WRI ISSUE BRIEF

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Accounting for Risk: Conceptualizing a Robust Greenhouse Gas Inventory for Financial Institutions

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Executive Summary

Compiling greenhouse gas (GHG) emissions inventories is no longer the province of only first-mover corporations: Approximately two-thirds of Fortune 500 companies now use the standards developed by the Greenhouse Gas Protocol — an initiative of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) — to compile their GHG emissions inventories. While the standards set forth by the Greenhouse Gas Protocol Initiative are broadly applicable, the diverse, complex, and service-focused nature of financial services has triggered discussion about the appropriate application methods for financial institution users. Accordingly, financial institutions and their stakeholders are seeking additional clarification on developing and evaluating GHG inventories for financial institutions.

In response, this issue brief draws from the widely used WRI/WBCSD Greenhouse Gas Protocol's *Corporate Accounting and Reporting Standard*, *Revised Edition*, to discuss objectives, options, and challenges for financial institutions and stakeholders to consider when creating and evaluating a GHG emissions inventory.

How to Use this Brief

Definitive guidance is not provided in this brief but will be developed through a multistakeholder process. Please contact Shally Venugopal (svenugopal@wri.org) or David Rich (drich@wri.org) for more information about contributing to this process.

The Greenhouse Gas Protocol's *Corporate Accounting and Reporting Standard*, *Revised Edition*, provides critical background and context for this issue brief. This publication is available at http://www.ghgprotocol.org.

Approach

Because emissions related to investments and services may contribute to a significant portion of financial institutions' GHG inventories and potential business risk, this brief discusses such options as

- Using an *equity share* approach to capture emissions from relevant proprietary investments.
- Reporting relevant *indirect* emissions (i.e., emissions that are a consequence of business activities but occur at sources owned or controlled by another entity) related to debt and equity investments and other products, services, and financial contracts.

Given the practical and conceptual complexity in creating an inventory that includes emissions from investments and services, we encourage financial institutions to keep the following business objectives in mind during the development process:

- Demonstrating environmental stewardship to stakeholders (i.e. managing reputational risks).
- Informing risk management practices for proprietary and managed investments (i.e., helping manage GHG risks in an institution's own portfolio and fulfilling its fiduciary duty to its clients).

The inventory ultimately should facilitate positive environmental outcomes, namely, the reduction of GHG emissions, and serve a business imperative. To achieve these business and environmental objectives, setting GHG reduction targets as well as tracking and reporting on progress are critical.

I. The Business Case for Robust Greenhouse Gas Emissions Accounting

Benefits of Climate Risk Management

Financial institutions are important actors in, and responders to, the shift to a low-carbon economy. Acting as market makers, capital providers, and advisers, financial institutions can directly affect the growth or decline of both "clean" and "dirty" industries. For this reason, financial institutions may derive reputational and direct financial benefits from pursuing positive environmental objectives and actively managing climate change risks.

Reputational Benefits: Various stakeholders in the environmental community—from environmental organizations to retail and institutional investors—have pressured the financial community to play a larger role in mitigating climate change. For example, in 2008 the Rainforest Action Network (RAN) released a report estimating the emissions of the seven leading Canadian banks from their financing of greenhouse gas–intensive projects. RAN's aim was to expose the lending and investment practices of major Canadian banks while also encouraging consumers to move their deposits to more "environmentally friendly" banks. Other stakeholders also have requested that financial institutions make technology-specific investments or impose moratoriums on lending to "dirty" companies. For example, in 2007, Trillium Asset Management submitted a shareholder resolution requesting that Bank of America cease all financing to new coal plants. In general, stakeholders have applauded institutions that allocate less capital to dirty sectors and more capital to clean sectors.

Financial Benefits: Besides stakeholders' requests for environmental stewardship, financial institutions are starting to realize that to manage risk better, they should consider climate change in their business decisions. Goldman Sachs (GS), for example, through its GS Sustain strategy, is identifying investment opportunities by considering environmental (among other) criteria across a broad range of industries. Meanwhile, numerous pension funds in Europe and the United States are starting to assess investment risk through the lens of climate change. Particularly under an environment-focused policy era in the United States and globally, climate risk assessments may soon become part of a financial institution's fiduciary duty to their clients and shareholders.

Key Topics in this Brief

- Achieving business and environmental objectives by addressing the following investment and service areas:
  - Proprietary investments (both equity and debt).
  - Investments (e.g., funds) managed on behalf of others.
  - Financial services provided to clients, such as underwriting and advisory.
- Defining an inventory's scope using the principle of relevance.
- Using the GHG inventory:
  - Calculating aggregate inventory numbers.
  - Reporting the final GHG inventory.
  - Using the emissions inventory.

The Role of a Robust GHG Inventory in Managing Climate Risk

Financial institutions cannot manage what they do not measure, and they certainly cannot *effectively* manage what they cannot *accurately* measure. The absence of a robust emissions accounting system hides both potential risks and opportunities related to climate change. Thus, to achieve positive business and environmental outcomes at scale, a financial institution must assess and track its GHG emissions across a wide range of sectors, products, services, and investments. For example, if financial institutions revised their inventory to report emissions from sources like proprietary investments and lending, it might be easier for them to assess the climate-related risks of borrowers or certain project finance investments.

