



Aggregate carbon footprints on WID.world

WID.world Technical Note 2021/03

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This document details the methodology used to produce aggregate carbon estimates published on WID.world. Our dataset combines multiple Multi Regional Input Output tables in order to provide a sectoral decomposition of territorial emissions (emissions produced within national boundaries) and GHG footprints (i.e. emissions net of GHG imports and exports with other countries). The data covers 182 countries over the 1980-2019 period. We use the Global Carbon Project (GCP) dataset as our baseline for estimations. GCP data is augmented with additional datasets enabling more detailed sectoral breakdowns (in particular the EORA database). We aim at gathering best publicly available information on GHG footprints worldwide. We stress that our estimates should be seen as preliminary and that a lot of efforts still need to be achieved to properly measure up-to-date GHG footprints and their breakdown across sectors for all countries of the world. Our dataset includes data quality measures to reflect the level of assumptions associated to the production of each series. Improving the quality, readiness and global comparability of GHG footprint estimates represents an issue of its own for public statistics.

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Glossary

- **EE-MRIO : Environmentally Extended Multi-Regional Input-Output.** EE-MRIO tables are the main tools used to produce WID.world GHG aggregate footprints. They consist in a classic MRIO table detailing the value of transactions between each sector/country pair included in the framework and an extension of environmental accounts offering the possibility to assess the environmental effects of each of these transactions. A detailed methodology for the calculations that we use with the EORA database is provided in the next sections.
- **Scope 1 emissions.** Scope 1 emissions are emissions directly emitted by a set of organisations. Emissions are directly emitted if they come from sources which are detained or controlled by the organisation. Aggregate scope 1 emissions at the national level consist in the aggregation of all scope 1 emissions of organisations in the country.
- **Scope 2 emissions.** Scope 2 emissions encompass scope 1 emissions as well as indirect emissions associated with electricity, heat or steam imported to support the economic activity of the organisation.
- **Scope 3 emissions.** Scope 3 emissions encompass scope 2 emissions as well as other emissions indirectly produced and linked with the complete chain of value of the activities of an organisation.
- **Carbon footprint** refers to the total level of emissions induced by Final demand in a given country. It is equal to the sum of **domestic emissions** net of exports and **imported emissions**. Total footprint can only be captured through a consumption-based accounting methodology. Carbon footprint corresponds to **scope 3 emissions**. Contrary to domestic (or territorial) emissions, a carbon footprint can be attributed to an individual consumer as the sum of emissions produced to satisfy the consumption of this individual.
- **Carbon multiplier.** Carbon multipliers are values giving the quantity of carbon emitted for each dollar spent in a given sector. They can be converted into total footprint when multiplied by the appropriate demand vector.
- **Imported emissions.** Imported emissions are produced in another country to satisfy domestic final demand. They can be imported directly imported to satisfy this demand (**direct imports**) or imported by domestic production sectors which will in turn satisfy domestic consumption (**grey emissions**).
- **Exported emissions.** As a corollary to imported emissions, these are emissions produced domestically to satisfy final demand in another country.
- **Territorial emissions.** Territorial emissions are emissions which are emitted directly by production and institutional sectors of a given country. They encompass direct household emissions, territorial emissions of production sectors and other territorial emissions. This is exactly the total calculated under production based accountancy (PBA).
- **Direct Household emissions.** Direct household emissions are emissions which are directly emitted by households for their consumption activity. There are two main components to household direct emissions which are heating and transport related emissions. These correspond to **scope1 household emissions**.

- **Territorial emissions of production sectors** are emissions directly emitted by national production sectors to satisfy demand nationally and abroad. These correspond to **scope 1 production sector emissions**.
- **CO2 equivalent (CO2e)** is a unit introduced by the GIEC report to compare different greenhouse gases (GHG). For a given emission level of a gas, it is equal to the amount of CO2 that would have to be emitted to have the same warming effect within 100 years.
- **Institutional Sector.** These are National Accounting institutional sectors. There are four main sectors, Households, Government, Gross Formation of Fixed Capital (GFCF) and Non Governmental Organisations. Acquisitions and Inventories are too additional accounting sectors that are usually of small size and unreliable. In the following estimations, we add these sectors to the GFCF value.
- **Production Sectors.** Production sectors are categories aggregating similar activities (the reference for this aggregation is the International Standard Industrial Classification of All Economic Activities (ISIC). Emissions generated by these sectors constitute **scope 1 emissions**.
- **Consumption Sectors.** Consumption sectors are aggregated categories of Final Demand products to which we attribute **scope 3 emissions**.

1 Description of the data set

Our data set covers macro-economic carbon and GHG variables for 182 countries. For these countries, we provide estimates for both territorial and footprint accounting methods of carbon (CO₂) and overall greenhouse gas (GHG) emissions³. GHG estimates are available for years between 1980 and 2019, with detailed CO₂ data starting in 1990. Footprint estimates at the aggregate national level are also detailed at the institutional sector level. This data-set is a combination of numerous environmental databases, with the objective of publishing detailed and precise estimates of worldwide environmental footprints for most countries in the world. The following sections detail the methodology that was adopted to combine these data-sets.

2 Aggregate GHG footprints

2.1 Description of the Global Carbon Project (GCP) data

The Global Carbon Project (GCP) is the main source for our aggregate footprint data. The data-set provides high-quality estimations of CO₂ footprint between 1990 and 2018 detailed at the country level. However other gases such as CH₄ and N₂O are only available at an aggregate regional level [2]. We combine this data with external sources, and in particular estimations from the EORA database to provide values for Greenhouse Gas (GHG) emissions decomposed at the institutional sector level. Detailed explanations of the hypotheses that were adopted to conjugate these various sources are given in the following sections.

³For a complete overview of the variables, please refer to the WID.world variable dictionary

2.2 Description of the EORA Data

The EORA database offers relatively detailed estimates of GHG emissions by country and sector. It is dis-aggregated into 189 countries, with a number of sectors ranging from 25 to 500. Currently, EORA provides time series data for the years 1990 to 2015 and is continuously updated with more recent data. Tables are constructed using six different types of data :

- input–output (I–O) tables and main aggregates data from national statistical offices
- I–O compendia from Eurostat (2011), IDE-JETRO (2006), and OECD (2009)
- UN National Accounts Main Aggregates Database (UNSD, 2011a)
- UN National Accounts Official Data (UNSD, 2011b)
- UN Comtrade international trade database (UN, 2011)
- UN Servicetrade international trade database (UN, 2009)

We use three distinct tables to estimate carbon footprints with EORA ⁴ (see Figure 1 for a simplified example of MRIO table).

