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2012 Greenhouse Gas Inventory and Sustainability Report

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WRI.ORG

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EXECUTIVE SUMMARY

Extreme weather events, including record-breaking temperatures, prolonged droughts, and powerful storms, are occurring around the world with startling frequency and mounting costs. These often devastating events are just some of the impacts of a global climate that is changing because of anthropogenic greenhouse gas (GHG) emissions.¹ To limit dangerous climate change impacts, global temperature must be stabilized at 2 degrees Celsius above pre-industrial levels—a goal that requires dedicated global collaboration on GHG reductions.² As an organization dedicated to protecting Earth's environment and improving people's lives, the World Resources Institute (WRI) has long recognized our obligation to reduce GHG emissions in our own operations.

In 1999, WRI became one of the first nongovernmental organizations (NGO) to complete an inventory detailing its annual GHG emissions. Since then, it has continued to drive internal sustainability management, most notably through the [Sustainability Initiative](#),

which helps ensure the Institute is “walking the talk” on meeting GHG reductions and leading others toward a more sustainable future. In November 2011, WRI set three absolute reduction targets relative to our 2010 base year inventory, which we aim to achieve by 2020:³

- 50 percent reduction in emissions from purchased electricity;
- 20 percent reduction in emissions from business travel; and
- 20 percent reduction in emissions from other scope 3 categories.

This report provides a comprehensive description of WRI's annual GHG inventory covering the 2012 fiscal year (October 1, 2011 to September 30, 2012).

WRI's 2012 inventory measures 5,457 metric tons of carbon dioxide equivalent (mt CO₂e) associated with our yearly value chain

(scopes 1, 2, and 3) activities. This is a 3 percent decrease from our 2011 GHG inventory, putting us on the right path toward emission reductions (see figure 1). Our reductions are due mostly to a decrease in purchased electricity (scope 2), in part because of new energy-saving actions, but also influenced by a short-term cut in leased office space. The completion of office renovations before 2012 also led to a drop in emissions from purchased goods and services compared to 2011 levels. However, WRI has grown significantly, with 13 percent compound annual growth in expenses over the past 6 years. Corresponding emissions increases from 2010 to 2011 puts our total emissions still 14 percent above the 2010 base year inventory.

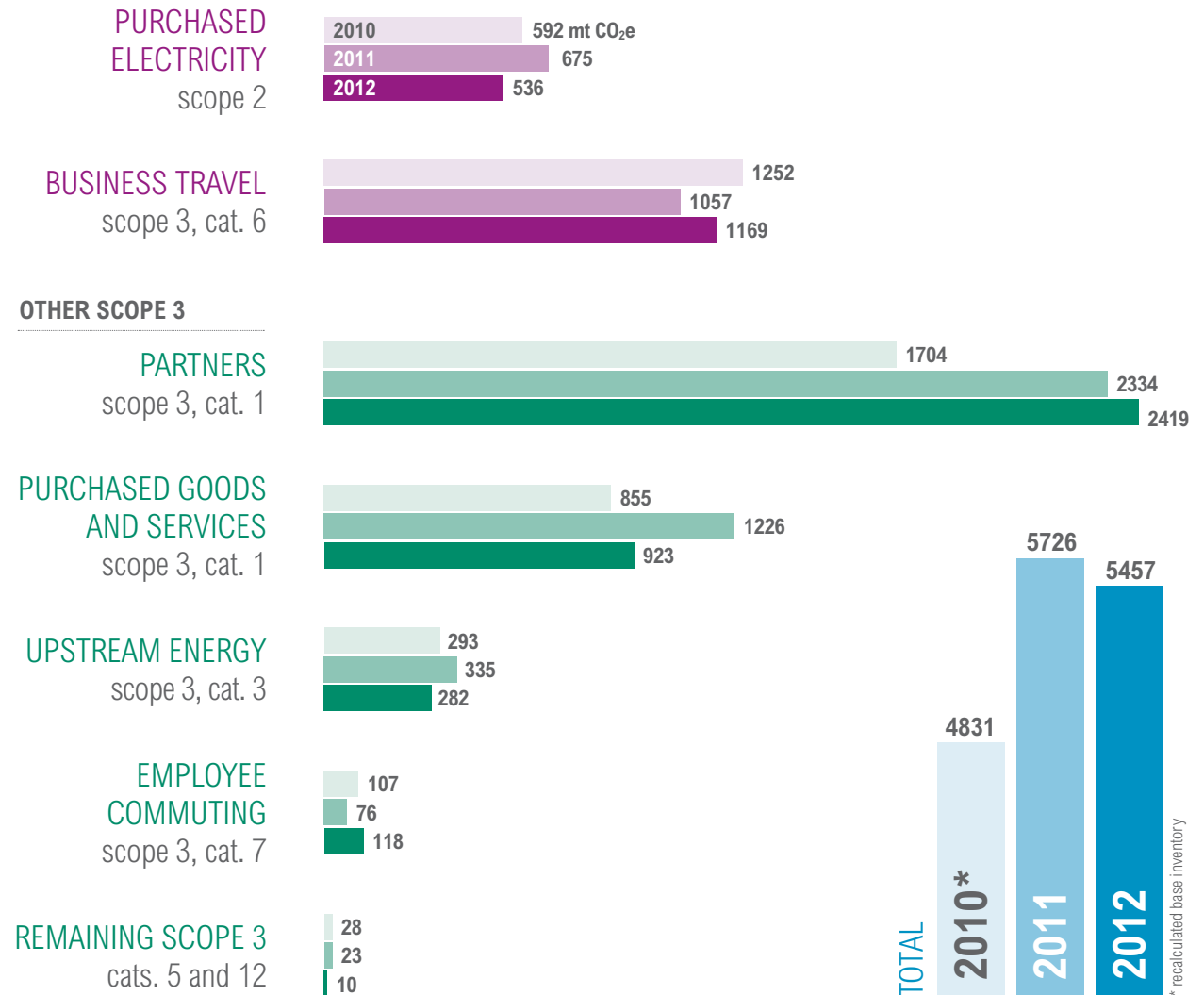
To meet our reduction commitments, WRI is identifying and implementing strategies to target reductions in energy use, business travel, and purchased goods and services. This report highlights one such strategy: engaging with our suppliers and partners.

This allows us to learn more about their GHG inventories and encourage reporting and reduction targets, which in turn reduces emissions in our supply chain. Through two pilot projects, we learned valuable lessons that will help us move forward; these lessons may also prove valuable to other organizations that wish to engage with their supply chain.

Beyond working toward meeting our absolute reduction targets, we continue to quantify and address other sustainability issues. In 2012, we continued to calculate WRI's nitrogen footprint, increased our understanding of the paper products used in our operations, and reduced the environmental impacts of our onsite events. Moving forward, we intend to continue improving metrics and methodology around our GHG inventory and other sustainability efforts.

WRI's anticipated growth in the coming years will not make it easy to meet our targets. However, WRI is determined to aggressively pursue reductions in our own environmental impact while achieving positive changes in the world and advancing our mission.

Figure 1 | GHG Emissions Changes in WRI's Targeted Sources (mt CO₂e)



INTRODUCTION

Over the last two decades, global understanding of climate change risks and impacts has transformed from a remote, future possibility to a significant, worldwide reality. Climate change is “already a serious threat to food, water, ecological and energy security, and to people’s lives and property.”⁴ Many of these threats result from record-breaking temperatures, prolonged droughts, and powerful storms, amplified by global climate change.⁵

Reducing anthropogenic greenhouse gas (GHG) emissions, a primary cause of climate change, is crucial to reducing the risk of significant and extreme climate impacts. However, recent reports indicate a gap between existing emissions reductions and the reductions needed to limit warming to 2 degrees Celsius above pre-industrial levels.⁶ Governments, companies, and individuals must act urgently to reduce emissions. As an organization committed to an equitable and prosperous planet for current and future generations, WRI not only calls on the global community to reduce GHG emissions,

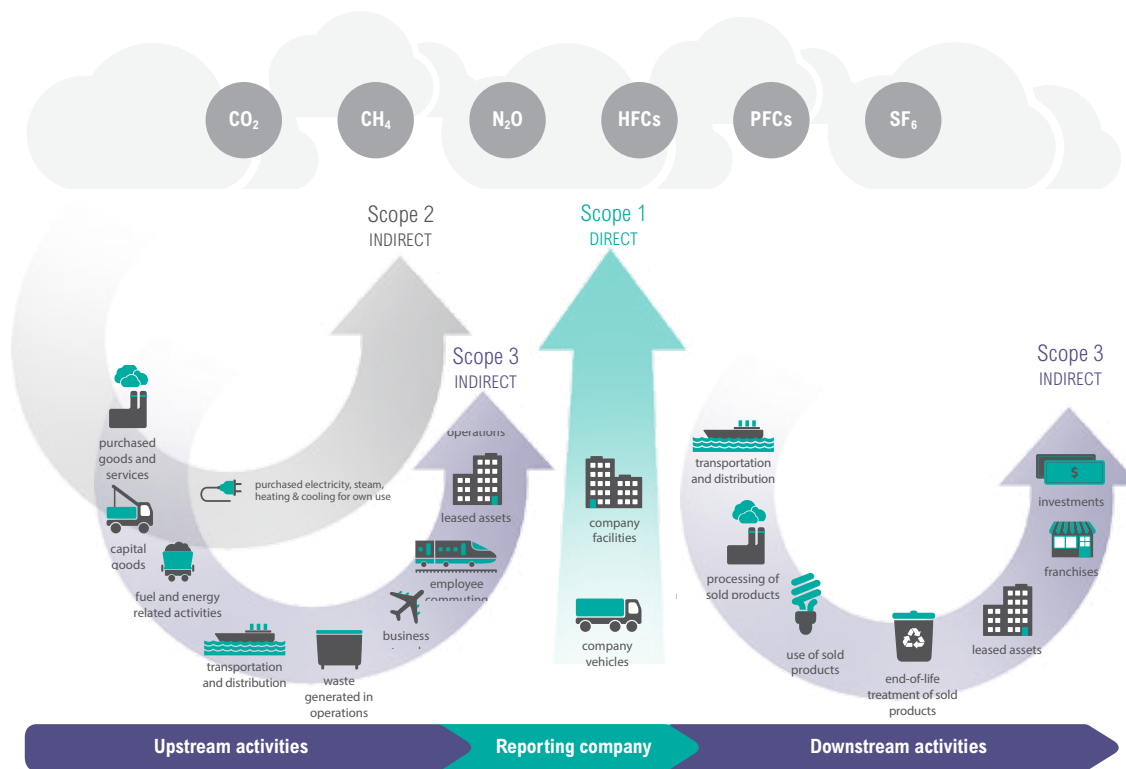
but strives to reduce our own impact. Our Sustainability Initiative, launched in 2010, is a key part of our efforts to reduce WRI’s environmental impact.

WRI has conducted an annual GHG inventory since 1999. In 2010, we redefined our base year after completing the first full value chain inventory (scopes 1, 2, and 3).⁷ We set three absolute⁸ reduction targets around the most significant sources of GHG emissions identified in our 2010 base year inventory:

- 50 percent reduction in emissions from purchased electricity (scope 2);
- 20 percent reduction in emissions from business travel (scope 3, category 6); and
- 20 percent reduction in emissions from other scope 3 sources, excluding business travel.⁹

Reducing anthropogenic greenhouse gas (GHG) emissions, a primary cause of climate change, is crucial to reducing the risk of significant and extreme climate impacts.

Figure 2 | Overview of GHG Protocol Scopes and Emissions Across the Value Chain



Notes: From the GHG Protocol *Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011)*. Upstream activities are purchased by the company, while downstream activities are sold by the company.

WRI's annual Greenhouse Gas Inventory and Sustainability Report quantifies and analyzes the emissions attributable to WRI's business activities and tracks progress toward our 2020 targets. We conduct a full GHG inventory, using the GHG Protocol's¹⁰ *Corporate Accounting and Reporting Standard* and the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*. Figure 2 shows the 15 scope 3 categories and the relationship between scopes 1, 2, and 3. More information on scope 3, including definitions of each category, is available at the [GHG Protocol website](#).

WRI's 2012 GHG inventory report is organized into seven sections:

1. Introduction
2. WRI's 2012 greenhouse gas inventory results
3. 2012 inventory interpretation
4. Progress toward our 2020 targets
5. Reduction spotlight
6. Other sustainability efforts
7. Conclusions

The appendix contains detailed descriptions of the calculations for the 2012 inventory, details on WRI's 2010 base year inventory, and examples of survey tools used in our partner and supplier engagement pilots.

WRI'S 2012 GREENHOUSE GAS INVENTORY RESULTS

This presentation of our inventory report follows the scope 3 template provided by the GHG Protocol, which also includes information pertinent to our scope 1 and scope 2 inventory. For more information on the scope 3 standard, and to download the standard and reporting template, please visit www.ghgprotocol.org/standards/scope-3-standard.