Thus far, the financial sector has assessed and reported limited GHG inventories, unlike operationally intensive sectors in which emissions can easily be traced (e.g., smoke stacks). This limited reporting (see box 1), which may include activities like electricity usage or employees' air travel, allows financial institutions to understand some of the risks of their operational activities but misses critical risks and opportunities associated with their (and their clients') investments, lending, advisory, and fund management services.

Certainly, developing a robust inventory that includes these core business activities can be challenging, owing to the financial sector's complexity. Creating a robust inventory—just one part of climate risk management—requires balancing financial and environmental goals with practicality and fea-

BOX 1 Current Financial Institution Reporting

A widely used corporate reporting center for GHG emissions is the Carbon Disclosure Project (http:///www.cdp.org). In its 2008 *Global 500 Report*, the project identified the following trends in reports provided by financial services companies (i.e., banks, insurers, and diversified financial services):

- Financial services companies identified their own major carbon risks as relating to reputation, creditworthiness, and energy cost.
- The GHG Protocol is the most common framework used by financial services companies to report emissions.
- Slightly more than half the companies reported Scope 3 (indirect) emissions, but almost all were limited to employees' business travel.
- Only a few respondents monitor those investment emissions likely to present the greatest risk exposure. Citigroup recently disclosed Scope 3 emissions related to its investments in power-generation products, which dwarfed its Scope 1 and Scope 2 emissions.

Source: Carbon Disclosure Project 2008's *Global 500 Report* and WRI.

sibility. Ultimately, financial institutions should guide their inventory development according to the following business objectives:

1. Demonstrating environmental stewardship to stakeholders by providing a fair and accurate representation of the institution's climate risk and opportunities.
2. Managing GHG-related investment risk for the institution's own investments and that of its clients (thus, fulfilling its fiduciary duty to its stockholders and clients).

In the following sections, we provide a brief primer on the GHG Protocol's *Corporate Standard*, a discussion of potential accounting options according to business area, and tests that financial institutions can use to assess the relevance of the emissions from each of their business activities.

II. Primer on Corporate GHG Accounting

Brief History

In response to the increasing focus on measuring and managing the impacts of climate change, the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) developed the Greenhouse Gas Protocol Initiative. Launched in 1998, the initiative's mission is to develop internationally accepted greenhouse gas (GHG) accounting and reporting standards for businesses and to promote the broad adoption of these standards. The GHG Protocol Initiative has two separate standards:

1. The GHG Protocol's *Corporate Accounting and Reporting Standard*, which provides a step-by-step guide for companies to measure and report their GHG emissions.
2. The *GHG Protocol for Project Accounting*, which is a guide to quantifying reductions from GHG mitigation projects.

The first edition of the GHG Protocol's *Corporate Accounting and Reporting Standard*, published in September 2001, enjoyed broad adoption and acceptance around the globe. A revised version was issued in 2004 (hereafter referred to as the *Corporate Standard*) and was designed to build on the practical experience gained from using the first edition. Businesses, NGOs, and governments all use the standard as a basis for their accounting and reporting systems.

Principles

Generally accepted GHG accounting principles serve as a foundation for the *Corporate Standard*. These principles, summarized from the *Corporate Standard,* are (1) derived in part from generally accepted financial accounting and reporting principles, (2) the product of a collaborative multistakeholder process, and (3) intended to ensure that the information is a faithful, true, and fair account of GHG emissions:

- **Relevance:** Ensure that the GHG inventory appropriately reflects the GHG emissions of the company and serves the decision-making needs of users — both internal and external to the company.
- **Completeness:** Account for and report on all GHG emission sources and activities within the chosen inventory boundaries. Disclose and justify any specific exclusions.
- **Consistency:** Use consistent methodologies to allow comparisons of emissions over time. Transparently docu-

FIGURE 1 | Approaches to Determining Organizational Boundaries

If the reporting company wholly owns all its operations, its organizational boundary will be the same whichever approach is used

Control		Equity Share
FINANCIAL	**OPERATIONAL**	
All emissions reported when reporter has the ability to direct financial and operating policies with a view to gaining economic benefits	All emissions reported when reporter has full authority to introduce and implement operating policies	Proportional emissions are reported based on percentage of economic ownership of entity or operations

Source: WRI and WBCSD, GHG Protocol *Corporate Standard*.

ment any changes to the data, inventory boundaries, methods, or any other relevant factors in the time series.

- **Transparency:** Address all relevant issues factually and coherently, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.
- **Accuracy:** Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

Organizational Boundaries

Before beginning the accounting process, the reporting company should first decide on its organizational boundaries, that is, which entities, ventures, and/or activities it will include in its GHG inventory. The *Corporate Standard* outlines two alternative approaches for companies to use when setting their organizational boundaries: (1) the control approach and (2) the equity share approach (see figure 1, and for a more detailed discussion refer to the *Corporate Standard*).