- The transaction matrix T . This table is a square matrix of dimension equal to the total number of production sectors in EORA (across all 189 countries). Each element corresponds to the value of the transaction (in dollar) of one sector toward another.
- The demand matrix Y . This table is a matrix with a number of rows equal to the total number of production sectors and a number of column equal to the number of institutional sectors in EORA (exactly six per country). Each element indicates the consumption in dollar of an institutional sector in a given production sector.
- The satellite account Q . This table is a matrix with a number of column equal to the number of production sectors and a line for each environmental factor available for the EORA database. We only use lines corresponding to PRIMAP GHG emissions and PRIMAP CO2 emissions. Each element indicates the total quantity of environmental factor used directly by a given production sector.

2.3 Mathematical background

We compute scope 3 carbon footprint using the EORA database according to the following methodology ([5],[4]). Let T be the transaction matrix, Y the final demand matrix and Q the satellite account. We first compute :

$$A = T\hat{x}^{-1}$$

With x the industry output such that :

$$x = Te_T + Ye_Y$$

⁴These tables are available at <https://worldmrio.com/>

Inter-industry transactions ("Z")						Final demand ("Y")				Gross output
		Country 1		Country 2		Country 1		Country 2		
		Sector 1	Sector 2	Sector 1	Sector 2	HHs	Govt	HHs	Govt	
Country 1	Sector 1	340	150	100	154	150	150	300	160	1504
	Sector 2	354	200	200	600	200	400	300	200	2454
Country 2	Sector 1	300	200	300	60	100	200	290	500	1950
	Sector 2	50	250	427	200	35	400	300	200	1862

Country 1 sector 1 imported 354 from Country 1 Sector 2

Value Added = Sum of Final demands					
Country 1	Value Added	460	1654		
Country 2	Value Added			923	848

Total input (x)				
Input by country-sector	1504	2454	1950	1862

Carbon emissions ("Q")				
Direct Emissions (CO2)	200	300	200	400

Figure 1: An MRIO table for two countries

e_x are summation vectors of appropriate dimension. \hat{x}^{-1} is the diagonalised and inverted value of the vector x .

We then compute the Leontief inverse matrix :

$$L = (I - A)^{-1}$$

Next, we compute the requirement factor matrix S such that :

$$S = Q\hat{x}^{-1}$$

GHG or carbon multipliers are then obtained by :

$$M = SL$$

And the footprint associated with any demand vector y is given by :

$$F = My$$

2.4 GHG footprint data

2.4.1 CO2 estimations

1. Whenever possible, we use GCP as our main source for carbon footprint estimates. We believe this data to be the highest quality data available for an important number of countries.

Carbon footprint estimations are available for the period 1990-2018 in 118 countries ⁵. In order to produce 2019 carbon footprint estimates, we extrapolate values from GCP up to 2019 by assuming a growth rate in CO2 footprint emissions equal to the growth rate of CO2 territorial emissions provided by GCP between 2018 and 2019.

2. For countries not present in the GCP dataset, we use EORA calculations to provide CO2 footprint estimations between 1990 and 2015. For years 2016-2019, we extrapolate these values by assuming that the growth rate of CO2 footprint emissions is equal to the growth rate of CO2 territorial emissions provided by PRIMAP during this period ⁶.

2.4.2 From CO2 to GHG

1. For countries in the GCP database, we use GCP CO2 estimations as the baseline.
 - Over the period 1990-2015, we convert these values into GHG by simply adding the non CO2 component available in EORA. This operation is described by the following formula. Let $nfcar_{GCP}$ be the value of CO2 footprint emissions in GCP and $nfghg$ our estimation of the GHG footprint value. Let $nfghg_{EORA}$ and $nfcar_{EORA}$ be the values of CO2 and GHG obtained through EORA calculations. We approximate the GHG value of GCP using the following formula :

$$nfghg = nfcar_{GCP} + nfghg_{EORA} - nfcar_{EORA}$$

- Between 2015 and 2019, values are extrapolated, assuming that the growth rate of GHG footprint emissions is equal to the growth rate of CO2 emissions in GCP. Let $nfghg_i$ be our estimation for the GHG footprint value of year i, $nfcar_{GCP,i}$ the GCP value for CO2 footprint in year i. We compute the GHG value in year i+1 as follow :

$$nfghg_{i+1} = nfghg_i * \frac{nfcar_{GCP,i+1}}{nfcar_{GCP,i}}$$

2. For countries not present in GCP data, we use the EORA database directly. Between 2015 and 2019, we extrapolate available values, assuming that the growth rate of GHG footprint emissions in EORA is equal to the growth rate of territorial GHG in PRIMAP ⁷.

3 Aggregate territorial GHG emissions

3.1 Territorial carbon emissions

We use both PRIMAP-hist data and the Global Carbon Project (GCP) data for our territorial estimates [2, 3]. We see GCP as our benchmark source for carbon footprint estimations, and in order to remain as coherent as possible, we choose to use GCP territorial data whenever the carbon

⁵For a complete list of countries for which footprint estimates are available, see appended table 1.

⁶As detailed in the corresponding subsection, PRIMAP growth rate of CO2 emissions between 2018 and 2019 is assumed to be equal to the average growth rate over the 2015-2018 period.

⁷As detailed in the corresponding subsection, PRIMAP growth rate of GHG emissions between 2018 and 2019 is assumed to be equal to the average growth rate over the 2015-2018 period.