Part 1 | Descriptive information

DESCRIPTIVE INFORMATION	ORGANIZATION RESPONSE
Organization name	World Resources Institute (WRI).
Description of the organization	WRI is a global research organization that works closely with leaders to turn big ideas into action to sustain a healthy environment—the foundation of economic opportunity and human well-being.
Chosen consolidation approach ¹¹	Operational control.
Description of the businesses and operations included in the organizational boundary	WRI is a global organization with staff around the world in a variety of working environments. To address this in a practical way, we have defined operational control to include all offices with 5 or more WRI staff in a shared location. For the 2012 inventory report this includes WRI's global office in Washington DC; the WRI China office in Beijing; and the WRI India offices in Bangalore, Mumbai, and New Delhi. For example, if an office is under our operational control, its electricity use is considered part of WRI's scope 2. If an office (or individual staff) is outside our operational control, their contributing emissions are included as part of scope 3. It is important to note that even though these offices are under our operational control, there are still data limitations to overcome. See section 2.2 for more information.
The reporting period covered	Fiscal Year 2012 (October 1, 2011 to September 30, 2012).

Part 1 | **Descriptive information (cont.)**

DESCRIPTIVE INFORMATION	ORGANIZATION RESPONSE
A list of activities included in the report	Scopes 1 and 2. Scope 3 sources are purchased goods and services, fuel and energy-related activities, waste generated in operations (global office only), business travel, employee commuting, end-of-life treatment of sold products. See below for a list of exclusions.
A list of activities excluded from the report (Please see Section 2.2 for justification for their exclusion.)	<ul style="list-style-type: none"> ■ WRI China's scope 1 and waste generated ■ WRI India's scope 1, 2, and waste generated ■ Emissions associated with individual payments (purchasing goods and services) totaling less than \$6,000 ■ Emissions associated with purchases made on the corporate credit card account (purchased goods and services) ■ Upstream cradle-to-gate emissions associated with diesel fuel (scope 3, category 3) ■ Scope 3 emissions from global offices not captured in WRI's centralized accounting systems
Once a base year has been established, the year chosen as base year and rationale for choosing the base year	A 2010 base year was selected. See choice of base year for rationale.
Emissions in the base year	See Appendix D.
Once a base year has been established, the chosen base year emissions recalculation policy and context for any significant emissions changes that trigger base year emissions recalculations	WRI will recalculate its base year emissions if there are significant changes to our GHG inventory following the guidance given in the GHG Protocol Corporate Standard and Scope 3 Standard. We define <i>significant</i> as a change or series of changes that impact our base year inventory by more than 5%.

Part 2 | Greenhouse Gas Emissions Data

The following information is also reported publicly to CDP (formerly known as the Carbon Disclosure Project).

[Click here to access WRI's CDP 2012 survey response.](#)¹²

SCOPES AND CATEGORIES	METRIC TONS (mt) CARBON DIOXIDE EQUIVALENTS (CO ₂ e)
Scope 1: Direct emissions from owned/controlled operations	<1
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling	536
Upstream (purchased) scope 3 emissions	
Category 1: Purchased goods and services ¹³	3342
Category 2: Capital goods	Accounted for in category 1 (purchased goods and services)
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	282
Category 4: Upstream transportation and distribution	Accounted for in category 1 (purchased goods and services)
Category 5: Waste generated in operations	<1
Category 6: Business travel	1169
Category 7: Employee commuting	118
Category 8: Upstream leased assets	Accounted for in scope 2 and category 1 (purchased goods and services) ¹⁴

SCOPES AND CATEGORIES	METRIC TONS (mt) CARBON DIOXIDE EQUIVALENTS (CO ₂ e)
Downstream (sold) scope 3 emissions	
Category 9: Downstream transportation and distribution	N/A
Category 10: Processing of sold products	N/A
Category 11: Use of sold products	N/A
Category 12: End-of-life treatment of sold products (publications)	10
Category 13: Downstream leased assets	N/A
Category 14: Franchises	N/A
Category 15: Investments	N/A (Improving the sustainability of our investments is being addressed independently from our GHG inventory)

Part 2 | Greenhouse Gas Emissions Data (cont.)¹⁵

GREENHOUSE GAS EMISSIONS ¹⁶	CARBON DIOXIDE (CO ₂)		METHANE (CH ₄)		NITROUS OXIDE (N ₂ O)		HYDROFLUORO-CARBONS (HFCs)		PERFLUORO-CARBONS (PFCs)		SULFUR HEXAFLUORIDE (SF ₆)	
	mt CO ₂	mt CO ₂ e	mt CH ₄	mt CO ₂ e	mt N ₂ O	mt CO ₂ e	mt HFC ¹⁷	mt CO ₂ e	mt PFC	mt CO ₂ e	mt SF ₆	mt CO ₂ e
Scope 1	0.20	0.20	8.2e-06	2.1e-04	1.6e-06	4.8e-04	0.0000051 (HFC-134a)	0.007	N/A	N/A	N/A	N/A
Scope 2	536.4	536.4	0.01	0.3	0.01	2.6	N/A	N/A	N/A	N/A	N/A	N/A

Part 3 | Biogenic CO₂ Emissions Data (If Applicable)

Biomass, such as trees, plants, and food crops, emit biogenic CO₂ when they are combusted, used in biological processes (e.g., fermentation), or allowed to decompose at the end of their life. WRI does not use biogenic fuels (e.g., biodiesel) in our operations, so no biogenic emissions are applicable to scope 1. Scope 3, category 5 (waste generated in operations) does include food and paper waste that is subsequently treated, and the treatment of that waste does result in biogenic CO₂ emissions in local landfills. How-

ever, the data used to estimate category 5 is based on recycling and residual waste totals provided by our waste management service, which do not disaggregate between biogenic and non-biogenic waste. Therefore, we have included biogenic emissions associated with waste treatment as part of the scope 3 emissions listed in part 2. For more information on the data used for category 5, please refer to Appendix A.

Part 4 | Description of Methodologies and Data Used

A description of the methodology and data used for the inventory is detailed in Appendix A. Notably, the 2012 inventory used new emissions factors developed by WRI China to improve China-based GHG calculations.¹⁸ We are now using a factor that is more location specific (North China Grid). Using this updated emissions factor decreased our inventory results, but not significantly enough to warrant a base year recalculation.

Choice of base year

WRI has selected a single year (2010) as the base year for its GHG inventory. While WRI had reduction targets that pre-date 2010, the Sustainability Initiative and WRI's management decided to establish new reduction targets based on the results of the first full value chain inventory, completed in 2010.

Justification of inventory exclusions and data limitations

The activities listed below were excluded from our inventory results. Some were excluded because they are considered insignificant, while others were excluded because of data limitations. These activities may be addressed in future GHG inventories as additional data become available or an activity grows.

- Scope 1 emissions from WRI China and WRI India: Scope 1 emissions from WRI's global office in Washington, DC account for less than 1 percent of WRI's total inventory, therefore it can be assumed that scope 1 from other, much smaller offices would also be insignificant.
- Scope 2 from WRI India: This is the first year that we have included India in our operational boundary. No systems were in place to collect electricity data. We will work to fill this data gap for the 2013 inventory.
- Emissions associated with individual payments (scope 3, category 1: purchasing goods and services) totaling less than \$6,000: Accounting for these payments, more than 500 in all, would be very time consuming. Moreover, they represent less than 4 percent of total purchases; accordingly, they were deemed insignificant. This exclusion is consistent with the 4 percent of purchases excluded from our 2010 and 2011 inventories for the same reason.
- Emissions associated with purchases made on the corporate credit card account (scope 3, category 1: purchased goods and services): Our yearly account summary includes one aggregated payment to our credit card provider. However, many purchases on the corporate credit card are accounted for in other parts of this inventory, including business travel, catering, and office supplies. It would be too time intensive to separate out all the charges, and including this payment to the credit card provider risks double counting emissions. However, we recognize that some purchases are not captured in the inventory following this approach.
- Scope 3, category 3 (Upstream cradle-to-gate emissions associated with diesel fuel): Combustion accounts for approximately 80 percent of the total life cycle GHG emissions of diesel fuel. Because the combustion of diesel accounted for in scope 1 is minimal, we can assume that the upstream emissions are insignificant and are excluded from the inventory.
- Scope 3, category 5 (waste generated in operations) emissions generated by international offices are estimated to account for less than 1 percent of the total inventory and was therefore excluded given the challenges and costs associated with data collection.
- Other Scope 3 activities occurring in our international offices that are not captured through WRI's centralized accounting systems: Goods and services, including business travel, that are not captured within our centralized purchasing systems are excluded because of the lack of a data collection system. While likely insignificant now, this will need to be monitored and systems may need to be put in place as we continue to grow our global presence.

The following activities are included in the inventory results, albeit with notable data limitations:

- The global office (DC) scope 1 data, which accounts for less than one percent of our 2012 inventory, could not be realigned to a fiscal year basis.
- The data received from the global office (DC) building manager for refrigerants used in the Heating, Ventilation, and Air Conditioning (HVAC) system is for purchased amounts, not total use for that year. As a result, it may not reflect refrigerants actually used and emitted during the 2012 fiscal year. As scope 1 accounts for less than 1 percent, this variation in data is not considered significant.
- Scope 3, category 1 (Purchased goods and services) emissions were estimated using financial activity data from WRI and environmentally extended input-output (EEIO) tables (see Appendix A for details). Although emissions factors for each sector vary, partners or suppliers falling under the same sector (e.g., civil society organizations) are subject to the same emissions factor, making amount spent or sub-granted the variable factor, rather than performance. We are working to collect primary data on GHG emissions from significant suppliers and partners to improve our scope 3 calculations and target tracking (see Section 4 for more details).
- Scope 3, category 6 (Business travel emissions) emissions in this report only cover air and rail trips arranged through the centralized travel agent employed by WRI's global office or self-reported by staff. We are possibly not capturing all the self-reported travel occurring outside of our centralized system; however, we are continuing to improve our collection. (Please see Section 3 - Progress Toward our 2020 Targets: Business Travel for more details.)

INVENTORY INTERPRETATION

In 2012, WRI's total GHG emissions were 3 percent lower than its 2011 emissions. As in past years, the majority of GHG emissions (90 percent) were from scope 3 sources, up from 86 percent in 2010 and 88 percent in 2011 (see figure 3 for more details).