Control Approach: Under the *control approach*, a company accounts for 100 percent of the GHG emissions from those operations over which it has either financial or operational control. Once a company decides on the control approach, it must choose either the financial or the operational control approach, but not both. Financial control may be established if a company can direct financial and operating policies to gain economic benefit from any activities. For example, if a financial institution chose the financial control approach and owned a power plant in which it could direct financial or operating policies to gain economic benefit, the financial institution would account for 100 percent of emissions from this power plant. Operational control is established if a company can introduce and implement operating policies governing the emitting entity or its operations. The control approach does not require companies to account for GHG emissions from entities or operations in which they own an interest but have no control.

Equity Share Approach: In contrast, if a company uses the *equity share* approach, it accounts for the emissions from operations or entities in which it has an equity interest, proportional to its share of equity in the operation. For example, company A has a joint operation with company B and a 40 percent equity share in the joint operation. When using the equity share approach, the joint operation is included in company A's inventory, but only 40 percent of its emissions are reported. Thus, when using the equity share approach, a financial institution that has a 40 percent equity stake in a power plant would report 40 percent of the emissions from that entity in its corporate inventory.

Operational Boundaries and Scopes

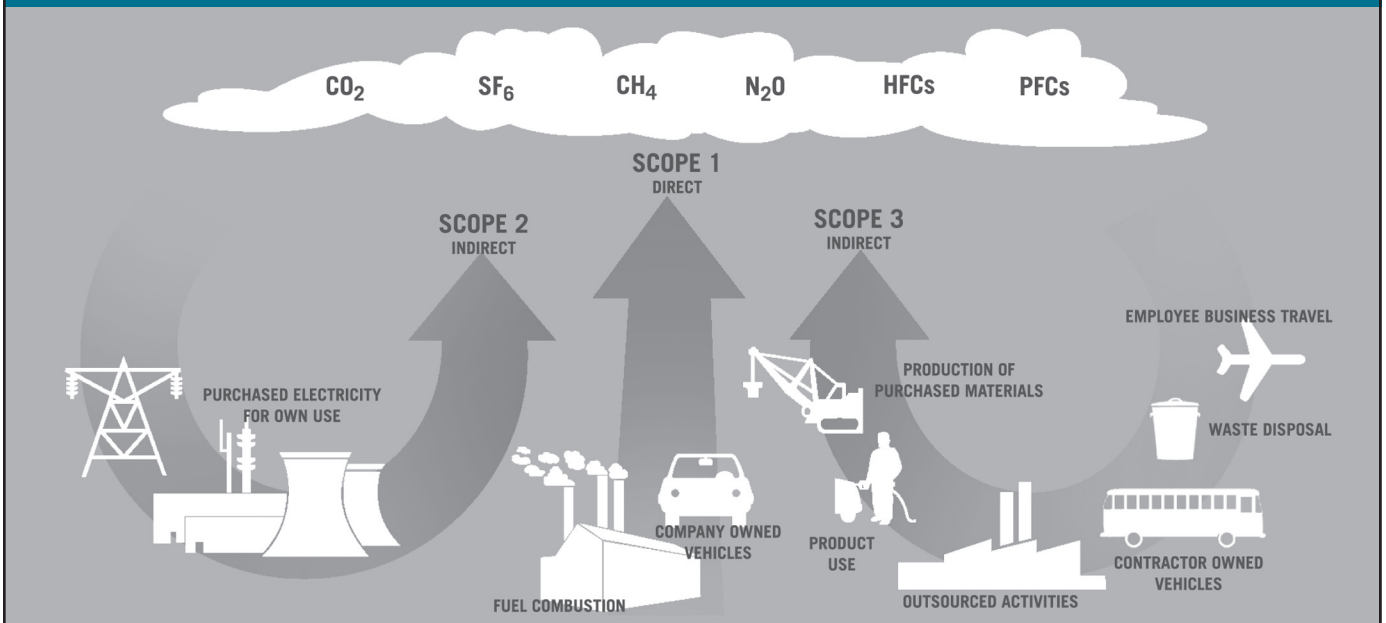
After the company has determined its organizational boundaries, it then sets its operational boundaries. This involves identifying the emissions associated with its operations and categorizing them as direct or indirect. *Direct* GHG emissions are from sources that are owned or controlled by the company. *Indirect* GHG emissions result from the company's activities but occur at sources owned or controlled by another company.

TABLE 1 | Classification of GHG Emissions

Direct v. Indirect	Scope
Direct GHG Emissions: Emissions from sources that are owned or controlled by the reporting company.	**Scope 1:** All direct GHG emissions.
Indirect GHG Emissions: Emissions that are consequences of the activities of the reporting company, but that occur at sources owned or controlled by another company.	**Scope 2:** Indirect emissions associated with the generation of electricity, steam, heating or cooling purchased for own consumption. **Scope 3:** Other indirect emissions, such as those associated with the use of sold products and services, the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting company, electricity-related activities (e.g. transmission and distribution losses) that are not covered in Scope 2, outsourced activities, or waste disposal.

Source: WRI and WBCSD, GHG Protocol *Corporate Standard*.