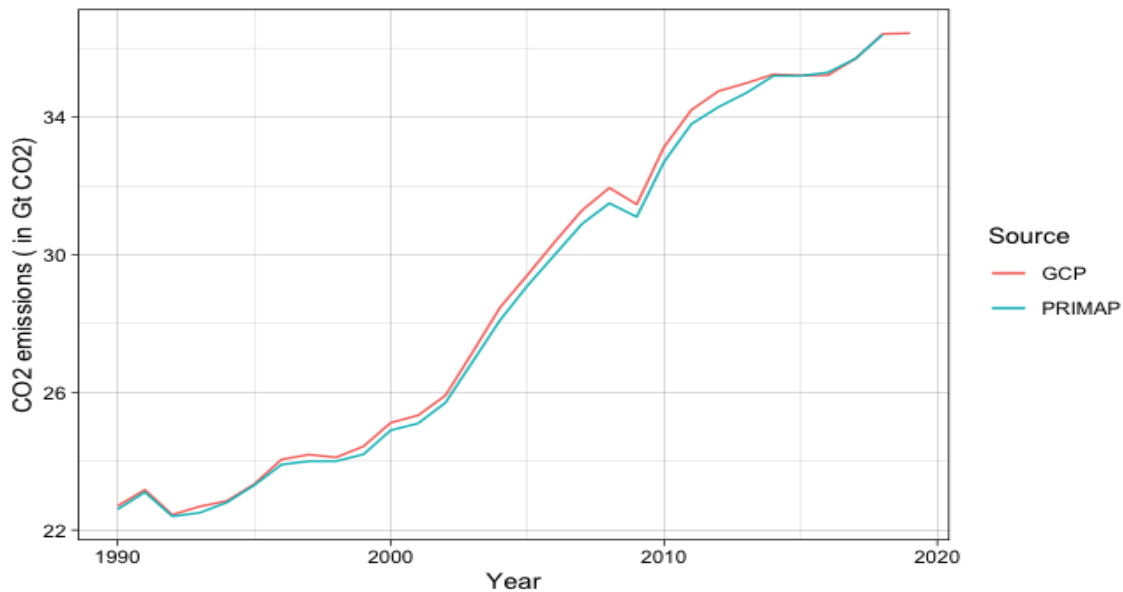


Figure 2: World CO2 emissions between 1990 and 2019 in GCP and PRIMAP

footprint estimation that we publish is available in GCP. It should be noted that numerous countries are not available in GCP. For these countries, we rely on PRIMAP-hist territorial values. Note that for these countries, we use EORA to calculate footprint estimations. The environmental account for EORA GHG and carbon estimation uses PRIMAP as its source, however it does not include the latest updates of the PRIMAP-HIST data and is only available for years 1990-2015. In order to provide the best territorial estimates possible, we use territorial emissions directly for the PRIMAP database (rather than the EORA environmental account) for the countries that are not available in GCP. For estimations before 1990, there is no country-level territorial data in GCP and we always provide estimations from the PRIMAP database. PRIMAP series are currently available until 2018. For year 2019, we extrapolate the 2018 CO2 PRIMAP value by assuming that the growth rate of CO2 emissions between 2018 and 2019 is equal to the average growth rate of CO2 emissions between 2015 and 2018. Overall, we do not find major differences between GCP and PRIMAP territorial estimations (see Figures 2 and 3). At the aggregate world level, we find that GCP and PRIMAP provide very similar world carbon totals across the 1990-2018 period. GCP estimates are slightly higher between 2007 and 2013 but the estimates overlap completely after 2007. To further explore the comparability of the data, we provide visual representation of the carbon territorial estimates for a small set of countries (3). Once again, we observe only small differences at the aggregate national level. The most important gap is the difference between the level Chinese emissions in both data-sets after 2011. In 2018, the estimate for Chinese territorial emissions of CO2 is equal to 9.96 Gt CO2 compared to 10.80 Gt in PRIMAP. This represents a difference of roughly 8% of the PRIMAP estimate⁸.

⁸See section B and C of the appendices for tables covering all countries.

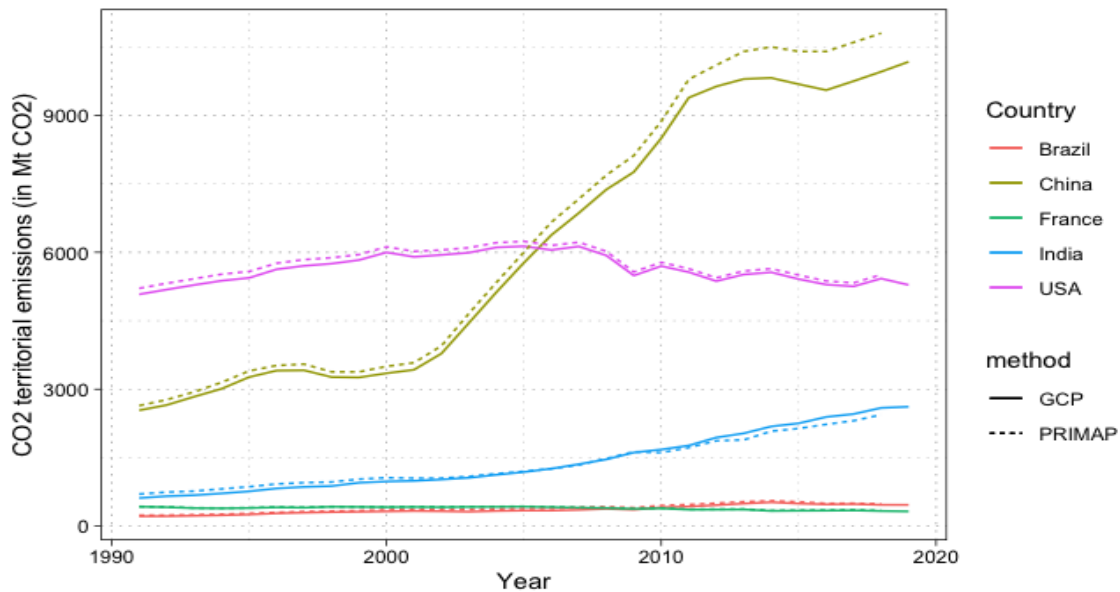


Figure 3: National territorial emissions of CO2 in PRIMAP and GCP

3.2 Territorial GHG emissions

1. For countries available in the GCP database, we use carbon data from GCP and combine it with values from PRIMAP for other gazes.
2. For other countries, we provide estimations from PRIMAP between 1990 and 2018. For year 2019, we extrapolate the 2018 GHG PRIMAP value by assuming that the growth rate of CO2 emissions between 2018 and 2019 is equal to the average growth rate of GHG emissions between 2015 and 2018.