Figure 3 | Overview of WRI's 2012 GHG Emissions Inventory Results

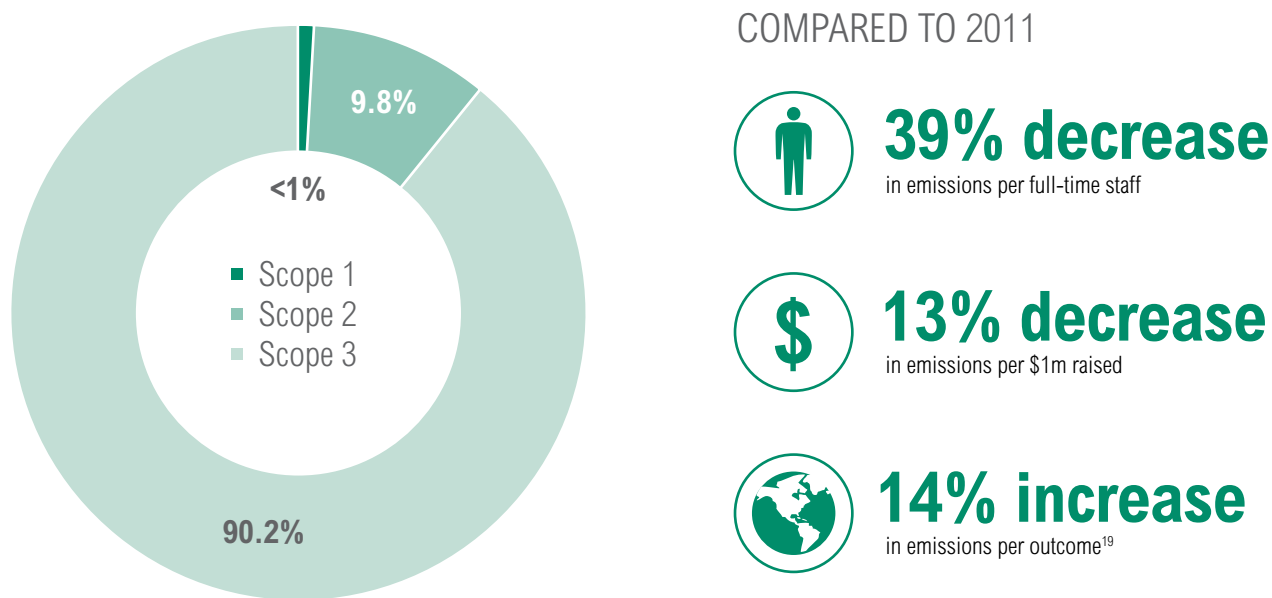


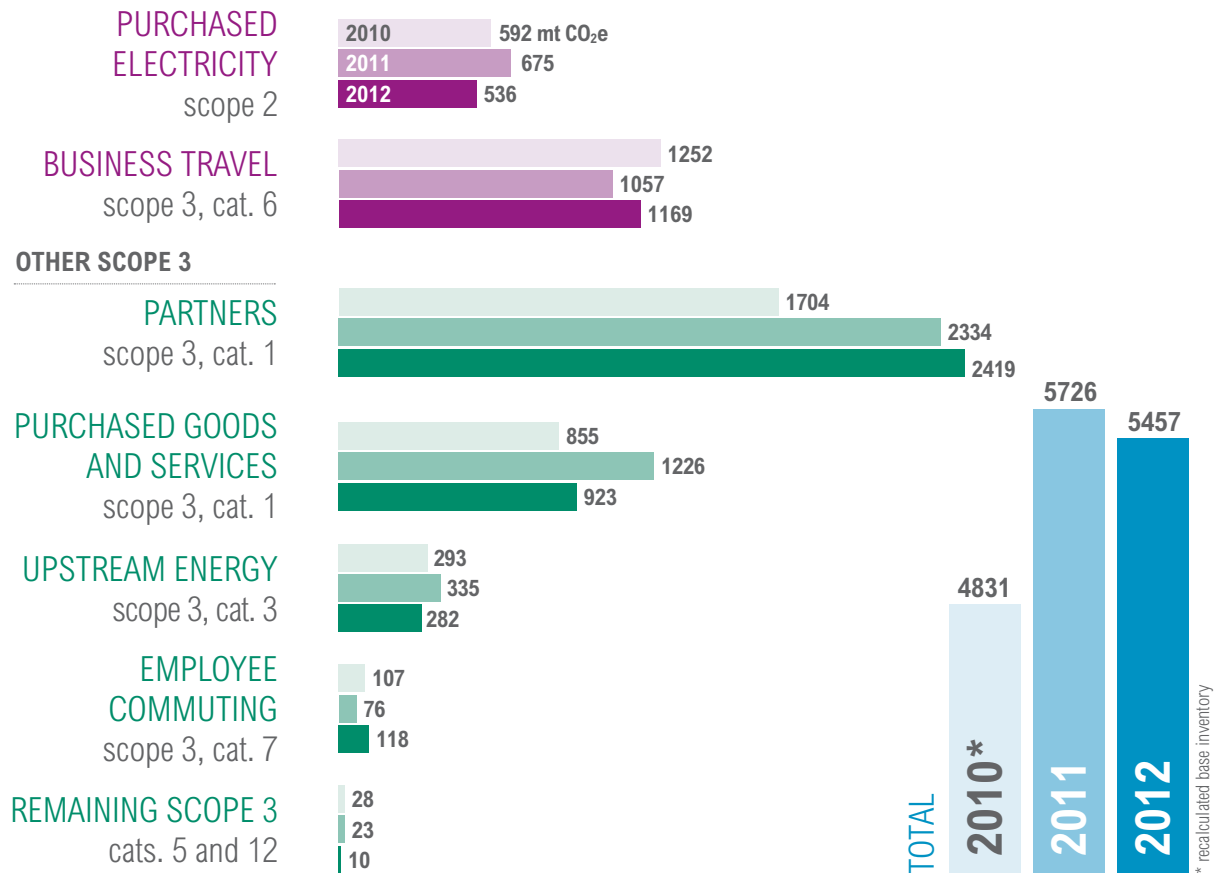
Table 1 | **How does WRI's 2012 GHG inventory compare to 2011?**

SCOPES AND CATEGORIES	% OF INVENTORY (2012)	% CHANGE (2011-2012)	EXPLANATION
Scope 1: Direct emissions from owned/controlled operations	<1%	-18.0%	<ul style="list-style-type: none"> Less diesel fuel used by the emergency generator No refrigerants purchased for the HVAC system during 2012
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling	9.8%	-13.4%	<p>The global office's energy use intensity (kWh of energy consumed per square foot of space annually) decreased 1.8 kWh per ft² due to the following:</p> <ul style="list-style-type: none"> Vacated 4,799 ft² of office space Moved the nightly cleaning schedule forward by several hours to decrease daily building operation time and save energy.
Upstream (purchased) scope 3 emissions			
Category 1: Purchased goods and services	61%	-6.1%	See breakdown below:
<i>Sub-Category: Purchased Goods</i>		-7.6%	<ul style="list-style-type: none"> Less emissions-intensive goods were purchased, including electronics.
<i>Sub-Category: Purchased Services</i>		-26.6%	<ul style="list-style-type: none"> Less emissions-intensive services were purchased, including construction and furniture for office renovations. 13% reduction in overall service spending.
<i>Sub-Category: Partners</i>		3.7%	<ul style="list-style-type: none"> 12% increase in sub-granted funds due to overall WRI budget increases.
Category 3: Fuel- and energy-related activities	5.2%	-10.7%	<ul style="list-style-type: none"> Energy consumption in the global office decreased. See the explanation under scope 2 for more details.
Category 5: Waste generated in operations	<1 %	-35.8%	<ul style="list-style-type: none"> Total waste disposed in landfill decreased by 716 kg (reason unknown).
Category 6: Business travel	21.4%	10.6%	<ul style="list-style-type: none"> Although GHG emissions per staff from business travel are decreasing, the 33% increase in total WRI staff caused an increase in absolute business travel emissions.
Category 7: Employee commuting	2.2%	55.3%	<ul style="list-style-type: none"> The average staff commute increased by 2.5 miles. Increased number of staff at WRI, including accounting for WRI China staff and WRI India staff for the first time.
Downstream (sold) scope 3 emissions			
Category 12: End-of-life treatment of sold products (publications)	<1%	-55.8%	<ul style="list-style-type: none"> "Online-only" WRI publications are increasing in number, decreasing our hardcopy printing.

PROGRESS TOWARD OUR 2020 TARGETS

Our targets cover 99.9 percent of WRI's GHG inventory. Of the three reduction targets set for 2020, only purchased electricity emissions are consistently moving in the right direction. While business travel emissions are still below 2010 levels, the growth from 2011 to 2012 places us closer to our baseline emissions, not further. WRI's "other scope 3" emissions have increased since 2010. This is due almost entirely to an increase in purchased services and partner sub-grants. Figure 4 shows the changes in emissions by source since establishing our baseline in 2010. This section outlines what we are doing now, and what we plan to do in the future, to meet these targets.

Figure 4 | GHG Emissions Changes in WRI's Targeted Sources



**PURCHASED ELECTRICITY (SCOPE 2)
50 percent reduction by 2020**

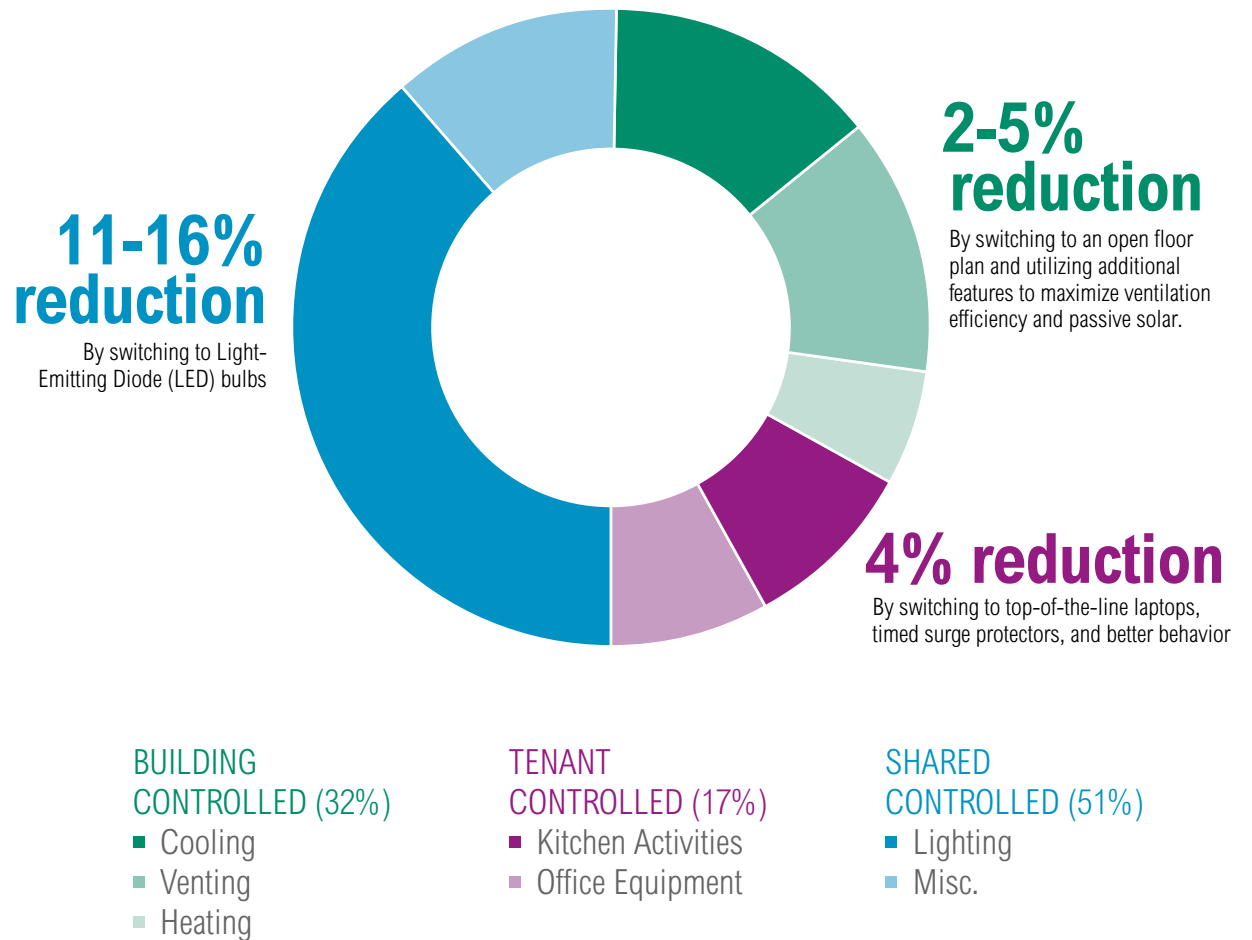
Progress toward target: Our emissions from purchased electricity are 9 percent below our 2010 baseline.

Current efforts: WRI’s global office contributes 96 percent of our scope 2 emissions. Efforts toward our scope 2 targets should, therefore, first take stock of reduction opportunities in that office.

Using average data and statistics for commercial real estate buildings in the Mid-Atlantic, similar to the one that WRI occupies, we mapped the reductions we could achieve through energy efficiency, reduced consumption, and on-site renewables (see Figure 5). We found that even with aggressive consumption and efficiency changes, we may only be able to achieve a 25–30 percent reduction. Some of these changes would be difficult to implement because we do not own our space. It is also unlikely that a renewable energy installation at the DC site would be significant enough to overcome the gap, based on regional energy potential and the total size and cost of a possible system.

When factoring in the addition of new offices over the next few years, we are faced with a sizable gap in achieving our target. Therefore, we have started initial research on innovative options for supporting renewables within the commercial real estate market. We also

Figure 5 | Average building electricity end use and estimated potential reductions (comparable to WRI’s global office)



started monitoring the energy use intensity²⁰ of our building spaces to improve awareness and tracking of energy efficiency changes.

Future focus: We will continue to work with our landlord to implement efficiency changes and better tracking (e.g., sub-metering) to help monitor and track consumption improvements. Additionally, we will begin to flush out potential renewable energy investments or contracts beyond the purchase of renewable energy credits. With this approach, our goal would be to influence the total energy mix of the region. As part of this effort, we are requesting proposals from deregulated electricity market experts for analysis of on renewable energy options for commercial real estate. We continue to communicate with our building manager and landlord, who are interested in the outcome of this project.

Moving forward, WRI's calculation of scope 2 emissions will be influenced by forthcoming scope 2 guidance from the GHG Protocol.²¹ We currently use the location-based method²² to calculate our scope 2 emissions and set our reduction targets. However, the current draft of the scope 2 guidance requires simultaneous reporting of location-based and market-based²³ emissions. If this guidance is finalized with such a requirement, we would report the current renewable energy certificates purchased for our global office separately, using the market-based accounting methodology as well as any innovative renewable energy contracts that go beyond

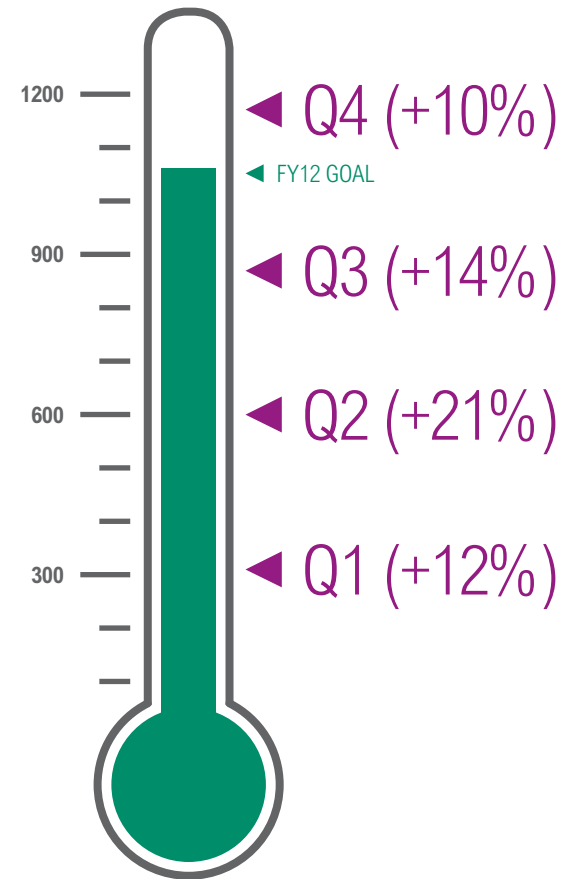
the purchase of renewable energy credits that are identified and implemented through our proposals and research. We are unsure how the new guidance will impact our reduction targets, and we will continue to explore this.

**BUSINESS TRAVEL (SCOPE 3, CAT 6)
20 percent reduction by 2020**

Progress toward target: Business travel emissions are 7 percent lower than our 2010 baseline.