FIGURE 2 | Overview of Scopes and Emissions across a Value Chain



Source: GHG Protocol *Corporate Standard*.

To help differentiate direct and indirect sources, the *Corporate Standard* created three "scopes" or classifications of emissions (see table 1 and figure 2).

According to the *Corporate Standard*, all emissions that fall into Scope 1 or 2 should be reported. Although Scope 3 emissions also may be reported, it is optional, and the scale and breadth (e.g., the number of sources) of Scope 3 reporting are left to the reporter. By using this standard of setting organizational and operational boundaries, the reporter can systematically account for and manage emissions across its business. Guidance on reporting Scope 3 emissions is provided on pages 29 to 31 of the *Corporate Standard*.

III. Applications for Financial Institutions

This section outlines the business areas and application methods for financial institutions to consider when using the *GHG Protocol Corporate Standard*. This section does not provide final guidance or framework but rather intends to give users an overview of the options available to them, categorized by business area.

Financial institutions should keep these options in mind when considering the business objectives outlined in section I (i.e., managing reputational risk and improving climate-related financial risk management) as well as the accounting principles detailed in the *Corporate Standard* (and outlined in section II).

The first two business areas we discuss focus on a financial institution's *proprietary* investments—that is, the investments made by a financial institution using its own capital and balance sheet, as opposed to investments managed on behalf of its clients, using their capital. The third business area we discuss is those investments and services that a financial institution manages or provides on behalf of its clients. As detailed at the end of this section, the methods are (1) not mutually exclusive and (2) should be considered in the context of business operations.

Although the information in this section is categorized by business area, users should use the same organizational boundary approach across all business areas, as required by the *Corporate Standard*. If deemed useful to the inventory's users, the company may choose to report *additional* inventories based on a different organizational boundary approach. The appropriate organizational boundary approach may differ depending on the financial institution's products and services. In general, if a significant part of a financial institutions' business involves proprietary equity investments, we recommend using the equity share approach as an organizational boundary. See figure 3 for a summary of the information provided in this section.

Proprietary Investments

Area 1: Equity investments (a) that are financially material, (b) in which the company holds influence or control over the emitting entity, or (c) that are held longer than one year.

Possible method:

- **Define the organizational boundary using the equity share approach.**
- **Report a proportional share (by percentage of ownership) of the investee's GHG emissions as the investor's emissions.**

Note: If the *control* organizational boundary approach is used, emissions from these investments would be categorized as Scope 3 emissions.

If financial institutions define their organizational boundary using the equity share approach, which distributes emissions among equity holders according to their percentage of ownership, their Scope 1 emissions inventory would be more inclusive and representative of risks. For example, this approach allows financial institutions to capture those emissions associated with equity investments in GHG-intensive industries (like power-generating assets) that the financial institution finances with its own capital.

Area 2: Minor equity stakes, corporate debt holdings, insurance, and credit guarantees.

Possible method:

- **Regardless of the organizational boundary approach used, report the investee's emissions under Scope 3.**

This area considers situations in which a financial institution holds a minor equity stake in an entity (i.e., in which a financial institution has no influence or control over the entity), acts as a lender or as an insurer, or is a counterparty to a financial contract. These types of situations may comprise a significant portion of the financial institution's balance sheet and revenue-generating activities. Recognizing this, stakeholders have begun to push the financial sector — especially insurance providers — to recognize their role in creating GHG emissions. Suggestions from stakeholders range from more comprehensive reporting, to moratoriums on any investments in, lending to, or insuring of carbon-intensive industries.

FIGURE 3 | Application Options by Business Area

First, choose organizational boundary approach — any institution that holds a significant amount of equity investments should use the equity share approach.

PROPRIETARY INVESTMENTS

1 **Equity Stakes with influence or financial control or held for > 1 year**

If using *equity share* approach, then report under Scope 1 and Scope 2 emissions proportional to equity stake.

If *control* approach is used, report 100% of *relevant** emissions under Scope 3.

2 **Equity Stakes with no influence or control or held < 1 year** | **Corporate Debt Holdings with > 1 year tenor** | **Other: Insurance, Credit Guarantees, Contracts with > 1 year tenor**

Report relevant emissions under Scope 3 regardless of organizational boundary approach; proportion to depends on organizational boundary approach.

MANAGED INVESTMENTS AND CLIENT SERVICES

3 **Managed Equity or Debt Funds**

Build *separate* GHG inventories for funds; equity share approach is appropriate for equity-focused funds; report in fund documents.

Corporate Underwriting/Issuance

Encourage clients to report GHG inventory in prospectuses and other disclosure.

Financial Advisory (e.g., Mergers and Acquisitions)

Encourage clients to consider GHG inventory in mergers, acquisitions, and other decisions.

Note: * Please refer to the *Corporate Standard* and Section IV for additional information on the principle of relevance.
Source: WRI.

For accounting purposes, regardless of the choice of organizational boundary, these activities would be categorized as Scope 3 emissions sources, since financial institutions would not typically have a significant influence on, control over, or ownership of the recipient of minor equity investments and debt financing. However, understanding emissions from these sources may be critical to achieving business objectives.