3.3 Estimating direct emissions of households

Neither GCP nor PRIMAP provide separate estimates of direct household emissions (mainly heating and transport). Adjustments are required to isolate this category of emissions. In order to do so, we add external data on direct emissions from the GTAP ([1]) database for years 2004,2007,2011 and 2014. This data only concerns direct emissions of CO2 for the household sector but should encompass the bulk of household direct emissions. Starting from these four base years, we use the following extrapolation strategy :

- Before 2004 and after 2014, we assume that the share of direct emissions in the total footprint of every country remains constant. The growth rate of direct emissions is therefore always the same as the growth rate of the GHG footprint.
- Between each years for which we have data (2004,2007,2011 and 2014) we assume constant growth rate of direct emissions

To identify direct emissions at the aggregate level, it is then sufficient to subtract the corresponding value from the EORA total and add separately values obtained from our extrapolation of GTAP data.

3.4 LULUCF

Our estimations do not include emissions from Land-Use and Land-Use Change. While this sector is important to understand carbon dynamics, there is no clear consensus on the proper way to include them, and estimations are very volatile. As soon as progress is made on this front, we will include LULUCF emission in our annual country-level estimates.

4 Institutional sector decomposition

1. For countries in the GCP database, we decompose national aggregate CO2 and GHG footprint values into institutional sector values.
 - As institutional sector decomposition is not provided on GCP, we multiply aggregate GCP values with institutional sector shares that we obtain after running Input-Output model and tables provided by EORA. For example, let $h f g h g_i$ be our estimate of household GHG footprint emissions for year i in a given country and $n f g h g_i$ the nation GHG footprint emissions in this country. Let $h f g h g_{E O R A, i}$ and $n f g h g_{E O R A, i}$ the GHG footprint of the household sector and the aggregate GHG footprint at the national level. We have : $h f g h g_i = n f g h g_i * \frac{h f g h g_{E O R A, i}}{n f g h g_{E O R A, i}}$
 - Between, 2016 and 2019, we apply the same methodology but with institutional sector shares assumed constant and equal to the 2015 value from EORA calculations.
2. For other countries, We use institutional sector values from EORA over the period 1990-2015. Between 2016 and 2019, we extrapolate these values by assuming that institutional shares are constant and equal to the 2015 value from EORA and by multiplying applying them to the aggregate EORA footprint values.

5 1850-1990 estimations

In this section, we detail our methodology to produce values between 1850 and 1990. The GCP dataset does not provide any country level estimation during this period. EORA does not include years 1980-1990 in the main data but publishes detailed national level input output tables. For the moment, only total GHG values are given for years 1980-1990 (we do not make the distinction between CO2 and other gases).

5.1 Excluded countries

Seven countries are available in EORA but neither in GCP nor in PRIMAP. These are Bermuda, Cayman Islands, French Polynesia, Greenland, New Caledonia and Gaza strip. Due to the low precision of very small countries in EORA and the lack of cross-checking possibility, we decided

to remove these from our data-set. In general, according to EORA calculations between 1990 and 2015, these countries represent between 0.01% and 0.02% of aggregate world GHG emissions (see table 1).

Table 1: Share of world emissions represented by 7 excluded countries

Year	Share of world total (in %)	Year	Share of world total (in %)
1990	0.02	2003	0.02
1991	0.02	2004	0.02
1992	0.02	2005	0.01
1993	0.02	2006	0.02
1994	0.02	2007	0.02
1995	0.02	2008	0.02
1996	0.02	2009	0.02
1997	0.01	2010	0.02
1998	0.01	2011	0.02
1999	0.01	2012	0.02
2000	0.01	2013	0.02
2001	0.01	2014	0.02
2002	0.02	2015	0.02

5.2 Additional corrections

Some countries in the database have very low emission levels. This means that small variations in the levels of emissions can have important consequences in terms of growth rate. This, in conjunction with less precise data on relatively smaller countries can lead to erratic series, with yearly growth rates higher than 1 for multiple years, often fluctuating around a stable level. For these series, we believe that the data is not precise enough for yearly variations to be truly meaningful and we approximate the series by an OLS using all points that are available. This was systematically done for countries with a population of less than two million with erratic series as well as a few larger countries (Panama, Namibia and Liberia). For Sudan and South Sudan, we use a regional extrapolation to compute carbon and GHG footprints.

6 Metadata

To evaluate the quality and precision of our estimates as well as to provide incentives for the production of better data, we provide metadata for every series published online on WID.world. The quality component consists in a grade (/5) attributed using the following criteria. For aggregate series based on high quality territorial data (PRIMAP and GCP), we give between 4 and 5 stars. These series are relatively precise, published for recent years and yield very similar results across methodologies, making these territorial series very high quality. We use our transparency index as a proxy for the overall quality of data in a country and award a score of 5 for countries with transparency score higher than 10/20 and 4 for other countries.

For series with data taken from high quality input-output data (GCP), we give a grade of 3. This data, while generally good, is by definition less reliable than territorial data, slightly less up-to-date and not as detailed. However, we believe this data to provide good approximation of the variable we are trying to grasp and maintain a high score.

When we use arguably less robust input-output data (EORA) to provide national footprint estimations, we give a score of 2. This data is often less reliable, and some countries are extrapolated or fitted through an error propagation function. We are not very confident in the precision of this data, but publish it as a good first approximation. Finally, we provide decomposition at the institutional sector level. For these series, we give a score of 1. EORA is our only source for this decomposition on a large number of country, and the primary sources for this data are often very imprecise. We believe that important work to provide more precise data is necessary to improve this kind of crucial detailed data. Table 2 provides a summary of the quality grades of the main series that we produce.

Table 2: Quality index of WID.world carbon series

Data/Series	GHG footprint	Carbon footprint	GHG territorial	Carbon territorial	Institutional sector	Direct emissions
EORA	2	2	4/5	4/5	1	3
EORA and GCP	2	3	4/5	4/5	1	3

7 Stylised facts

7.1 World Totals

Our data, aggregated at the world level, shows a rise of emissions between 1990 and 2019 from 31 to 43 Gt CO₂e, representing an increase of more than one third of the 1990 level. (Note that PRIMAP-hist data, third party reporting indicates a value of around 50.5 Gt CO₂e for 2019.) Within this general trend, we observe a steady rise of total world emissions between 1990 and 2001 and a sharper rise between 2001 and 2014. Since 2014, the rise in emissions is slower but remains significant. Our decomposition in institutional sectors shows that around half of total emissions are household emissions, with a share slowly decreasing. While government emissions remain stable during the period, investment emissions share increased from around one fourth of total emissions to just under one third.