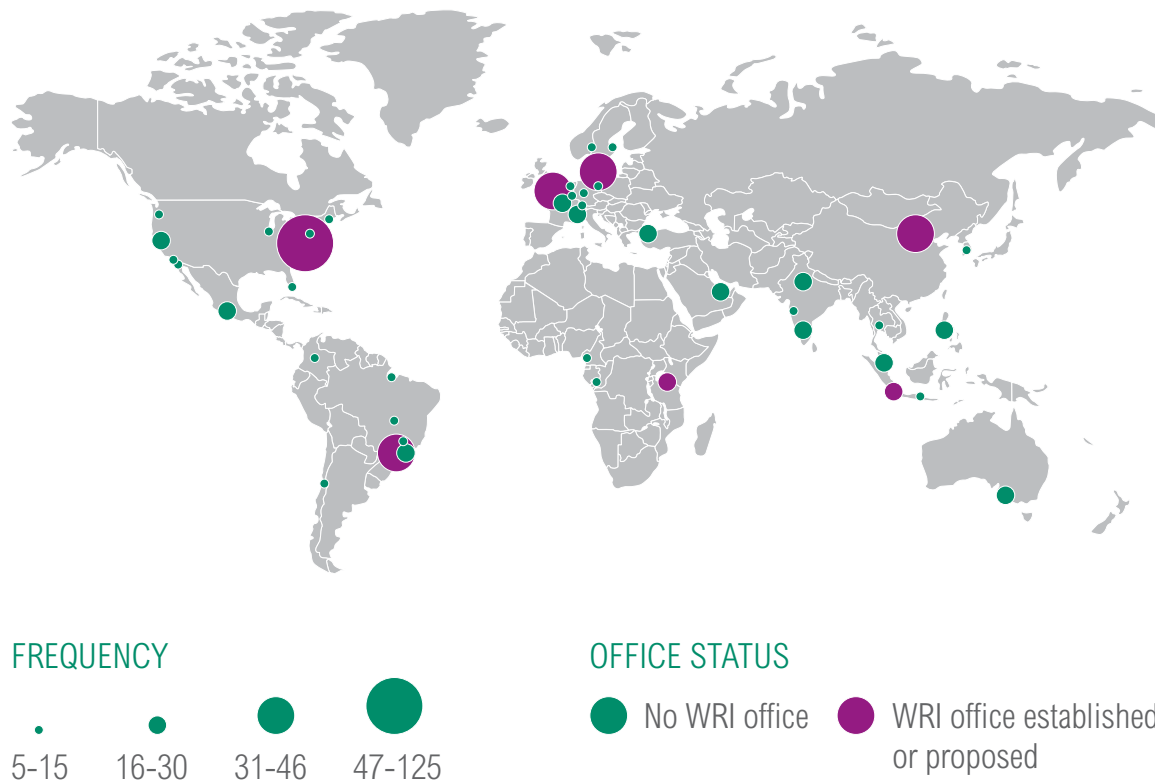
Current efforts: We instituted a soft cap of 8 percent growth for FY2013 travel budgets and reported on progress to staff throughout the year. The goal was to flatline our business travel growth while identifying strategies to reduce business travel in following years. We determined the 8 percent budget growth by accounting for inflation and increased costs of plane tickets and hotel fees, while maintaining the total purchasing power of our funds. By capping travel budgets based on anticipated increases in travel costs, we hoped to see if spending a comparable amount on travel produced stagnant emissions. While the results of the business travel emissions for FY2013 will be reported in our upcoming inventory report, we did find that money spent and emissions were not correlated tightly enough to make this a viable long-term approach. In some cases, lower emissions behaviors can actually result in higher costs, including prioritizing rail over air for short distances or increasing the length of time away on travel to accommodate more meetings.

Figure 6 | WRI 2012 Business Travel Emissions (mt CO₂e)



Note: Number in parentheses indicates the increase or decrease of total emissions from the same point in the previous year. Example, emissions at the close of Q1 are 12% higher than total emissions at the same time in FY2011.

Figure 7 | Where in the World is WRI Traveling (5 trips or more)



To better understand our business travel emissions and develop metrics for tracking changes, we also instituted a number of performance indicators, including emissions per staff and top destinations. Of the five most common city pairs (origin city and final destination city), four are sites of established or soon-to-be established WRI offices (see figure 7).

While we do not have sufficient consecutive data to establish travel trends, we note that in several cases, travel ramped up as new offices were established and began to fall after a few years. Our travel emissions are also heavily skewed toward a small subset of WRI: 10 percent of WRI travelers (staff and paid-for participants) account for 40 percent of our total business travel emissions.

To foster a culture that can effectively use virtual communications in lieu of travel, we continued to improve WRI's conferencing services. In FY2012, one of the 12 conference spaces in the global office was fully upgraded to be video enabled, making it one of four video conferencing spaces within WRI.

Future focus: Although preliminary results from FY2013 show that the 8 percent cap did not flatline our emissions growth as hoped, we found that quarterly progress updates and end-of-year analytics successfully drew attention to WRI’s travel emissions. Accordingly, we will continue updating staff on our progress regardless of whether a cap is in place. To help shift behavior, we will develop and disseminate guidance and tools staff can use to manage their business travel emissions, and we will focus communication efforts on our heaviest travelers. We will, as well, continue to improve the virtual communication experience. Additionally, we will foster high-level conversations across the institute and with other nongovernmental organizations (NGOs) aimed at shifting general culture and operations toward lower carbon travel. We are debating whether a hard or soft cap on emissions is the right approach to drive change, and if so, how those caps should be implemented. By working to incorporate awareness and action on business travel emissions into our transition to a globalized organization, we hope to manage emissions through better planning, being strategic about our hiring, and better leveraging our new and upcoming locations.

OTHER SCOPE 3 (EXCLUDING TRAVEL) 20 percent reduction by 2020

Progress toward target: Our total “other scope 3 emissions” have increased 26 percent from the 2010 baseline, due almost entirely to growth in category 1 (purchased goods and services) emissions. Since category 1 makes up almost 90 percent of our remaining scope 3, our reduction strategies are focused on these activities.²⁴

Current efforts: A pilot program was launched in 2013 to collect primary data from selected partners and willing suppliers, with the assumption that measurement in our supply chain will lead to management and reductions. The pilot program is highlighted in section 5.

Future focus: We intend to continue collecting primary data from key partners and suppliers. Our goal for data collection in FY2013 is primary data for at least 60 percent of emissions from partners and 25 percent from suppliers.²⁵ Details are provided in section 5.

DATA COLLECTION AND PERFORMANCE METRICS

WRI has been calculating an internal GHG inventory for over a decade; however, there is always room for improvement. In 2012, we standardized the Excel tools to be used for each subsequent inventory by creating simple, updatable templates, and completed our full

value chain GHG data management plan. We also improved our data collection and aggregation methodology for scope 3 categories. By circulating quarterly reminders about reporting travel booked outside of our centralized system and shifting data collection from a form to a GoogleDoc, we increased the rate of response and data accuracy. We adjusted the 2012 employee commuting survey to better include staff outside of our global office location. Better-targeted questions increased response rates from WRI China by 75 percent, and our survey included staff responses from WRI India for the first time.

We have also started tracking emissions intensity data relevant to WRI’s overall business operations and individual staff, including:

- Average emissions (mt CO₂e) per outcome²⁶
- Average emissions (mt CO₂e) per revenue raised
- Air travel emissions per full-time employee

By employing these performance indicators, we plan to better track year-to-year changes, target communication to the relevant staff to encourage reductions, sound an alert on increases, and provide more meaningful analysis.

SPOTLIGHT: PARTNER AND SUPPLIER ENGAGEMENT

Category 1 (purchased goods and services) is calculated based on money spent with a particular partner or supplier during the fiscal year (see Appendix A for more details on the calculation methodology). This provides an easy estimate of emissions, but does not account for the efforts (or lack there of) of individual suppliers and partners to reduce their GHG impacts. By collecting specific (primary) emissions data, we can better understand the actual activities that cause GHG emissions, and better identify reduction opportunities. Primary data can also help us vet suppliers and partners by enabling us to consider GHG emissions and other environmental efforts along with existing vetting criteria. However, WRI has not customarily asked its suppliers or partners about their own GHG emissions, nor have we found such data requests to be particularly common among NGOs. The Sustainability Initiative team faced two questions: what data should we try to collect, and what would suppliers and partners be willing to share?

To understand what data are available and determine how best to incorporate them into our inventory, we ran two pilot programs in 2013, looking at 2012 emissions: one for partners and one for suppliers. The methodology and conclusions of those pilots are the focus of this section.

PILOT 1: ENGAGEMENT WITH PARTNERS

After an initial survey of other NGOs—a mixture of WRI’s existing partners and members of the Sustainability Managers Roundtable, we determined that small, international organizations, like many of WRI’s partners, do not typically complete GHG inventories. For WRI’s partners to conduct GHG inventories and share findings, they would need assistance from WRI staff. To gauge the time commitments required by both the participating organization and WRI staff, and to better understand the raw data available, we opted to run a pilot program with a few key partners.

We chose the [EMBARQ network](#) for the pilot, as it accounts for 43 percent of WRI’s total FY2012 sub-grants. The EMBARQ network has a unique relationship with WRI—there is an EMBARQ program within WRI (DC, India, and China), as well as independent Centers in Mexico, Brazil, Turkey, and the Andino region of Peru.²⁷ The EMBARQ program and independent Centers work closely together, which enabled us to easily establish contacts in each center. However, the relationship with the EMBARQ network is not representative of the typical WRI partner relationship. Our pilot engagement with EMBARQ allowed us to gain experience and learn valuable lessons before approaching other partners.

Three network offices—Mexico, Brazil, and Andino²⁸—elected to participate in the pilot by completing their first GHG inventory, with help from WRI’s sustainability staff.

The initial inventories included the following emissions sources:

- Scope 2 (purchased electricity)
- Scope 3, Category 6 (business travel) and
- Scope 3, Category 7 (employee commuting)

Purchased electricity and business travel were clear choices as those sources are often proportionately significant for service-based organizations. We also included employee commuting in the pilot, as it relates directly to EMBARQ's mission and generated considerable interest among the EMBARQ staff.

We conducted the pilot in two phases:

- **Phase 1** consisted of the customization and distribution of GHG inventory tools.
- **Phase 2** consisted of sharing the emissions findings with the Centers and handing off the completed inventory.

PHASE 1: CUSTOMIZATION OF TOOLS AND COLLECTION OF DATA

To support the EMBARQ Centers, we customized our GHG calculation tools (based on the tools provided by the GHG Protocol) for purchased electricity, business travel, and employee commuting, as well as an employee commuting survey. Each tool was tailored based on the format of available data and on country- and office-specific factors.

Employee Commuting: To collect data on the commuting habits of WRI staff, we use an online survey that allows us to gather large quantities of data. Building on this experience, we developed office-specific questionnaires that would help customize data, as commuting practices and office habits vary greatly based on location. By sending the questionnaire (see Appendix B) to each contact, we were able to collaborate on a survey that reflected the needs of each individual office.

We used the resulting survey responses in conjunction with an Excel tool to calculate activity data (total kilometers traveled) per mode and calculate emissions. In some cases, finding accurate country- or region-specific emissions factors was challenging. When accurate factors did not exist, we opted to use internationally accepted factors, including those from the United Kingdom's Department of the Environment and Rural Affairs (DEFRA).

Purchased Electricity: Electricity use data were received in annual or monthly kWh or MWh totals, pulled from past utility bills or by speaking with building landlords. Not all available bills cleanly fell within the timeframe defined for the inventory. The EMBARQ contacts determined the appropriate total energy consumption by estimating average daily consumption over the time period of the bill, and applying it to the number of days falling within the timeframe. Electricity emissions factors for each country were obtained from the International Energy

Association, an intergovernmental energy research organization based in Europe.

Business Travel: Business travel data were received in expense reports or flight distances. Emissions from trip kilometer data were calculated using mode-specific emissions factors (DEFRA for air travel and the appropriate emissions factors for bus and/or train identified in the employee commuting research). For financial data, we applied Carnegie Mellon's environmental input-output lifecycle assessment (EIO LCA) tool.²⁹ It is important to note that using financial-based calculations can potentially overestimate emissions, as travel expenses include undisclosed flight changes or luggage fees.

PHASE 2: INFORMATION SHARING AND INVENTORY HAND-OFF

After inserting the data provided by the Centers into the appropriate spreadsheets to calculate GHG emissions, we presented our findings and the final calculations to the staff of each office. While the Centers retain the right to report their results and we do not present them in detail here, the results generally showed that, as anticipated, business travel and energy use were large contributors. It was more surprising to learn that some offices also had significant emissions from employee commuting.

The results were well received by each office and generated internal discussions, predominantly around employee commuting and busi-

ness travel. EMBARQ Mexico, in particular, requested additional data and is now considering setting a baseline to track emissions. EMBARQ as a whole is considering whether to take a program-level approach to reduce employee commuting emissions or if this effort should remain up to each Center. All the offices received completed inventory packets with the calculation tools and a GHG data management plan outlining the steps necessary to continue conducting their own inventories.