Scope 3 sources may include

- Minor equity investments defined as investments over which the investor has no significant influence or control or that have been held less than one year.
- Corporate debt holdings, including corporate debt instruments (such as bonds or convertible bonds prior to conversion) or commercial loans.
- Other debt holdings or financial contracts, for example, securitized products, insurance contracts, credit default swaps, and other financial contracts.

As mentioned in section I, reporting Scope 3 emission sources is optional according to the *Corporate Standard* but is encouraged to gain a full understanding of a company's GHG emissions, risks, and opportunities. Financial institutions should report any emissions related to these sources if they are deemed relevant according to the *GHG Protocol Corporate*

Standard's definition of relevance. Sample tests for relevance are provided in section IV.

Managed Investments and Client Services

Area 3: Asset management, corporate underwriting, and financial advisory services

Possible method:

Regardless of organizational boundary approach used

- **Report relevant emissions for managed funds in a separate inventory; that is, do not include them in the financial institution's core inventory.**
- **Encourage clients to report and manage emissions.**

A financial institution may extend its environmental responsibility, fiduciary duty, and reputational risk management by considering investments managed on behalf of clients or services provided to clients. This could include the following service areas:

- Investment and asset management: equity or fixed-income funds managed on behalf of clients (use methods similar to business areas 1 and 2).
- Corporate underwriting and issuance: for clients seeking equity or debt capital.
- Financial advisory services: for clients seeking assistance with mergers and acquisitions or requesting other advisory services.

Financial institutions earn revenue from these services, even though they may not be the main beneficiary of these transactions. Thus, activities like reporting the emissions associated with managed funds in fund documents; encouraging clients to report their GHG inventory in bond or other prospectuses; and increasing awareness of the GHG inventories of merger or acquisition targets during a due diligence process would demonstrate environmental stewardship to stakeholders.

Summary

Inventory methods for the three business areas just described exemplify the range of products and services that a financial institution may include in a GHG inventory. Some of these areas may be less important than others, depending on the type of financial institution. For example, a hedge fund or asset manager may place more importance on considering proprietary investments, while a boutique investment bank focusing on advisory services would place more importance on its clients' inventories. A commercial lender may decide that lending-related emissions are its priority given the percentage of its business dedicated to lending.

IV. Scope of Products and Services

Once a financial institution decides which methods and business areas to pursue, the next step is deciding which types of products or services are most relevant. The objective of this section is to

1. Offer financial institutions some initial tests to determine the relevance of including certain products and services in its inventory.
2. Identify practical challenges in order to encourage the financial and stakeholder community to consider these issues in the next generation of GHG inventories and guidance.

1. Prioritizing through the Principle of Relevance

Similar to financial accounting in which financially relevant (i.e., financially material) events are recorded, GHG accounting relies on determining the relevance of emissions, that is, which emissions are important enough to include in an inventory. The concept of relevance is simple: for an inventory to be relevant, it should include information that both internal and external users need to make decisions. In practice, however, this can be quite complex.

As a general rule, financial institutions should try to include in their inventory those products or services that are

- Large (or are believed to be large).
- Significant contributors (or are believed to contribute) to climate risk exposure.
- Able to be influenced; that is, the financial institution can help reduce or influence the investee to reduce emissions.
- Determined by key stakeholders as critical (e.g., based on feedback from customers, suppliers, investors, environmental groups, or the general public).

The following is a sample of tests to help financial institutions determine which transactions and activities are relevant.

a. Emissions Relevance

The relevance of certain transactions or services may be determined by examining the size and nature of related emissions. Criteria to determine emissions relevance could include

- Absolute emissions (e.g., tons of emissions over a specified threshold).
- Aggregate sectoral emissions (e.g., any transactions from sectors that contribute substantially to a percentage of the economy's emissions).
- Intensity of sectoral or company-level emissions (e.g., GHG/MWh for a power plant).
- Exposure to climate-related regulatory or compliance risk.
- Exposure to high energy costs, that is, energy-intensive industries.

For example, a financial institution may include all transactions involving the power, oil and gas, manufacturing, mining, and transport sectors, which have high absolute emissions and high emissions intensity. If a financial institution chooses to focus on specific economic sectors, tracking the improvement of different industries over time may be helpful.

Data availability may be a practical reason for including GHG-intensive sectors, even if investments are not as significant as in other areas. For example, data on the CO_2 emissions from every power plant in the United States are currently available to the public. Information also may be easy to obtain from voluntary disclosure sources like the Carbon Disclosure Project or sustainability reports.

Given corporations' growing participation in both voluntary and mandatory GHG reporting, emissions data are becoming increasingly accessible. If information is not available, rough estimates may be an option, although users must be careful to recognize the differences in intensity of various companies' emissions.

b. Financial Materiality

Financial institutions can use minimum financial thresholds to limit the scope of their inventories, as stakeholders and/or investors may question the relevance of a GHG inventory that excludes very large financial transactions or recipients. Examples of how a transaction's financial relevance may be determined include:

- The size of the transaction (e.g., the size of the transaction [monetary term] in relation to the size of the portfolio [monetary term]).
- The size of the capital recipient (e.g., the ten largest entities/clients or the ten largest entities/clients in a sector).