7.2 Aggregate regional totals

Figure 5 synthesizes aggregate GHG footprint emissions at an aggregate regional level. Our data confirms important trends in historical footprint emissions since 1980. We observe a rapid growth in Asian emissions, especially over the period 2000-2019 with emissions from China, India and other Asian countries soaring from around 13 Gt CO₂e in 2000 to around 28Gt at the start of 2020. We also observe a slow increase of CBA emissions in Sub-Saharan Africa, Latin America and MENA countries, as well as a slow decrease of European and North American emissions since 2006. Table 3 provides the detailed values for aggregate regional emissions of GHG.

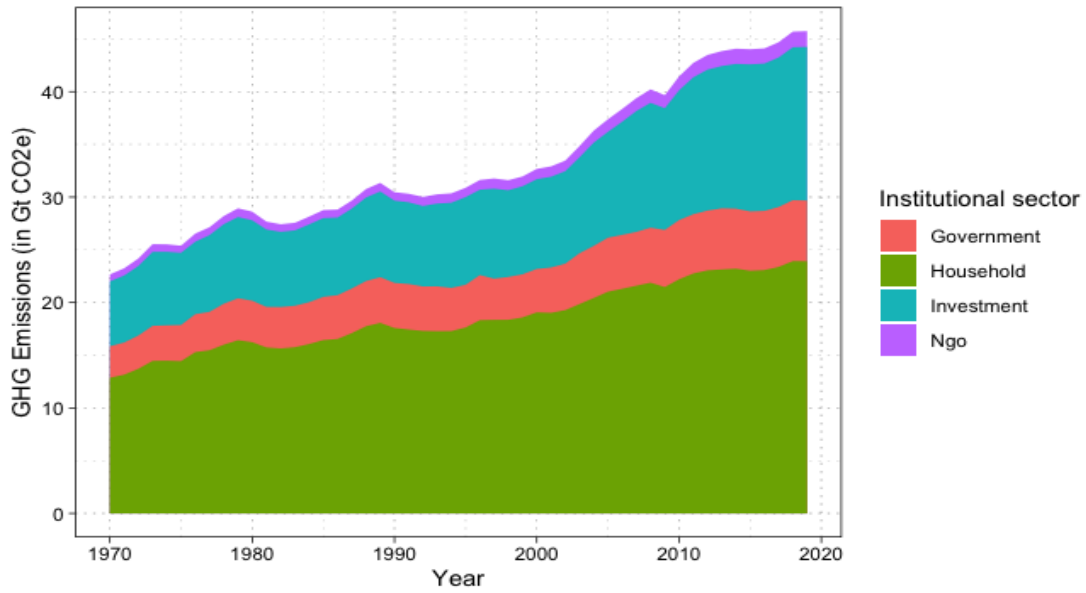


Figure 4: World GHG totals

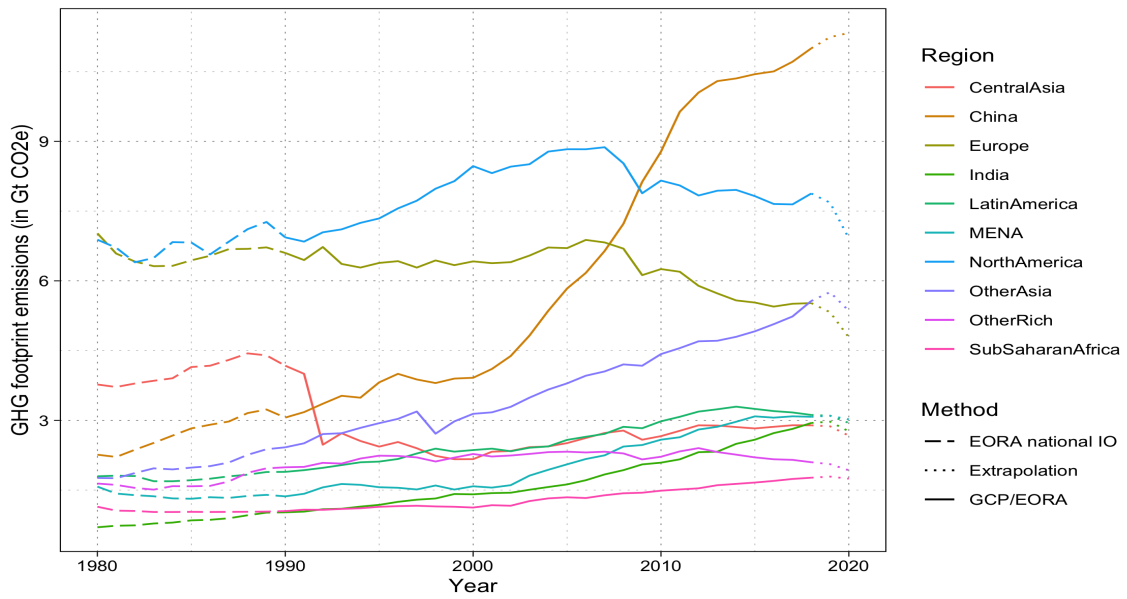


Figure 5: Regional emissions in EORA and GCP

Table 3: Aggregate regional footprint of GHG (in GT CO₂e)

	1980	1990	1995	2000	2005	2010	2015	2019
CentralAsia	3.771	4.175	2.435	2.166	2.510	2.660	2.826	2.872
China	2.261	3.059	3.817	3.915	5.834	8.780	10.445	11.242
Europe	7.022	6.600	6.385	6.419	6.704	6.253	5.533	5.325
India	0.700	1.022	1.182	1.409	1.622	2.090	2.584	2.971
LatinAmerica	1.796	1.892	2.113	2.361	2.579	2.979	3.246	3.099
MENA	1.575	1.365	1.562	1.582	2.054	2.584	3.086	3.098
NorthAmerica	6.885	6.935	7.343	8.468	8.831	8.156	7.822	7.682
OtherAsia	1.761	2.420	2.939	3.140	3.795	4.425	4.915	5.757
OtherRich	1.641	1.990	2.240	2.276	2.326	2.217	2.203	2.057
SubSaharanAfrica	1.141	1.048	1.140	1.124	1.345	1.487	1.662	1.790
World	28.553	30.506	31.156	32.859	37.599	41.632	44.322	45.893

7.3 Country Totals

Figure 6 summarises average levels of per capita emissions for a few countries. We find that consumption emissions of GHG for an American individual are in average ten times higher than for an Indian individual and around two and a half times higher than for a French individual. Despite a high aggregate level of territorial emissions, per capita footprint emissions of GHG in China remain lower than in France. However, while they were approximately five times lower in 1990, they have risen to similar levels in 2019.

