションが不可欠



リジェネラティブ農業への転換を表明する企業が2020年に急増

リジェネラティブ農業 = 無農薬、無化学肥料、不耕栽培、遺伝子組換えなし



(2019)



(2020)



(2020)



(2020)



(2020)



(2020)



(2020)



(2020)

大手企業は農業イノベーションに向けた巨額のR&D投資を加速させている

EUタクソノミーでは「グリーン」を定義し投融資増加を狙う

EUタクソノミー規則の技術スクリーニング基準委託法令案 (2020)

農林業

多年生作物の栽培：高炭素貯留の非農業地保全、農場サステナビリティ計画策定、農場情報開示と年次監査等
非多年生作物の栽培：高炭素貯留の非農業地保全、農場サステナビリティ計画策定、農場情報開示と年次監査等
畜産：高炭素貯留の非農業地保全、畜産場サステナビリティ計画策定、農場情報開示と年次監査等
植林：植林計画、気候ベネフィット分析、追加性、パフォーマンス保証
森林修復・復元：森林管理計画、気候ベネフィット分析、追加性、パフォーマンス保証
森林再生：森林管理計画、気候ベネフィット分析、追加性、パフォーマンス保証
森林管理改善：森林管理計画、気候ベネフィット分析、追加性、パフォーマンス保証
森林保全：森林管理計画、気候ベネフィット分析、追加性、パフォーマンス保証

農林業 DNSH 原則

気候変動適応
水と海洋資源の持続可能な使用と保護
サーキュラーエコノミーへの転換
汚染防止とコントロール
生物多様性と生態系の保護の復元

金融機関による商品の「グリーン」ラベルでは上記基準の遵守が義務化

金融機関・企業・NGO・国際機関は 自然関連財務情報開示タスクフォース（TNFD）を発足

T

N

Bringing Together a Taskforce on Nature-related Financial Disclosures

A Taskforce on Nature-related Financial Disclosures will provide a framework for corporates and financial institutions to assess, manage and report on their dependencies and impacts on nature, aiding in the appraisal of nature-related risk and the redirection of global financial flows away from nature-negative outcomes and towards nature-positive outcomes.



F

D

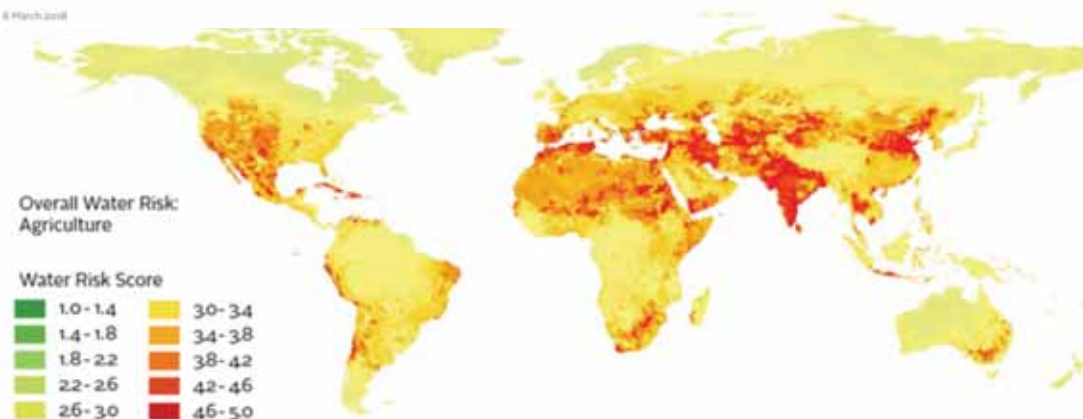


国連責任投資原則（PRI）も農業の水リスクに強い関心

ENVIRONMENTAL ISSUES

What is agricultural supply chain water risk?

8 March 2018



Overall water risk for agriculture (crops) from WWF Water Risk Filter (2018)

Crop ranking by total volume of production in high water risk areas

Crop	Low risk	Medium risk	High risk
Cotton	10%	52%	38%
Mangoes, mangosteens and guavas	9%	53%	38%
Groundnut	10%	54%	36%
Apples	15%	55%	30%
Rice	12%	62%	26%
Wheat	15%	59%	26%
Sweet potato	5%	70%	25%
Watermelon	4%	71%	25%
Tomato	8%	68%	24%

Country	% cropland at high water risk
Algeria	65%
Uzbekistan	49%
Egypt	48%
India	46%
Morocco	39%
Pakistan	36%
Bangladesh	36%
Iran	33%
Cuba	31%
Thailand	28%
Nepal	18%
Sudan	16%
China	13%
South Africa	13%
Vietnam	13%
Turkey	12%

畜産・水産ではFAIRRが10のリスクを特定し企業を評価

We have worked with investors, companies and industry experts to create 10 Risk & Opportunity Factors.