The threshold should be relevant to each financial institution. For example, a $100 million corporate loan may be considered

financially relevant to a firm that has a total loan book value of $1 billion, whereas the same transaction may be considered insignificant to a firm that has a much larger total loan book value. Any threshold that is applied to all financial institutions would likely be misleading.

c. Level of Influence

The ability to influence emission reductions may help determine which financial transactions to include in the inventory boundaries. The concept of reporting emissions over which the reporter has influence does have precedence in corporate GHG accounting. Thresholds based on influence may be related to the size of a transaction, the type of borrower, relationship with a client, or frequency of a borrower's capital market activities.

2. Evaluating Practical Challenges

Even after evaluating organizational boundaries and deciding which types of products and services are relevant, financial institutions may find it difficult to address certain practical issues. Practical challenges often may be overcome through effective prioritization, determination of relevance, and prudent estimation. Although we do not provide specific guidance to overcome practical challenges, we encourage financial institutions to keep in mind the concept of relevance, the two business objectives, and inputs from the future multistakeholder process.

a. Determining an Investee's Emissions

- Transactions in which the uses of funds are unknown or general.

  The overall volume of corporate transactions with known uses of funds, versus unknown uses of funds, is substantial. Thus, by not including general-purpose corporate transactions, financial institutions may miss a significant category of borrowers and thus not satisfy the GHG accounting's notion of "relevance." Certainly, emissions attributable to the transaction are less clear, although company-level or business unit–level data may be used as a substitute if available. Using the relevance tests described earlier in this section may be helpful.

- Government financings

  Government financings pose an additional layer of complexity. If the capital is not tied to a specific project, determining the appropriate GHG emissions is challenging. If the structure of a government transaction resembles a project's financial structure (e.g., financing an infrastructure project), GHG emissions may be identified more easily. We encourage users to support accounting for project-specific government emissions but to use caution when considering broader emissions until further guidance is developed. Project emissions would fall under Scope 1 or Scope 3, depending on the organizational boundary approach and whether the capital is related to debt or equity.

- Retail lending

  Obtaining GHG information for retail lending also presents a problem because robust calculation protocols are not available for individuals. Because of the limited availability of data and the structure/concept of a retail calculation, it may be difficult and impractical to account for these transactions. Accordingly, we discourage financial institutions from developing an inventory that considers retail lending but, instead, to note this factor in the final inventory report if retail lending comprises a significant portion of the reporter's business activities.

b. Time Frame

There will likely be a discrepancy between ongoing GHG emissions over a life of a project and the term of the transaction. An equitable accounting method may look at the transaction over the time during which the capital provider derives an economic benefit. The GHG emissions reported may be calculated on an average or end-of-year basis.

Using minimum time-frame thresholds as presented in section III may be prudent. For example, a minimum threshold of one year could be established to limit the inclusion of transactions like revolving credits, which usually have maturities of less than 365 days and allow the borrower to draw down, repay, and reborrow. The benefit from including these transactions sometimes may be outweighed by the cost of monitoring and updating the information.

c. Data Availability and Use

If data are not already available publicly, financial institutions should ask the company to provide GHG information and, if it is not available, only then resort to estimation. Entities that have developed corporate GHG inventories will likely have available Scope 1 and 2 data, with perhaps some information about some Scope 3 emissions. For efficiency and accuracy, however, financial institutions may find it most practical to focus on Scope 1 and 2 emissions.

If direct emissions data or inventory information is not available, the GHG Protocol (www.ghgprotocol.org) can provide quantification guidance and a range of calculation tools to calculate emissions based on activity data (such as fuel use). The GHG calculation tools include cross-sector tools, which are applicable to sources common to many different sectors (such as stationary fuel combustion and mobile fuel combustion, and sector-specific tools) which are designed to calculate emissions in sectors such as aluminum, iron and steel, cement, oil and gas, and pulp and paper.

When data are not available, we encourage financial institutions to make a public note of this.

d. Types of Financial Products

Accounting for equity transactions is generally straightforward, since corporate GHG accounting concepts are closely related to the financial concept of equity. Debt transactions, however, are more complicated because of the many different products (e.g., bonds, term loans, revolving credits) and special features — such as the type of borrower or the maturity of the transaction — which should be analyzed when considering whether to include them in a GHG inventory. Project finance transactions also entail additional challenges, as shown in box 2. While further guidance is developed, financial institutions should narrow the scope of products included in the inventory, using the principle of relevance.

V. Calculating and Reporting Emissions, and Using the Inventory

Once a financial institution (1) has appropriately defined its organizational boundaries (section III), (2) has focused on the relevant products and services (section IV), and (3) has identified the relevant transactions to include in the framework (section IV), the next step is devising a sensible method for *calculating* the final emissions number to report. Once a final emissions number is found, the financial institution should consider the bigger picture: How should it report the final inventory, and how should it use the information contained in the inventory?

This concluding section addresses three issues: (1) calculating the final emissions number, (2) reporting the inventory, and (3) applying and appropriately using the final emissions number.