Figures 7 to 10 present our estimates for per capita territorial and footprint emissions (GHG and CO₂) across the world in 2019. In general, we find that when we adopt a footprint accountancy, per capita emissions tend to be higher with a footprint accountancy in European and north American countries, while they tend to be lower in African and Asian countries. These observations support the idea that adopting a consumption based accountancy rather than a production based one tends to reveal higher levels of carbon inequalities across countries. Figures 11 to 14 show trends in per capita emissions. We show our results for trends since 1990 (Figures 11 and 13) and since 2005 (Figures 12 and 14). Since 2005, we observe a clear north/south demarcation with north-American, European countries and Australia decreasing their aggregate emissions while Asian, African and south-American countries tend to increase them. These clear trends are slightly mitigated when we look at per capita emissions but remain significant. If we adopt a deeper historical perspective and take into account trends between 1990 and 2019, we observe slightly different main trends. European countries constitute the bulk of countries with decreasing emissions over the period. Compared with a short term perspective (since 2005), in the longer run we observe that Canada, the United-States and Australia have seen an increase in aggregate GHG emissions in the last 30 years. While these facts are crucial to properly assess the evolution of carbon and GHG emissions throughout the world, observing a decrease or an increase in emissions does not tell the whole story. In the last few years, the importance of historical responsibility, that is to say total aggregate emissions over the last centuries has become a very important topic. While European and Northern American countries tend to reduce their emissions more rapidly than Asian, African or southern-American countries, they are also expected to do so as their emissions per person have been historically much higher. On the other hand, the de-

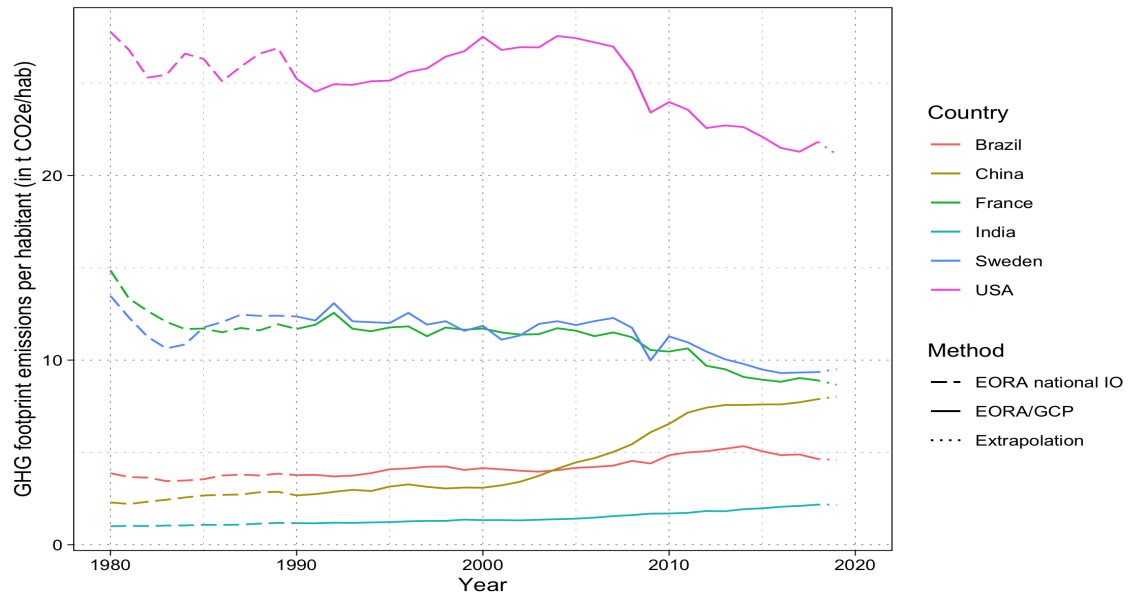


Figure 6: Country-level emissions in EORA and GCP

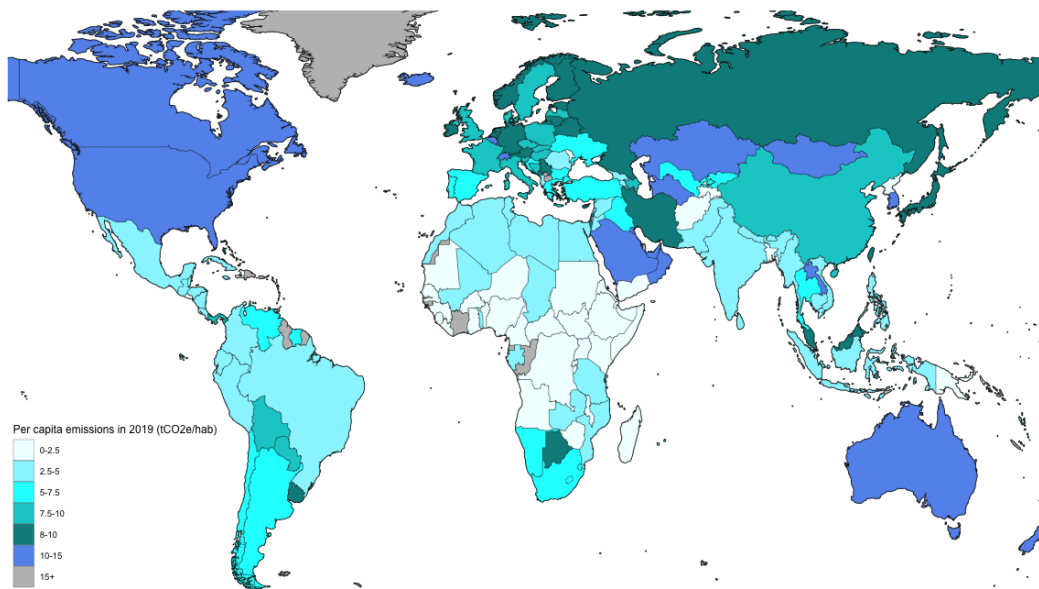


Figure 7: Per capita footprint emissions in 2019 (GHG)