Through this pilot, three key lessons emerged for effectively collaborating on GHG inventories with partners:

- **Choose the right contact:** A contact who finds the project valuable and is interested in the end goals is more likely to make the effort needed to acquire primary data. Staff turnover leading to the departure of established contacts is a concern that we will try to resolve by working with established contacts to develop a secondary connection.
- **Participation incentives might differ:** Requests for data that fall outside established job functions can be a barrier. We found that internal recognition and connections with organizational mission increased interest and participation among the EMBARQ Centers. However, this sense of connection might not be as strong among other WRI partners. Response and participation rates may

rise when partners fully understand the benefits of conducting a GHG inventory, such as, spotting potential efficiency improvements to reduce costs, and enhancing an organization's reputation, making it more attractive to conscientious funders.

- **Country- or region-specific emissions factors are important but not essential to conducting an inventory:** Country- or region-specific emissions factors are not available or accessible in all cases. When specific factors are not available, many companies refer to default numbers provided by reporting protocols. The defaulted emissions factors are not as accurate as the specific factors, but still provide actionable information. However, annual monitoring for new country- or region-specific emissions factors is recommended.

We intend to use these findings to help us scale up our partner data collection by streamlining our approach to partner engagement and minimizing the time and effort needed on behalf of WRI and partner staff.

PILOT 2: ENGAGEMENT WITH SUPPLIERS

WRI works annually with an average of 160 suppliers of varying sizes and locations. To select key suppliers for our second pilot, the Sustainability Initiative team identified companies that have ongoing working relation-

ships with WRI, and that contribute significant emissions to our inventory through purchases. Fifteen companies, totaling 25 percent of WRI's 2012 category 1 GHG emissions, were selected for the pilot.

Because of the relatively large number of suppliers in the pilot, we used a simple questionnaire to request pre-existing, publicly available data. This stands in contrast to our smaller pilot with the EMBARQ Centers, where we engaged more collaboratively. A less collaborative approach was deemed appropriate because unlike our relationship with our partners, we are customers to our suppliers and do not share work outputs. Furthermore, with our larger suppliers, we often lack the close contacts needed to initiate detailed conversations about completing GHG inventories.

The supplier questionnaire featured three information requests. First, did the supplier complete a 2012 GHG inventory? Second, if the supplier did complete an inventory, could the data be accessed through the options listed below? Third, could the supplier provide its 2012 financial data—either total company revenue or the percent of WRI's payment of total revenue?³⁰

If the responding supplier did complete a GHG inventory, GHG data could be provided through:

- A link to publicly disclosed data through a reporting organization, such as [CDP](#) or [The Climate Registry](#);

- A link to an existing corporate sustainability report containing the relevant data; or
- By completing an online-accessible GHG emissions survey.

We emphasize public reporting because it is an efficient way for companies to share data with their customers, and is more likely to be reviewed and verified than an individual survey response. Supply-chain surveys and data requests are becoming increasingly common as the transparency of full product supply-chains increases.³¹ As a result, facility or sustainability staff in major companies can be inundated with data requests from clients and investors, each in a different format, which take time to complete. A pre-made report link reduces the request time and increases response rates overall.

Of the 15 requests, we received data from eight suppliers, totaling 10 percent of total supplier-derived emissions. Of the remaining suppliers, four suppliers indicated that they did not complete annual GHG inventories and three requests went unanswered. Our initial response rate is encouraging, but more work is needed to reach a significant portion of WRI’s suppliers. Although we initially opted for a hands-off approach to collecting data from our suppliers, we may need to engage more closely with individual suppliers moving forward to achieve better results.

ALLOCATING EMISSIONS

Although we have not yet included the primary data collected from our suppliers and partners into the WRI inventory, we know we must adjust each emission total in order to estimate the portion that would fall under WRI’s responsibility. To accomplish this, we need to understand WRI’s role in the revenue of the pilots participants using financial data. To gauge how willing the pilot participants would be to provide the necessary financial information, we included the requests in the pilot. Either total revenue for the appropriate year or the percent of WRI’s payments of total revenue can be used to allocate a portion of the total emissions for WRI when applied to the following formulas:

$$\text{Emissions per dollar [total emissions (mt CO}_2\text{e)/total revenue (USD)]} \times \text{WRI's total expenditure} = \text{allocated emissions (mt CO}_2\text{e)}$$

$$\text{Provided Percent of Revenue [WRI's expenditures/total revenue]} \times \text{total emissions} = \text{allocated emissions (mt CO}_2\text{e)}$$

One supplier provided information on WRI’s percent of revenue, while seven other suppliers directed us to their annual financial reports or disclosures. Financial data related to the EMBARQ Centers was received from WRI and EMBARQ staff. For our next GHG inventory, we intend to examine how to include this allocated data in our inventory results, and how we can track emissions changes over time.

Table 2 | **Results of Partner and Supplier Primary Data Pilots**

	PARTNERS	SUPPLIERS
Total Participating Partners & Suppliers	3	8
Percent of Emissions Covered	36%	11%
Total Emissions from Primary Data (mt CO ₂ e)	360	20005824
Allocated Emissions from Primary Data (mt CO ₂ e) ³²	360	6

TOTAL PILOT RESULTS

The pilot programs took 3 months from planning to completion with the aid of an intern. Completing GHG inventories with the EMBARQ Centers took the greatest amount of time and effort. The initial tools used in the GHG inventories took about 25 hours to complete, not including revisions. While the tools themselves were drawn from existing Excels used within WRI, finding the appropriate emission factors for each location took consideration and consultation. Additional time was spent communicating with the EMBARQ contacts—presentations on the data collection and results, answering and asking questions about the underlying data behind the calculations, and of course, developing buy-in. The surveys to suppliers, while not as time consuming, did require follow-ups with contacts in order to answer questions and secure data. Our initial data are shown in table 2. Without consecutive data, we are limited in our ability to develop meaningful analysis from the results. In the coming years, we will continue to add to this data to track both our own ability to capture primary data for category 1, and participating entities' performance.

POST-PILOT NEXT STEPS

Moving forward, we will need to scale up primary data efforts in order to collect emissions from a majority of category 1 sources. We are still determining the best way to engage with partners; whether a collaborative approach, survey approach, or a mixture

is most appropriate will depend on the capacity of the partners and their relationship with WRI staff. For suppliers, we will increase the number of surveys sent to vendors, targeting companies with significant contributions to our inventory, and sharing GHG Protocol products. WRI is considering using environmental data in the vetting processes for both sub-grants and purchasing in the future, and supporting awareness among suppliers and partners now might ease that transition.

When scaling up data collection, we will need to balance time required with the estimated significance of that data to our total GHG inventory results and reduction efforts. Both forms of engagement—collaborative GHG inventory calculations and supplier surveys—take time and resources. We will need to be strategic in targeting our largest sources of emissions for primary data collection.

We will continue to calculate emissions based on financial data and include both financial-based and primary data emissions in inventories moving forward. This approach is the most comprehensive, as our primary emissions data are limited; we are not capturing data from 100 percent of WRI's vendors and partners, and we do not always receive data for full value chain GHG emissions.

WRI is considering using environmental data in the vetting processes for both sub-grants and purchasing in the future, and supporting awareness among suppliers and partners now might ease that transition.

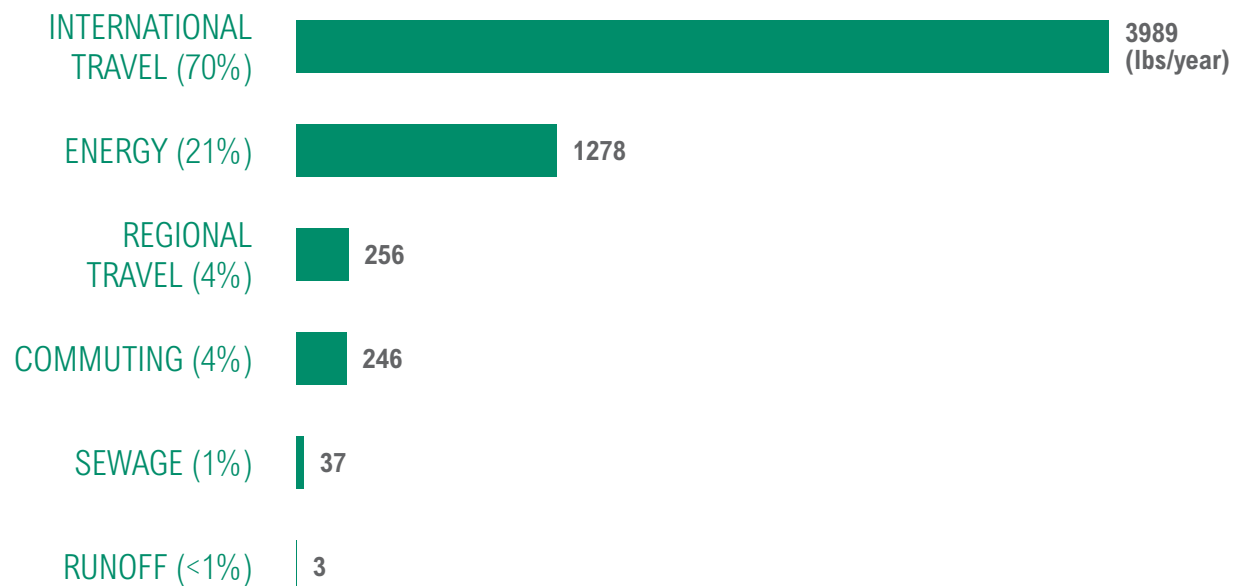
OTHER SUSTAINABILITY EFFORTS

Nitrogen Footprint

WRI's 2012 nitrogen footprint quantifies WRI's global office's nitrogen contribution to our local watershed (the Chesapeake Bay), as well as our global impact from international business travel in pounds of nitrogen released into the environment.³³ The Chesapeake Bay is polluted with excessive levels of nitrogen that result in oxygen-depleted "dead zones." In the summer of 2012, 16.7 percent of the entire volume of water in the bay did not have enough oxygen to support populations of fish, crabs, and oysters.³⁴ By understanding our contribution to the nitrogen problem in the Chesapeake Bay, we can take steps to voluntarily reduce WRI's impact.

Using a tool developed by WRI's [Water Quality Trading team](#)³⁵, we found that WRI's business activities contributed 5,809 pounds of nitrogen to our environment. International travel is our most significant source of impact, but that impact reaches beyond the Chesapeake. Of our regional impacts,

Figure 8 | WRI's 2012 Nitrogen Footprint



travel, commuting, and energy use are the most significant. Nitrogen run-off from our office building is negligible, due in part to the installation of a green roof by the American Psychological Association (WRI's landlord), CBRE (our global office's management company), and WRI staff. The green roof's soil and plants filter and trap nitrogen commonly found in rainwater as a result of car exhaust, fertilizers, and other industrial activities.³⁶ While there are no absolute reduction targets in place to reduce our nitrogen impacts, we project that our overall impact will decrease over time as a result of our GHG emissions reduction activities associated with business travel and electricity use.

Fiber Testing (Deforestation)

In the summer of 2012, WRI's Sustainability Initiative, Forest Initiative team, and facilities staff in DC, China, and India joined forces to conduct an inventory of the paper purchased by WRI. Inspired by the Forest Initiative's work on [fiber testing paper and the Lacey Act](#), we wanted to ensure that WRI walks the talk in our own operational paper purchases. Five offices submitted paper for fiber testing. The testing would ascertain whether the products were made in part from tropical hardwoods—a species type associated with tropical natural forest clearing, controversial logging practices, and possibly illegal logging. Among the samples, we identified seven risky paper products, including a calendar purchased by WRI China that

contained tropical fibers. Our findings highlighted the need for more comprehensive procurement controls to ensure that WRI is walking the talk on sustainable paper. Our next step is to develop purchasing guidelines to ensure the purchase of high-quality paper products for use at WRI locations.

More information about our fiber testing experience, and additional resources, can be found on our [blog](#).

WRI's Sustainable Event Policy

To support sustainable practices at onsite events, WRI has developed a sustainable event policy that focuses on catering and waste. To help minimize the impacts of WRI's events and support sustainable agricultural practices, all of WRI's event planning prioritizes the purchase of plant-based ingredients, particularly those that are local, organic, or sustainability-certified. Any deviation from this approach must contain either certified organic poultry or sustainability-certified seafood. While these standards are not comprehensive of the full range of factors around sustainable agriculture, we strived to balance environmental and social issues, regional availability, and ease of use by staff during development. The policy also addresses waste accumulation at events by establishing standards for dish, serving, and flatware use; printing; decoration; and office recycling.

Communication

Internal and external communication is essential for WRI to learn, lead, and drive sustainable management forward. Externally, WRI continues to host the Sustainability Managers Roundtable (SMRT), a webinar for staff from NGOs (environmental and social advocacy) and development banks. SMRT membership increased 20 percent to include participants from 18 different organizations. Recent discussions included detailed analysis of carbon accounting and target setting, business travel strategies, and teleworking. We also continue to share our experiences through WRI's [Sustainability Initiative webpage](#), blogs, and other periodic updates.

Internally, communication is the key to integrating sustainability into WRI's operations and culture, and to ensuring long-term success. In 2012, we targeted staff awareness and general behavior through verbal communication and the Sustainability Champions—a volunteer staff group that helps the Sustainability Initiative team tackle internal sustainability. We have increased the visibility of our quarterly updates on business travel emissions by making them easier to read—shorter, focused, and visual—and highlighting them during Sustainability Champions meetings. We are currently working to improve the usability of our internal website and to move away from email-driven communication toward more innovative and attention-grabbing modes, such as visual information, incentive-based competitions, and more frequent updates in staff meetings.