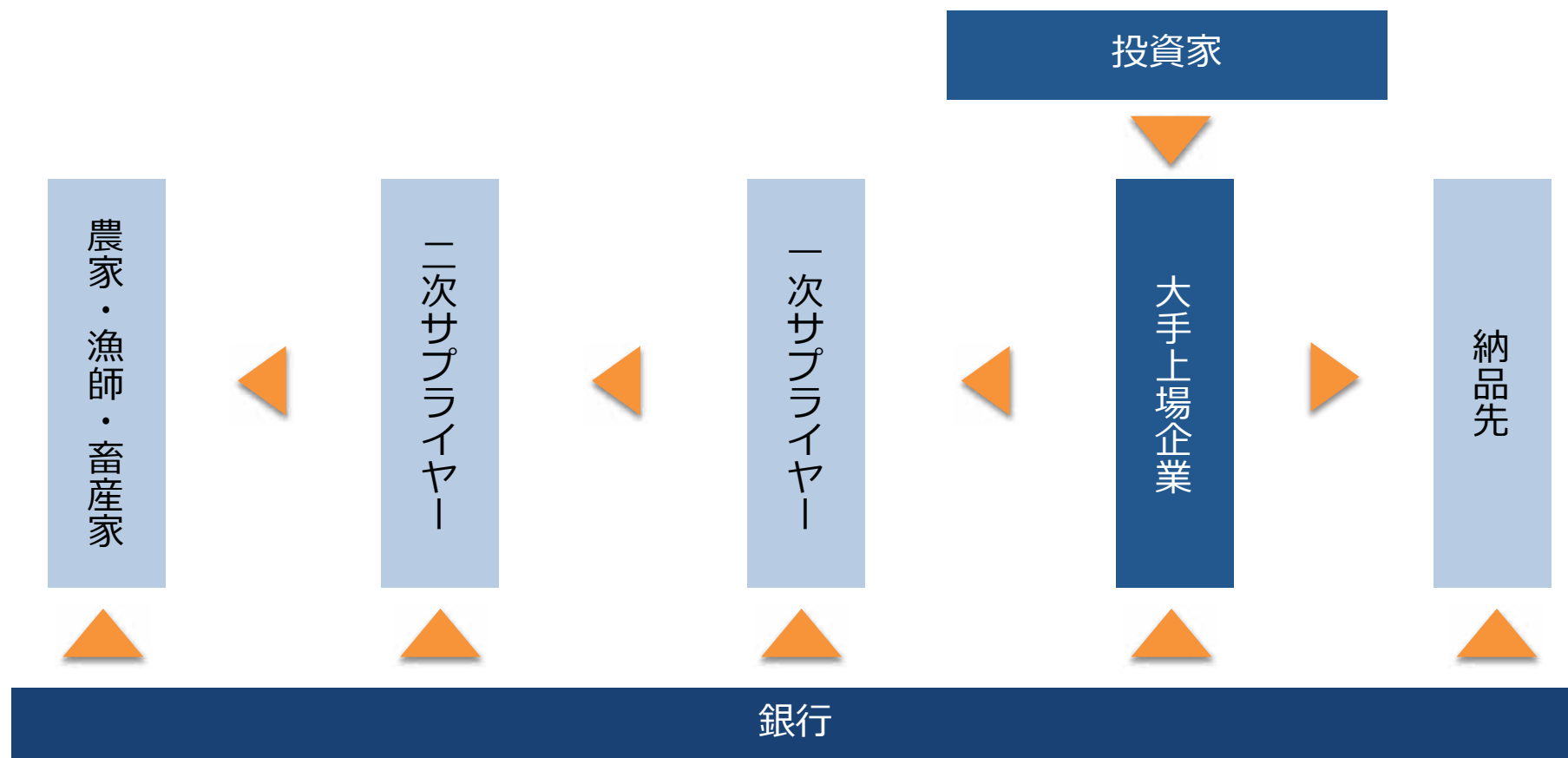
[View Risk & Opportunity Factors](#)

 Greenhouse Gas Emissions	 Deforestation & Biodiversity	 Water Use & Scarcity	
 Waste & Pollution	 Antibiotics	 Animal Welfare	
 Working Conditions	 Food Safety	 Governance New	 Sustainable Proteins

WHOは薬剤耐性で2050年までに経済被害100兆ドル、死者1000万人と予測

環境・社会リスク対策はサプライチェーンを通じて横展開

グローバル・フードチェーンでの要求構造



リスクマネジメントのために「可視化」「トレーサビリティ」が求められている

トレーサビリティで流通させるデータの例

ウォルマート主導のサステナビリティ・コンソーシアムの「THESIS」でのコーヒー



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 assessments 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 output 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 output 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 CO2e per metric tonne of crop harvested. B2. _____ % of our crop supply, by mass, is represented by the number reported above.

すでに125品目以上でKPIが設定されている

EUは消費者と企業の巻き込みを連携させ始めた

欧州グリーンディールでの最新消費者向け政策動向



2020.11

2020年からの5カ年消費者保護政策

- ・ **グリーン・トランジション**：製品の環境サステナビリティ情報開示、グリーンウォッシュからの保護、企業の誓約促進等
- ・ **DX**：金融デジタル化、新技術やEコマースでの消費者保護、AI関連での基本的権利の保護等
- ・ **実効性のある履行と救済**：違法行為対策強化、オンライン捜査のツール導入等
- ・ **脆弱な消費者支援**：債務関連支援強化、子供向け製品の安全性強化、遠隔地の消費者への助言提供等
- ・ **グローバル文脈での消費者保護**：中国製品の安全性向上で中国と協働、EUパートナー国への規制サポート



2020.12

市民・自治体・団体へのアクション賛同ウェブサイト

- ・ ウェブサイト上の推奨アクションに「コミット」宣言
- ・ 市民アンバサダーを募集
- ・ 行動アイデアを投稿し他人とシェア



2021.1

企業の自発的加盟

- ・ サプライチェーンのカーボンフットプリント算出
- ・ 主要商品のカーボンフットプリント算出
- ・ 持続可能な製品・サービスの販売増
- ・ 持続可能なアクションを促す企業広報支出増
- ・ 算出した情報の開示

農林業のサステナビリティ向上に失敗したら何が起こるか

- 長期課題に対応できず農業・畜産業・水産業の生産減
- 海外輸出の低下。国内の食料自給率の低下
- 取引先の食品・小売企業との取引停止
- 食品関連会社の株価の低迷。外国企業からの買収
- 食品価格の高騰。栄養低下

企業・金融機関・政府のパートナーシップが不可欠