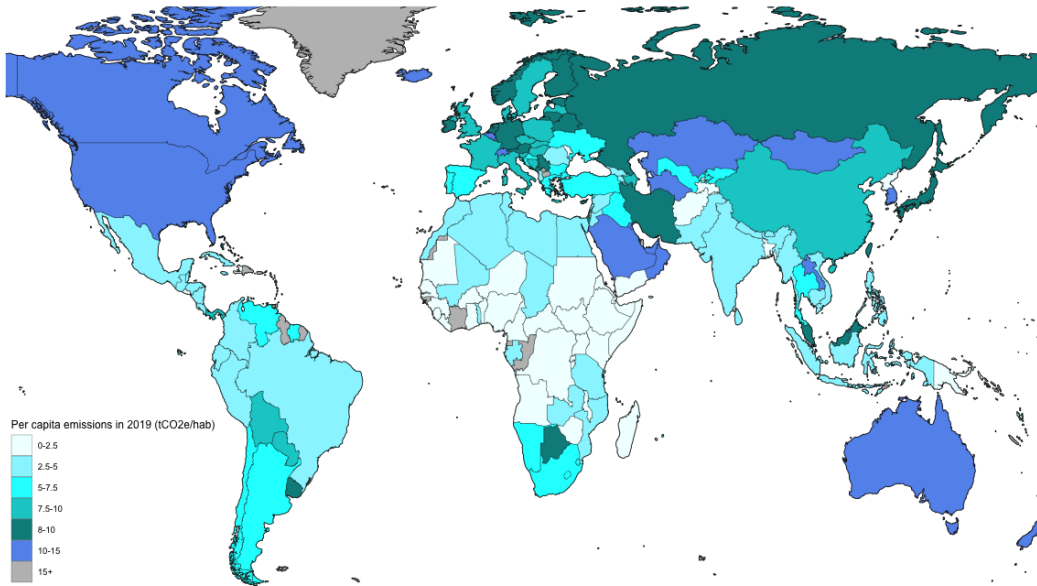


Figure 8: Per capita territorial emissions in 2019 (GHG)

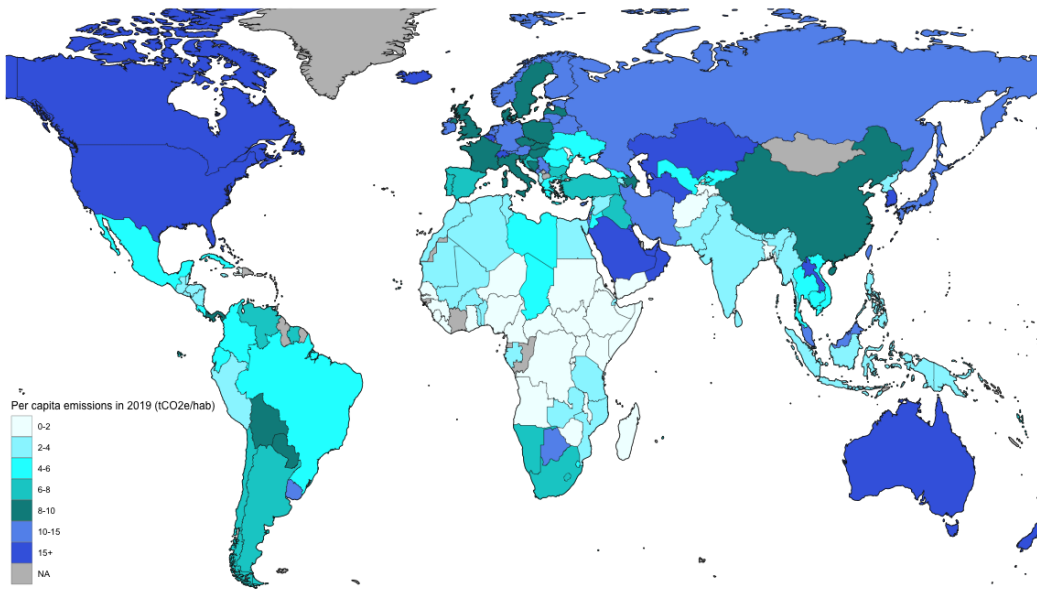


Figure 9: Per capita footprint emissions in 2019 (CO₂)

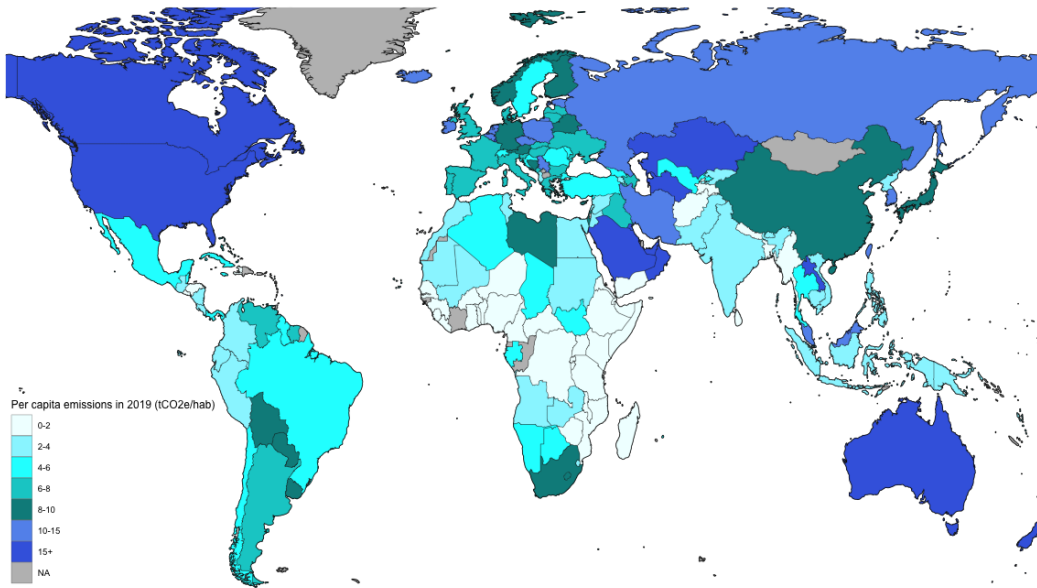


Figure 10: Per capita territorial emissions in 2019 (CO₂)