CONCLUSIONS

As an environmental and socially conscious organization, WRI takes its sustainability commitments seriously. By “walking the talk,” we strive to live up to WRI’s values, which lend strength and conviction to the institute’s work. As Eleanor Roosevelt said, “It is not fair to ask of others what you are not willing to do yourself.” Our current targets, and our actions to meet them, are a first step in achieving reductions consistent with those needed to limit global temperatures to a 2 degree Celsius rise. However, creating meaningful and long-lasting reductions to GHG emissions and other environmental impacts in a rapidly growing organization will be challenging. Growing means a greater positive impact through our work, but also a greater footprint if we cannot decouple emissions and institutional growth. This challenge is not unique to WRI, and lessons we learn can benefit others.

To be successful, we must focus on what matters. That is why our three targets—a 50 percent reduction in emissions from purchased electricity, a 20 percent reduction in

emissions from business travel, and a 20 percent reduction in emissions from other scope 3 categories—focus on our largest impacts. In working toward our targets, we aim to drill down to the underlying sources of emissions and more importantly, reduction opportunities. WRI’s business travel emissions are significantly shaped by 10 percent of staff, who incur 40 percent of WRI’s GHG emissions. Accordingly, we are focusing on engaging with these heaviest travelers. In scope 3, WRI’s sub-grants have the largest impact, with the EMBARQ network accounting for the largest single emissions source. This is one of the reasons we selected EMBARQ for our primary data pilot. For purchased electricity, we cannot meet our target by reducing consumption alone, but we still want to better understand our consumption patterns so we can change as needed. We continue to work with our landlord and management company at our global office to obtain the data needed to understand our consumption behavior, while researching new ways to add renewable energy to the market.

To achieve substantive reductions, WRI will need to balance investments in efficiency and technology with the more challenging tasks of changing behavior and working approaches. There are clear win-wins to pursue, where actions that drive emissions reductions also deliver benefits in other areas of the institute. For example, we know that reducing business travel not only reduces our emissions, but also saves money from travel expenses and can improve the work-life balance of our staff—potentially leading to higher morale and lower staff turn-over. However, until we are comfortable working with fewer face-to-face interactions and have the technology to support the shift, it will be difficult to achieve substantive reductions and the associated co-benefits. We also recognize that metrics to evaluate reduction strategies and trends will be important as we continue forward. For that reason, we have begun identifying some of these metrics in this report. We also have identified data gaps within our international offices that we will work to fill over the next year.

Internal sustainability is about more than managing and reducing greenhouse gases. We have improved the sustainability of WRI's onsite events by establishing a policy on catering and waste. We are also working to improve the sustainability of WRI's procurement—starting with fiber testing to identify potential controversial paper products currently being used in our offices.

Across the board, we have made some progress; however, we are fairly early into this work and have much further to go. Our greatest challenge and opportunity for success in the long term is integrating sustainability across WRI's operations. Sustainability approaches by companies and organizations are limited in their success if they are siloed to a specific team or set of tasks. By fostering greater ownership of WRI's targets and footprint within our programs and offices, we can infuse sustainable thinking into both everyday as well as strategic decisions, and move closer to our 2020 commitments. Despite the overall challenges, WRI is determined to aggressively pursue the activities needed to reduce our environmental impact while advancing our mission to catalyze broader positive changes in the world.

Our greatest challenge and opportunity for success in the long term is integrating sustainability across WRI's operations.

APPENDIX A: CALCULATION METHODOLOGY FOR WRI'S 2012 INVENTORY

The following general formula was utilized to calculate emissions in WRI's inventory:

$Activity\ Data \times Emissions\ Factor \times Global\ Warming\ Potential\ (GWP) = CO_2\ equivalent\ (CO_2e)\ Emissions$

Activity data | A quantitative measure of a level of activity that results in GHG emissions.

Emissions factors | A factor that converts activity data into GHG emissions data (e.g., kg CO₂ emitted per liter of fuel consumed, kg CH₄ emitted per kilometer traveled, etc.).

Global Warming Potential (GWP) | A factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given GHG relative to one unit of CO₂. The GWP values utilized in this inventory were from the Intergovernmental Panel on Climate Change's (IPCC) fourth assessment report (2007).

Scope 1 – Emissions from Staff Refrigerators

Overview and Activity Data |

Calculating the emissions from WRI's refrigerators required an inventory of our systems and estimation equations from The Climate Registry's General Reporting Protocol (GRP) v 1.1 (2008).

Activity data= Total full charge (capacity) of the equipment= 1.02 kg

Calculation

Formula (The Climate Registry's GRP v 1.1):
Total Annual Emissions (metric ton [mt]) = $[(C_N * k) + (C * x * T) + (C_D * y * (1 - z))] \div 1,000$

C_N = Quantity of refrigerant charged into new equipment = 0 kg

C = Total full charge (capacity) of the equipment = 1.02 kg

T = Fraction of the year the equipment was in use = 1 year

C_D = Total full charge (capacity) of equipment being disposed of = 0 kg

k = installation emissions factor = 0 kg

x = operating emissions factor = 0.5%

y = refrigerant remaining at disposal = 0%

z = recovery efficiency = 0%

Inventory of Refrigeration Equipment at WRI's Global Office

TYPE OF EQUIPMENT	# OF UNITS	CAPACITY (oz)	CAPACITY (kg)	REFRIGERANT USED	GWP
GE Profile™ ENERGY STAR® 22.2 Cu. Ft. Bottom-Freezer Drawer Refrigerator	2	4.06	0.12	R-134A	1430
GE Spacemaker® 4.4 Cu. Ft. Compact Refrigerator	1	2.12	0.06	R-134A	1430
GE ENERGY STAR® 22.1 Cu. Ft. Side-By-Side Refrigerator with Dispenser	1	4.75	0.13	R-134A	1430
Danby ENERGY STAR® 4.4 Cu. Ft. Compact All Fridge	1	2.12	0.5	R-134A	1430
U-Line Icemaker	1	3.25	0.09	R-134A	1430

Results

Refrigerant utilized = R-134A (also known as HFC-134A)

GWP of HFC-134A = 1430

Total annual refrigerant emissions = 5.1E-06 mt of HFC-134A

Total from refrigerators = 7.3E-03 mt CO₂e

*Emissions factor of 0.5% obtained from The Climate Registry's *General Reporting Protocol Version 1.1*

0.5% = operating emissions factor X % of capacity/year

Limitations | These calculations are only for the Washington, DC office and do not include any refrigerant used in WRI China or WRI India offices. The DC office has approximately seven times the number of staff as WRI China (our second largest location), so any emissions from these offices are likely to be negligible.

Scope 1 – Emissions from Diesel Generators

Overview and Activity Data |

The building in which WRI's global office is located has a diesel generator on the roof that is used during electricity outages. The building manager provided activity data, and the square foot ratio is used to allocate WRI's portion.

Activity data: 80 gallons of diesel utilized in entire building in 2012 (data received from building manager)

Diesel utilized in WRI building in 2012 = $80 \times 0.204 = 16.3$ gallons.

Calculation

The WRI (2008) GHG Protocol tool for stationary combustion, version 4.0 (worksheet available online at <http://www.ghgprotocol.org>) was utilized to calculate the emissions released in 2012 from the diesel genera-

tor operated in the building housing WRI's global office. Emissions factors utilized in the tool are from the 2006 IPCC guideline for National GHG Inventories.

Limitations | These calculations are only for the global office in Washington, DC and do not include any diesel generators used in the WRI China or WRI India offices. The DC office has approximately seven times the number of staff in the Beijing office (our second largest location), so any emissions from these offices are likely to be negligible. Also, the use of an allocation factor based on square footage is not as accurate as sub-metering the use of diesel generator systems for WRI's own operations.

Results – Emissions from Diesel Generators

CO ₂ (mt CO ₂ e)	CH ₄ (mt CO ₂ e)	N ₂ O (mt CO ₂ e)	TOTAL (mt CO ₂ e)
0.17	7.0E-06	1.3E-06	0.17

Total from diesel generation = 0.17 mt CO₂e.

Scope 1 – Emissions from Refrigerants used in Building HVAC

No refrigerants (HFC) purchased for use at WRI's DC office during FY2012, so this calculation was excluded.

TOTAL SCOPE 1 = 0.2 mt CO₂e

Scope 2

Location-based Method | The location-based method calculates emissions based on the actual energy consumption at the location where the energy is used, taking into account the actual units generating power. WRI uses emissions factors that are as localized as possible for each office. This is to allow us to more closely account for the actual power-generating units or local power plants in our location-based emissions calculations—per recommendations by the GHG Protocol.

PURCHASED ELECTRICITY – GLOBAL OFFICE

Overview and Activity Data | WRI's office spaces are not metered separately and therefore the electricity purchase data for the entire building were used and allocated using the square foot ratio. Electricity utilized by the entire building in 2012 was 5,677,466 kWh. Using the 0.204 ratio, WRI's electricity usage for 2012 was estimated to be 1,065,981 kWh (1,066 MWh).

Calculation

Emissions factors for sub-region RFC East (the region where WRI's global office is located) were used from the U.S Environmental Protection Agency (EPA) Emissions & Generation Resource Integrated Database (eGRID).

Emissions Factors (mt GHG / MWh):
CO₂: 0.48
CH₄: 1.2E-05
N₂O: 7.7E-06

Total D.C. office purchased electricity = 515 mt CO₂e

Limitation | The use of an allocation factor based on square footage is not as accurate as sub-metering the electricity use for WRI's own operations.

Results – Purchased Electricity (Global Office)

ACTIVITY DATA MWh	mt CO ₂	mt CO ₂ e (CH ₄)	mt CO ₂ e (N ₂ O)	TOTAL mt CO ₂ e
1,065	512.2	.33	2.45	515.0

Note: Multiplied the emissions factors by total MWh and GWP.

PURCHASED ELECTRICITY – WRI CHINA

Overview and Activity Data | To calculate the scope 2 emissions from the WRI China office, activity data were calculated based on a pre-paid electricity rate. Electricity usage in 2012 = 18.9 MWh

Calculation

Emissions factors for China were identified by WRI's China team through their publication—*Getting Every Ton of Emissions Right: An Analysis of Emissions Factors in China*.³⁷

Emissions Factors, China (mt GHG / MWh):
CO₂: 1.128
CH₄: 0.00012
N₂O: 0.00017

Total Beijing office purchased electricity = 21.4 mt CO₂e

Limitations | WRI China's electricity data are provided through receipts for pre-paid electricity credits and does not reflect actual usage over a select period in time. As a result, it is difficult to evaluate exactly how much electricity was consumed within the inventory scope. However, any missing data are accounted for in the prior or subsequent inventory.

Emissions Factor Change from 2011 Inventory

| We switched to more location specific (2011 North China Grid) emissions factors to improve the GHG calculation. The new emissions factors did not significantly impact WRI's 2010 or 2011 scope 2 emissions (changing by 5 percent) so the base year inventory was not recalculated.

Results – Purchased Electricity (Beijing Office)

ACTIVITY DATA MWh	mt CO ₂	mt CO ₂ e (CH ₄)	mt CO ₂ e (N ₂ O)	TOTAL mt CO ₂ e
18.9	21.3	0.01	0.1	21.4

Note: Multiplied the emissions factors by total MWh and GWP.

TOTAL SCOPE 2 = 536 mt CO₂e.

Scope 3

The following Scope 3 categories were accounted for in WRI's 2012 Inventory.

- **Purchased Goods and Services** | Extraction, production, and transportation of goods and services purchased or acquired by WRI, not otherwise included in Categories 2 through 9. In WRI's inventory, this category included any applicable emissions from capital goods, transportation and distribution, and leased assets (e.g., printers and copiers).
- **Fuel- and Energy-related Activities** | Extraction, production, and transportation of fuels and energy purchased or acquired by WRI, not already accounted for in scope 1 or 2.
- **Waste Generated in Operations** | Disposal of waste generated in WRI's operations.
- **Business Travel** | Transportation of WRI employees for business-related activities.
- **Employee Commuting** | Transportation of WRI employees between their homes and WRI's offices.
- **End-of-life Treatment of Sold Products** | Waste disposal/treatment of publications distributed by WRI.

CATEGORY 1: PURCHASED GOODS AND SERVICES

Overview and Activity Data | Category 1 was calculated using financial activity data. WRI's accounting department provides data on the goods and services purchases for the full fiscal year, summed by vendor.

Calculation

The Carnegie-Mellon University Environmental Input-Output Life Cycle Assessment (EIO LCA) tool is available for free at <http://www.eiolca.net/>. Input-Output tables traditionally represent the monetary transactions between industry sectors in mathematical form. Environmentally Extended Input-Output (EEIO) models indicate what goods or services (or output of an industry) are consumed by other industries (or used as input).³⁸ EEIO tables utilized in life cycle assessment (LCA) additionally calculate the average emissions of pollutants associated with spending a certain amount of funds on a particular industry. The EIO LCA tool utilized this methodology.

To align the activity data with the tool, we identified the service or good provided by each vendor, and then assigned this service or good a predefined sector based on NAICS sector codes, and ran the resulting information through the model to determine allocated emissions. Because the model uses factors influenced by fixed financial values, we account for inflation between the inventory year and our baseline, 2010. All vendors for which spending totaled

less than \$6,000 were excluded due to estimated insignificance, and charges on the corporate credit card were excluded due to data collection limitations.