1. Calculating the Final Emissions Number

One way to calculate the final emissions number is to consider the capital structure of the GHG-emitting investee and its relationship to the capital provider and, on this basis, make a proportional calculation. There are two ways to do this, as summarized in figure 4. We acknowledge that there are additional challenges, including the time frame of emissions and investments, which we plan to discuss during the multistakeholder process.

a. Separate Equity and Debt Capital

Using this option, the percentage of emissions apportioned to equity capital providers — regardless of investment amount — would be the percentage of equity capitalization relative to the investee's total capitalization (~1 percent to 100 percent). Similarly, the percentage of emissions apportioned to the debt capital providers would be the percentage of the investee's debt capitalization (0 percent to ~99 percent). This will result in double-counting the emissions in the capital structure of the GHG-emitting company and triple-counting the overall emissions. In the case of debt investments, this is not a problem, since the emissions will fall under Scope 1 for the GHG-emitting company and under Scope 3 for all investors. For equity investments or if multiple business areas hold investments in the same investee, the double-counting and triple-counting are more problematic. The advantage of this method is that it is simple, in that the financial institution does not need to consider changes in its investment levels in a particular company over time.

BOX 2 Challenges for Project Financing

Applying the methods presented in this brief may be difficult for project finance transactions. It is unclear whether an investor is responsible for only project-related emissions or the emissions of the project sponsor more generally. Another problem is dealing with cases in which a financial institution provides specific capital for a sponsor's project as well as general capital to the sponsor. It may be difficult to ensure that these emissions are appropriately apportioned. Finally, the size and proportion of investment may change over time. These issues will be considered in the future development of guidance for financial institutions.

b. Separate Equity and Debt Capital and Consider Investment Proportion

This process separates equity and debt capital into their proportional shares of total capitalization and then consider the proportion of an investor's investment. Compared with the first method, this alternative (which uses total capitalization as the denominator) minimizes double-counting. We believe that this alternative provides a more appropriate structure when accounting for investment-related emissions in the aggregate.

The results of this final calculation may fluctuate, however, depending on the values chosen for equity and debt. Would book or market values be used for the calculation? And what is the time period for the financial statement? These issues may make it difficult for investment-related emissions to achieve a primary GHG-accounting objective: measuring, managing, and reducing emissions over time. But these accounting irregularities are important to consider, as they also may inhibit a valid comparison of GHG information across multiple inventories.

2. Reporting the Final GHG Inventory

Scope 3 Reporting: To ensure that a financial institution's inventory satisfies the principle of relevance, we encourage financial institutions to report all *relevant* Scope 3 emissions, even though it is not a requirement of the *Corporate Standard*. Scope 1 and Scope 2 emissions must be reported according to the *Corporate Standard*.

Inventory Methodology: Just as the notes to financial statements are critical in financial accounting, the notes to a GHG inventory report are critical to helping its users understand (a) how the final number was calculated and (b) how the information presented should be processed and analyzed. Maintaining transparency and completeness in describing this methodology and the results (including an explanation of any changes in the results from the previous year/s and limitations in the methodology) will help ensure that its users accurately interpret and use the numbers presented.

Use of Ratio Indicators: The *Corporate Standard* requires reporting absolute emissions, but reporting ratio indicators is optional. But for financial institutions, it may be prudent for both internal and external users to report and review, respectively, ratios. These ratios may help evaluate performance over time and improve comparability among different business segments.