The following information was entered into the EIO LCA tool for each good or service that was purchased by WRI in 2012:

- The detailed sector that each good or service is a part of;
- The model to be used for the analysis (the US 2002 Benchmark producer price model was used);
- The amount of economic activity in the sector, i.e., the amount of money spent on purchasing that good or service.

Results | The results can be grouped into three main categories: purchased goods (food, office supplies), purchased services (consulting, design, printing), and services purchased from partners and sub-grantees (money provided as part of project work).

Total category 1 =
3342 mt CO₂e

Limitations | Financial activity data are secondary data. It is difficult to account for emissions reductions without primary activity data. The credit card charges are excluded (as explained above).

Results – Category 1

SUB-CATEGORY	mt CO ₂ e
Partners and sub-grantees	2419.0
Purchased goods	109.6
Purchased services	813.1
Total Category 1 (purchased goods and services)	3341.7

CATEGORY 3: FUEL- AND ENERGY-RELATED ACTIVITIES

Overview and Activity Data | The data from scope 2 are used to calculate this category.

Calculation

WRI's Global Office Electricity

- Total pro-rated usage for D.C. office = 1,065,981 kWh (please refer to scope 2 calculations)
- Cradle-to-gate emissions factors for RFC East (eGrid sub-region) = 0.746 kg CO₂e/kWh (obtained from *Carbon Trust Footprinter*)
- Combustion emissions factors for RFC East = 0.483 kg CO₂e/kWh
- Upstream emissions factors for RFC East = Life cycle emission factors for RFC East (eGrid sub-region) – combustion emissions factors for RFC East = 0.746-0.483 = 0.263 kg CO₂e/kWh

WRI China Office Electricity

- Total usage for WRI China office = 18,880 kWh (please refer to scope 2 calculations)
- Cradle-to-gate emissions factors for China = 0.92 kg CO₂e/kWh (obtained from *Carbon Trust Footprinter*)
- Combustion emissions factors for China = 0.84 kg CO₂e/kWh
- Upstream emissions factors for China = Life cycle emission factors for China – combustion emissions factors for RFC East = 0.92 – 0.84 = 0.08 kg CO₂e/kWh

Results

WRI's Global Office Electricity

- Total kWh pro-rated usage for 2012 x upstream emissions factors for RFC East / 1000 = 280.3 mt CO₂e
- **Total from Global Office: 280.3 mt CO₂e**

*WRI China Office Electricity*³⁹

- Total kWh pro-rated usage for 2012 x upstream emissions factors for China / 1000 = 1.5 mt CO₂e
- **Total from WRI China Office: 1.5 mt CO₂e**

Total category 3 = 282 mt CO₂e

Limitations | Upstream cradle-to-gate emissions associated with diesel fuel were not included in this category. The total combustion emissions for diesel fuel in scope 1 were 8.05E-01 CO₂e, and therefore the upstream emissions were assumed negligible. The combustion and cradle-to-gate emissions factors are from different sources so some uncertainty was introduced when those values were subtracted from each other. Additionally, the China emissions factors are not localized and therefore not as accurate.

CATEGORY 5: WASTE GENERATED IN OPERATIONS

Overview and Activity Data |

WRI's global office utilizes single-stream recycling and the building's management company provides monthly recycling data reports. Applying the conversion factor of 0.204 (WRI sq. ft./total building sq. ft.) to the recycling data from 2012, we were able to estimate the amount of waste recycled and generated by WRI.

Calculation

Following the guidance given in the Scope 3 Standard on accounting for emissions from recycling, the emissions associated with recycling are not reported in category 5. Therefore, we used the following emissions factors to estimate the emissions associated with the total waste residue. These data are for average treatment of

waste in Great Britain from the Carbon Trust Footprinter tool.

- Average (Waste treatment) = 0.044 kg CO₂e/kg waste
- Waste generated in operations = Total Residue X Average (Waste treatment) X (1 kg/2.2046 lb)* (1 kg/1000 mt) = 0.1 mt CO₂e

Total category 5 = 0.1 mt CO₂e

Limitations | The emissions factors data could be improved in a future inventory with similar data from the United States (at the time of this inventory report, those data could not be located).

Results – Overview of Waste Generated

DEBRIS CATEGORIZATION	TOTAL (lbs)	RECYCLED (lbs)						WASTE (lbs)
	INBOUND WEIGHT	OFFICE PAPER	CARDBOARD	MIXED PAPER	PLASTIC CONTAINERS	ALUMINUM CANS	GLASS	RESIDUE
Total debris generated in 2012	129860	43020	32740	35160	3200	1320	560	13860
WRI's estimated contribution	12018	3981	3030	3254	296	122	52	1283

CATEGORY 6: BUSINESS TRAVEL

Overview and Activity Data | Flight and rail travel booked by WRI staff through the CONCUR travel site in 2012 were used as the activity data for calculation of emissions from business travel.⁴⁰ WRI staff traveled a total of 10,681,315 kilometers (km) by plane and 54,117 km by train in 2012.

Calculation

All flights were grouped into short-, medium-, or long-haul flights based on leg miles, following the GHG Protocol business travel calculation tool. The United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) emissions factors were used to calculate the CO₂, CH₄, and N₂O emissions. Rail travel was calculated using emissions factors from DEFRA, the United States Environmental Protection Agency (EPA), and the Intergovernmental Panel on Climate Change (IPCC) 2006 guidelines for National GHGs. Calculations were done each quarter.

Results

- Total mt CO₂e from air travel = 1,162.9
- Total mt CO₂e from rail travel = 6.2

Total category 6 (air and rail) = 1,169 mt CO₂e

CATEGORY 7: EMPLOYEE COMMUTING

Overview and Activity Data

WRI surveys its staff (WRI's global office, WRI China, WRI India, and remote) annually to obtain data on commuting patterns. Responses included 126 out of 199 U.S. staff, and 26 out of 46 non-U.S. staff. A scaling factor of 1.58 (199/126) was applied to the activity data collected to estimate commuting for U.S. staff, and 1.77 for non-US staff. WRI staff traveled approximately:

- 30,292 miles by bus;
- 157,609 by metro;
- 112,812 miles by commuter rail;
- 57,047 miles by car (or 2,321 gallons of fuel); and
- 31,049 miles by walking or biking.

Calculation

The GHG Protocol tool for transport or mobile sources was used to calculate the

emissions from employee commuting. The tool utilizes emissions factors from DEFRA, EPA, and IPCC 2006 guidelines.

A distance-traveled approach was used to calculate emissions from employees commuting by bus, metro, and commuter rail, while a fuel-based approach was used to calculate emissions from commuting by car.

Results

- Washington, DC office = 109.9 mt CO₂e
- Beijing office = 5.0 mt CO₂e
- New Delhi office = 1.9 mt CO₂e
- Bangalore office = 0.0 mt CO₂e
- Mumbai office = 1.2 mt CO₂e

Total category 7 = 118 mt CO₂e

CATEGORY 12: END-OF-LIFE TREATMENT OF SOLD PRODUCTS

Overview and Activity Data | WRI does not sell any conventional “products.” However, WRI does produce publications as part of its work, and the end-of-life treatment of these publications was estimated and included in the 2012 inventory. The following conservative assumptions were made about the number and weight of publications:

Full Reports

- In 2012, WRI produced 10 reports and printed an estimated 2,000 copies of each report, for a total of 20,000 copies.
- It was assumed that each report weighed 0.6 kg. Hence 20,000 publications weighed approximately 12,000 kg.

Issue Briefs

- In 2012, WRI produced 13 issue briefs and printed an estimated 150 copies of each issue brief, for a total of 1,950 copies.
- It was assumed that each issue brief weighed .42 kg. Hence 1,950 publications weighed approximately 819.0 kg.

Working Papers

- In 2012, WRI produced 19 working papers and printed an estimated 150 copies of each working paper, for a total of 2,850 copies.
- It was assumed that each working paper weighed 0.37 kg. Hence 2,850 publications weighed approximately 1054.5.0 kg.

Assumptions are conservative in order to generate a worse-case scenario estimate for this category.

Calculation

EPA statistics for municipal solid waste generation, recycling, and disposal in the United States for 2012 indicate a 34 percent average recycling rate for all materials and a 70 percent recycling rate for office-type paper.⁴¹ Because it was not clear whether publications would qualify as office-type paper, we assumed the conservative value of 34 percent recycled and the rest disposed of in a landfill. The total mass of publications in 2012 assumed to eventually be disposed of in a landfill is 13,667 kg. 54 percent of methane from U.S. landfills is recovered.⁴² Emissions factors for office

waste, with recovery (0.73 kg CO₂e/kg waste) and without (1.55 kg CO₂e/kg waste) were obtained from the New Zealand Ministry for the Environment, 2008.⁴³

Results

Total category 12 = 10 mt CO₂e

Limitations | Aggregating data on the exact counts of printed copies per publication is time consuming given WRI’s current billing process, while the total impacts of the end-of-life emissions of these printed copies account for less than 1 percent of WRI’s total GHG inventory. In lieu of exact data, we rely on printed copy estimates proved by WRI’s Director of Publications.

The US-only estimates for recycling rates used here are likely inaccurate since our publications are distributed worldwide. The data from New Zealand landfills may not accurately represent the average global disposal of our publications. We made no assumptions about waste being incinerated with or without energy recovery because no emissions factors data were located, although it is likely that some portion of publications are disposed of in this way.

Emissions Factor Change from 2011 Inventory | Updated emissions factors for landfill (with and without recovery) were released by the New Zealand Ministry of the Environment. Updated estimates of methane recovery in the United States came from a study published in the Air & Waste Management Association Publications in 2011. The 2010 base year emissions would have experienced insignificant change (<5 percent) and was not adjusted.

APPENDIX B: QUESTIONS FOR CUSTOMIZING GHG INVENTORY CALCULATIONS

We sent each participating EMBARQ office the following text in an email to help us customize the GHG emissions calculations and methodology. We used the questions pertaining to office organization to help us customize the online survey to collect employee commuting habit data. The additional questions enabled us to adjust the tools used to calculate emissions from purchased electricity and business travel so that the data could be easily entered by EMBARQ or WRI staff.

In order to accurately capture the necessary data to calculate GHG emissions from EMBARQ's fiscal year 2012 activities, we need to tailor each emission packet to its particular office. This document will request some basic information about your center so that we can create that customized inventory.

Please answer the following to the best of your ability and return completed to astevens@wri.org. Any questions, concerns, or comments can be sent to the same email address.

Questions to tailor the Employee Commuting survey:

1. Please list all of EMBARQ [insert country here] office locations.
2. Please list all programs/ departments.
3. Does your office have part time employees or interns? Do you have remote staff? (works outside of office)
4. What is the total maximum time off per year? (vacation time/sick days plus national holidays)
5. Please list the most common forms of commuting to your office (i.e. bus, taxi, rail...)
6. What are some typical areas or neighborhoods that employees commute from?
7. What is the total number of employees at your center? (including remote staff)

Questions related to the scope 2 (purchased electricity) and scope 3, category 6 (business travel) data:

1. In what form do you receive your electricity data? (A month to month bill? A yearly statement?)
2. Does your center collect business travel data? If so, how is it recorded? (By mileage, by money spent, recorded through a travel agent, etc.)
3. What methods are used for business travel? (Air, rail, car...etc.)

APPENDIX C: WRI'S 2012 VENDOR GHG QUESTIONNAIRE

We emailed the text below to WRI's point of contact or the designated sustainability contact at the 15 companies included in our Supplier GHG Data Collection Pilot. We provided the GHG vendor questionnaire that follows as an option for responding.

Dear _____,

As a global think tank for environmental and development issues, the World Resources Institute (WRI) strives to ensure that our own operations are the best reflection of the changes we want to see in the external world. We do this through our [Sustainability Initiative](#), which is aimed to ensure we "walk the talk" when it comes to social and environmental responsibility. A main focus of this initiative is reducing the greenhouse gas (GHG) emissions that occur in our own operations as well as across our [value chain](#). This is necessary to achieve the reductions in GHG emissions needed to avoid many catastrophic impacts of [climate change](#). To do our part, we have set targets to reduce our value chain (scope 3) emissions by 2020, including those GHG emissions associated with our purchased goods and services.

As _____ is one of our main suppliers, we would like to collect primary data from you about your company's GHG emissions. Primary data (direct GHG inventory data) includes total emissions for scope 1 and 2, as well as scope 3 categories. The data provided will allow us to improve the accuracy in our scope 3 emissions calculations and reporting and, most importantly, help us to make progress towards meeting our reduction goal.

We have several methods of response – If your company publicly reports their GHG emissions, please direct us to the proper disclosure site (CPD, TRC, etc.) or provide a link to your publicly available GHG inventory report and any other data necessary to allocate emissions (See chapter 8 of the [scope 3 standard](#)). If you do not currently report your GHG emissions, the Vendor GHG Questionnaire located below or an online survey found [here](#) can be used to provide emissions data.

All detailed data exchanged will be considered confidential. This is considered a pilot project on GHG accounting information sharing and is not currently a factor in WRI's procurement decisions.

If you do not currently conduct an annual or semi-annual GHG inventory, we are happy to help you get started by pointing you to resources available through the [GHG Protocol](#), the most widely used international accounting standards and tools for government and business leaders to understand, quantify, and manage greenhouse gas emissions. By accounting for your GHG emissions, we hope that you will find areas in your own operations where you can reduce your emissions and save money through energy or fuel savings.

Sincerely,

Laura Draucker – ldraucker@wri.org, (202) 729 – 7828
Amanda Stevens – astevens@wri.org, (202) 729 – 7664

VENDOR GHG QUESTIONNAIRE

Name:

Company:

Phone Number:

Email:

Scope 1 and 2 GHG Inventory Data: Please fill out with as much information as you can supply. An additional page is provided if necessary

Scope 1:

Scope 1 emissions are direct emissions from sources owned or controlled by your company. Scope 1 includes emissions from vehicle fleets, on-site electricity generation, fuel use, and fugitive emissions (e.g., refrigerants, chemical processes).

For more information please see the [GHG Protocol Corporate Standard](#).

What activities are included in your scope 1 inventory?

Total scope 1 emissions (mt CO₂e): _____

Scope 2:

Scope 2 accounts for GHG emissions from the generation of electricity purchased for use by the company/organization. Scope 2 emissions are commonly calculated by requesting electricity data from building managers or using the data located on electricity builds from a utility company.

What activities are included in your scope 2 inventory?

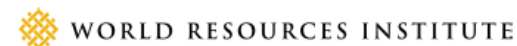
Total scope 2 emissions (mt CO₂e): _____

Scope 3 GHG Inventory Data and Additional Information: An additional page is provided if necessary

Scope 3, if available:

Emissions from scope 3 are considered “indirect emissions”. These are a consequence of the activities of the company/organization but occur from sources not owned or controlled by said group. Some examples include business travel activities and employee commuting.

Please see [HERE](#) for full descriptions of scope 3 categories.



Scope 3 emissions by source: Please indicate the emission category and the total metric tons of CO₂ equivalent emitted.

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Category: _____ GHG Emissions (mt CO₂e): _____

Reduction Targets:

Do you have any reduction targets set (absolute or intensity)?

Do you have any interim goals or targets? _____

Do you have any GHG reduction initiatives or projects underway? If so, please list the project and the estimated reduction potential

Financial Details:

In order to account for a portion of your emissions in our scope 3 inventory, we need to understand how our purchases factor into your overall revenue.

Please provide either the total revenue (US dollars) for the inventory year or the percentage of your inventory-year revenue provided by WRI.

APPENDIX D: 2010 BASELINE GHG INVENTORY

SCOPES AND CATEGORIES	METRIC TONS (mt) CARBON DIOXIDE EQUIVALENTS (CO ₂ e)
Scope 1: Direct emissions from owned / controlled operations	16
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling	592
Upstream (purchased) scope 3 emissions	
Category 1: Purchased goods and services	2559
Category 2: Capital goods	Accounted for in category 1 (purchased goods and services)
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	293
Category 4: Upstream transportation and distribution	Accounted for in category 1 (purchased goods and services)
Category 5: Waste generated in operations	<1
Category 6: Business travel	1252
Category 7: Employee commuting	107

SCOPES AND CATEGORIES	METRIC TONS (mt) CARBON DIOXIDE EQUIVALENTS (CO ₂ e)
Category 8: Upstream leased assets	Accounted for in scope 2 and category 1 (purchased goods and services) ²⁶
Downstream (sold) scope 3 emissions	
Category 9: Downstream transportation and distribution	N/A
Category 10: Processing of sold products	N/A
Category 11: Use of sold products	N/A
Category 12: End-of-life treatment of sold products (publications)	28
Category 13: Downstream leased assets	N/A
Category 14: Franchises	N/A
Category 15: Investments	N/A (Improving the sustainability of our investments is being addressed independent from our GHG inventory)

ENDNOTES

1. Peterson, T. C., M. P. Hoerling, P. A. Stott and S. Herring, Eds., 2013: Explaining Extreme Events of 2012 from a Climate Perspective. Bull. Amer. Meteor. Soc., 94 (9), S1–S74. Available at: <http://www.ametsoc.org/2012extremeeventsclimate.pdf>.
2. UNEP, 2013, The Emissions Gap here: <http://www.unep.org/pdf/UNEPemissionsgapreport2013.pdf>.
3. For more details on our absolute reduction targets, please see our 2010 Organizational GHG Inventory.
4. National Development and Reform Commission, Dec. 9, 2013.
5. Peterson, T. C., M. P. Hoerling, P. A. Stott and S. Herring, Eds., 2013: Explaining Extreme Events of 2012 from a Climate Perspective. Bull. Amer. Meteor. Soc., 94 (9), S1–S74. Available at: <http://www.ametsoc.org/2012extremeeventsclimate.pdf>.
6. UNEP, 2013, The Emissions Gap Report, available here: <http://www.unep.org/pdf/UNEPemissionsgapreport2013.pdf>.
7. We refined our business travel baseline in 2011 to account for gaps in our data collection. For more information, see the base year recalculation described in WRI's 2011 GHG Inventory and Sustainability Report.
8. More information about WRI's 2010 inventory and our reduction targets is available on WRI's Insights blog: Sustainability at WRI: Recommitting to Walking the Talk.
9. Business travel is WRI's third most prominent source of emissions; it has a reduction target separate from other scope 3 sources.
10. The GHG Protocol is a joint partnership between WRI and the World Business Council for Sustainable Development. More information on the GHG Protocol as well as free downloads of the standards and tools are available at www.ghgprotocol.org.
11. "Consolidation approach" refers to the method chosen to determine which sources of emissions are included in the GHG inventory, as defined by the GHG Protocol Corporate Standard and Corporate Value Chain (Scope 3) Accounting and Reporting Standard. The approaches for determining the boundary of the inventory are equity share, operational control, or financial control. More information can be found in Chapter 3 of the Corporate Standard and Chapter 5.2 of the Scope 3 Standards.
12. The scope 2 and scope 3 category 3 and category 12 emissions differ between the CDP survey and this report because new emissions factors had not been finalized prior to our CDP submission.
13. WRI's category 1 emissions include purchases from vendors providing goods and services as well as emissions associated with sub-grants provided from WRI to partners. Sub-grants are contractual agreements with other NGOs, referred to as partners, to produce work that contributes to the design and achievement of our mission.
14. WRI leases its office space, copiers, and printers. Electricity use is included in scope 2, and any maintenance of the copiers and printers is included in category 1.
15. The Greenhouse Gas Protocol Corporate Standard requires the separate reporting of each GHG for scopes 1 and 2. This is not a requirement of scope 3.
16. WRI's 2010 inventory uses global warming potential (GWP) factors from the 4th assessment report, published by the Intergovernmental Panel on Climate Change (IPCC) in 2007. WRI's previous inventories used GWP factors from the IPCC second assessment report.
17. HFC–134a and R-410 A are types of refrigerants.
18. Ranping Song, Jingjing Zhu, Ping Hou and Hongtao Wang. 2013. "Getting Every Ton of Emissions Right: An Analysis of Emission Factors for Purchased Electricity in China." Available online at <http://www.wri.org/publication/getting-every-ton-emissions-right>
19. WRI has a strong focus on results, which we define as significant actions taken as a consequence of our activities and influence—by government agencies, businesses, policymakers, scientists, or civil society. Our results (called "outcomes") are generated through a highly focused system of clear goals and three- to five-year strategic objectives. Many are achieved in collaboration with WRI's more-than-400 partner organizations around the world. To learn more about our outcomes, please visit our [Top Outcomes page](#).
20. The energy demand per the unit of area, usually in square meters or square feet. Normalizes energy consumption for comparison.
21. To learn about the upcoming Scope 2 guidance, please visit the GHG Protocol website: <http://www.ghgprotocol.org/feature/ghg-protocol-power-accounting-guidelines>.
22. Location-based emissions calculations use data on energy consumption based on the location where the consumption occurs and the generating units that are dispatched to serve this location.
23. The market-based method seeks to reflect the GHG emissions associated with the choices a consumer makes regarding its electricity supply, including but not limited to choosing a retail electricity supplier, a specific generator, a differentiated product, or energy tracking certificates.

24. Reductions in the remaining other scope 3 target could contribute up to 25 percent of our necessary reductions but we will not be actively pursuing reduction strategies for those sources. The second largest scope 3 category included in our target is category 3 (upstream electricity emissions) which will mirror the reductions achieved in our scope 2 (purchased electricity) strategy.
25. This goal is based on emissions and not number of partners/suppliers in order to focus data collection on those partners and suppliers with the largest impact.
26. WRI has a strong focus on results, which we define as significant actions taken as a consequence of our activities and influence-by government agencies, businesses, policymakers, scientists, or civil society. Our results (“outcomes”) are generated through a highly focused system of clear goals and three- to five-year strategic objectives. Many are achieved in collaboration with WRI’s more-than-400 partner organizations around the world. To learn more about our outcomes, please visit our Top Outcomes page.
27. EMBARQ has center offices in Washington, DC, Mexico, Brazil, China, India, Turkey, and the Andino region of Peru. Of these offices, three locations—Washington, China, and India, are incorporated into the larger WRI and are funded through WRI’s direct budget. The Mexico, Brazil, Turkey, and Andino centers all receive WRI sub-grants and are considered partners, rather than a part of WRI itself.
28. EMBARQ India staff also elected to participate, however as the EMBARQ India budget is a part of WRI’s direct budget, these staff fall within the scope of WRI’s offices rather than a partner. Although the data collected from the EMBARQ India staff is not included in the resulting primary data from the EMBARQ centers, this project laid the foundation for collecting employee commuting, business travel, and electricity use data for future annual WRI GHG inventories.
29. The EIO LCA model is the same tool we use to calculate WRI’s category 1 emissions and can be found here: <http://www.eiolca.net/cgi-bin/dft/use.pl?newmatrix=US430CIDOC2002>
30. The financial data are used to allocate the appropriate portion of total emissions to WRI’s inventory.
31. CDP, a platform for reporting GHG emissions by Fortune 500 companies, reported 86 percent growth in suppliers disclosing GHG emissions from 2011 to 2012 <https://www.cdp.net/CDPResults/CDP-Supply-Chain-Report-2012.pdf>
32. Suppliers were allocated based on either provided financial data or publicly-disclosed financial information available on websites. In 2012, WRI’s sub-grants to the EMBARQ Centers either accounted for 100 percent of funding for individual Centers or additional grants information was unavailable.
33. Food purchased for events is also a source of nitrogen, but we lack accurate means to measure it. However, if implemented correctly, our Sustainable Event policy should reduce our nitrogen footprint from food (e.g., through the purchase of organic food).
34. Chesapeake Bay Monitoring Program, 2012, The 2012 Chesapeake Bay Dead Zone, Maryland Department of Natural Resources. Available here: http://mddnr.chesapeakebay.net/eyesonthebay/stories/DeadZoneStatus_Summer2012_090512.pdf.
35. The original tool accounts for the percentage of deposited nitrogen in local waters from air pollution. We decided to remove this step from the WRI calculator since our transport emissions from business travel are largely outside of the Bay watershed.
36. Oberndorfer, Erica et al. (2007) Green Roofs as Urban Ecosystems: Ecological Structures, Functions, and Services, *BioScience*, Vol. 57 (10), pp. 823-833.
37. Ranping Song, Jingjing Zhu, Ping Hou and Hongtao Wang. 2013. “Getting Every Ton of Emissions Right: An Analysis of Emissions Factors for Purchased Electricity in China.” Available online at <http://www.wri.org/publication/getting-every-ton-emissions-right>
38. Economic Input-Output Models-Carnegie Mellon (<http://www.eiolca.net/Method/LCAApproaches.html>)
39. The WRI publication used to update the emissions factors for WRI China’s scope 2 emissions does not include upstream emissions, thus these emissions factors remain the same.
40. This includes any travel booked and paid for by WRI for a partner or outside individual to attend a meeting or conference.
41. EPA, 2012, Municipal Solid Waste, available here: <http://www.epa.gov/epawaste/nonhaz/municipal/>
42. Huff, Raymond et al., 2011, Comparison of Greenhouse Gas Emission Methodologies for Landfills, Air & Waste Management Association Publications (195): available here: http://www.scsengineers.com/Papers/Huff-Sullivan-Henkelman_Comparison_of_GHG_Emission_Methodologies_for_LF.pdf.
43. New Zealand Ministry of the Environment, 2010, Voluntary Greenhouse Gas Reporting Emissions Factors 2010, available here: <https://www.mfe.govt.nz/publications/climate/guidance-greenhouse-gas-reporting-2010/emission-factors-2010.pdf>.

ACRONYMS

CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DEFRA	Department for Environment, Food and Rural Affairs
EEIO	Environmentally Extended Input-Output
eGRID	Emissions and Generation Resource Integrated Database
EPA	Environmental Protection Agency
ft	Feet
GHG	Greenhouse Gas
GRP	General Reporting Protocol
GWP	Global Warming Potential
HFC	Hydrofluorocarbons
HVAC	Heating, Ventilation, Air Conditioning
IPCC	Intergovernmental Panel on Climate Change
kg	Kilogram
kWh	Kilowatt hour
lbs	Pounds
LCA	Life Cycle Assessment
mt	Metric Ton
MWh	Megawatt hour
NAICS	North American Industry Classification System
N ₂ O	Nitrous Oxide
NGO	Non-governmental Organization
oz	Ounce
PFC	Perfluorocarbons
RAC	Refrigeration and Air Conditioning
SF ₆	Sulfur Hexafluoride
USD	United States Dollar (currency)
WRI	World Resources Institute

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ABOUT WRI

WRI is a global research organization that works closely with leaders to turn big ideas into action to sustain a healthy environment—the foundation of economic opportunity and human well-being.

Our Challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our Approach

COUNT IT

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

SCALE IT

We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.



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