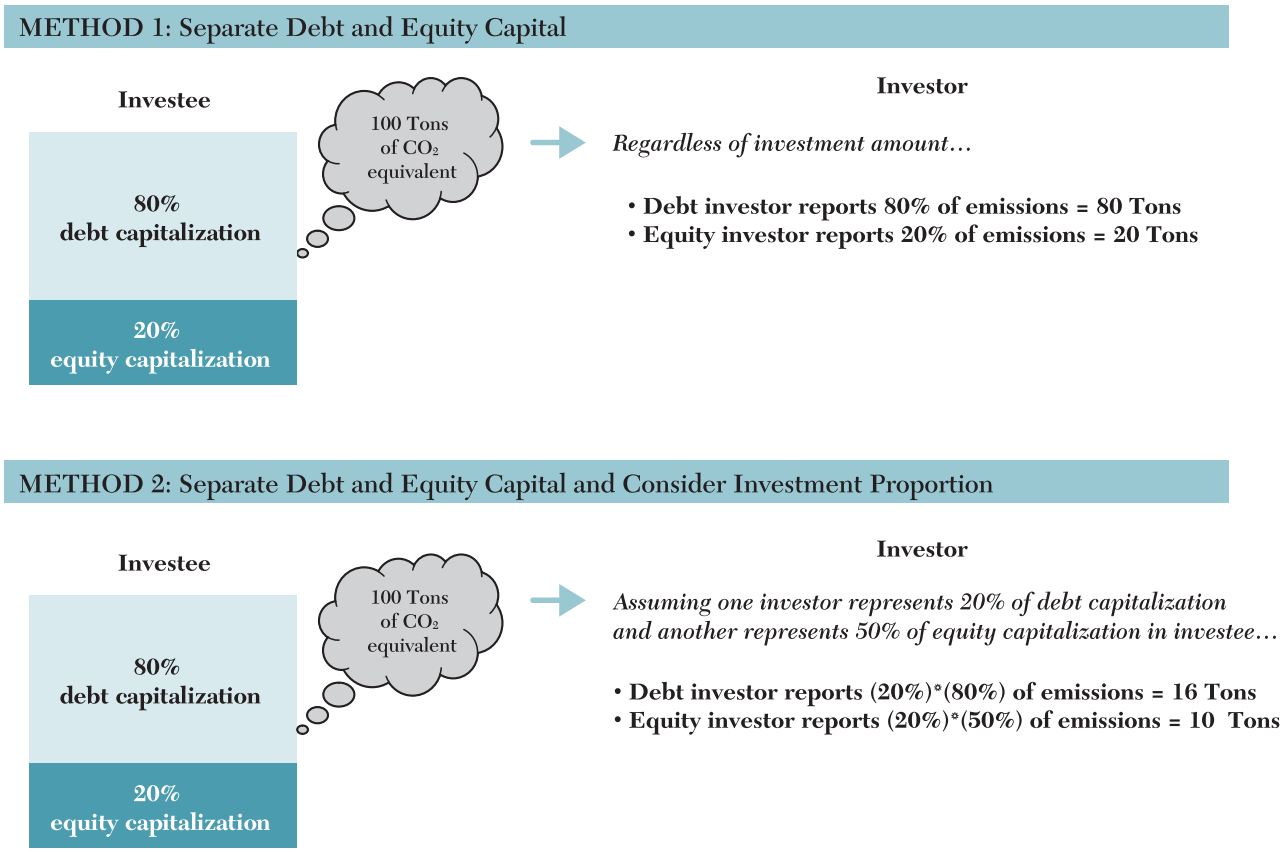
3. Using the GHG Inventory

The GHG inventory should be used as an internal tool to set GHG reduction targets and track emissions over time, and as an external tool for reporting to stakeholders. As an internal tool, a robust system allows a financial institution to track its environmental performance over time and to set targets for emissions reductions. As an external tool for stakeholders, a robust system can showcase a commitment to environmental stewardship if it captures a financial institution's efforts to invest in a low-carbon economy.

Both stakeholders and financial institutions should be careful not to incorrectly interpret the final GHG number. For example, users should be careful when identifying causal relationships when the emissions inventory level increases or decreases. A decrease in the overall inventory level could be caused by a lower level of aggregate investments rather than a true proportional reduction in GHG-intensive investments (this concept is commonly referred to as *GHG intensity*).

Even more important, GHG accounting does not translate into a full assessment of the financial implications of climate change. Assessing the financial implications of climate change is challenging, as it requires understanding not only the GHG emissions of an investment but also how policy and market dynamics affect its value. A company's ability to compete in a carbon-constrained world depends on a variety of factors such as, managing regulatory costs, being able to avoid litigation or threats to corporate reputation, managing risk in its supply chain, investing in low-carbon assets, creating new technologies and products, and being able to hedge against physical climate change risk.

FIGURE 4 | Calculating GHG Emissions



Source: WRI.

Financial institutions and stakeholders should be careful especially when comparing emissions across peer groups. Given the vast array and dynamic nature of products and services offered by financial institutions, it will be very challenging, if not impossible, to compare different financial institutions' emissions levels, especially at a particular time.

We encourage GHG inventory users—both financial institutions and stakeholders—to concentrate on the methods by which the inventory is developed and on managing climate risk rather than focusing solely on the final emissions number. Peer comparisons should be made only if, among other factors, inventory methods and business areas are comparable and GHG intensity is considered.

VI. Final Thoughts and Next Steps

Final Thoughts

Developing a robust GHG inventory is likely to yield strategic benefits, as it will help financial institutions assess and manage their reputational and investment risk.

At the same time, the practical and conceptual challenges are clear. Our advice for financial institutions is to start thinking about an inventory using the business areas and methods described here but to tailor these methods to relevant business lines and products/services. Ultimately, users should ensure that their company

- Uses an inventory that minimizes business risks while demonstrating consistency and practicality across all business lines.
- Develops its inventory with its stakeholders' input and review.
- Provides a faithful, true, and fair account of GHG emissions.

Next Steps: Definitive Guidance and Standards

To satisfy internal users (i.e., financial institutions) and external users (e.g., investors, clients, NGOs, regulators), more definitive and standardized guidance is needed. WRI/WBCSD, through the GHG Protocol Initiative, plans to create this guidance through a multistakeholder process involving both internal and external users. We encourage financial institutions to contribute to this stakeholder process, and welcome any comments on this accounting issue brief.

Meanwhile, the Greenhouse Gas Protocol Initiative is planning to publish (expected in 2010) a new standard for Scope 3 emissions accounting and reporting, applicable to all sectors, also through a multistakeholder process.

Please contact Shally Venugopal or David Rich for more information on getting involved in either stakeholder process.

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