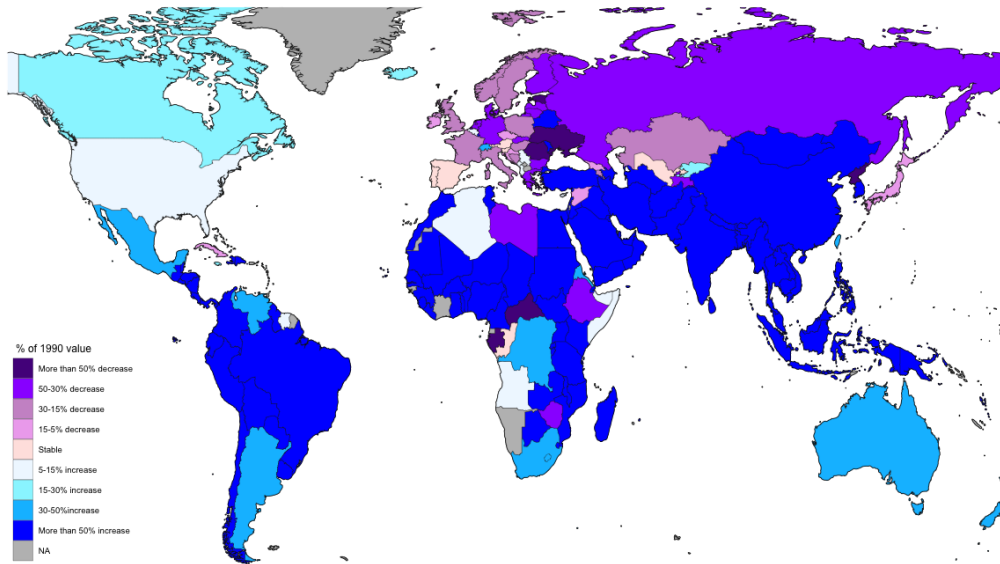


Figure 11: Trends in aggregate GHG footprint emissions between 1990 and 2019

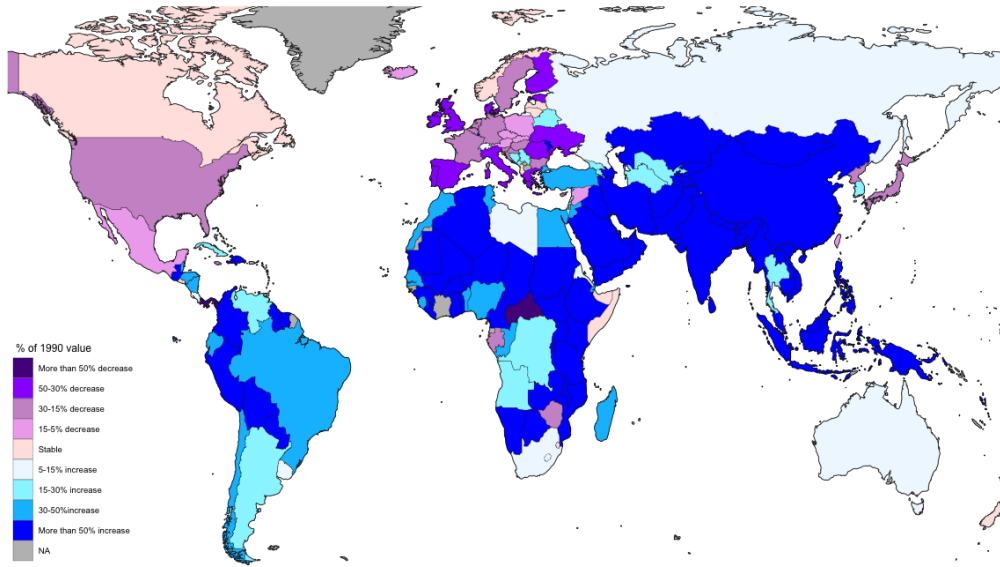


Figure 12: Trends in aggregate GHG footprint emissions between 2005 and 2019

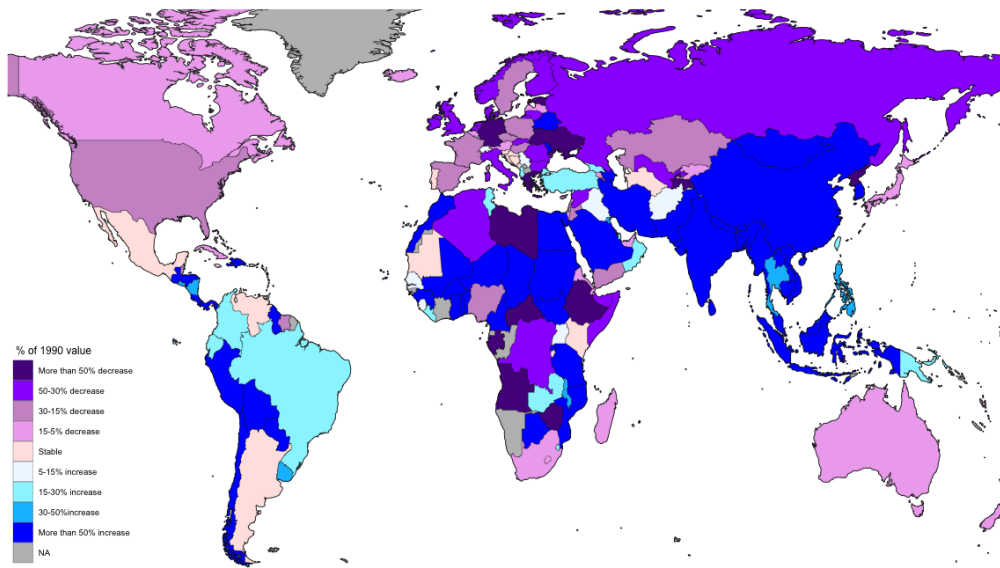


Figure 13: Trends in per capita GHG footprint emissions between 1990 and 2019

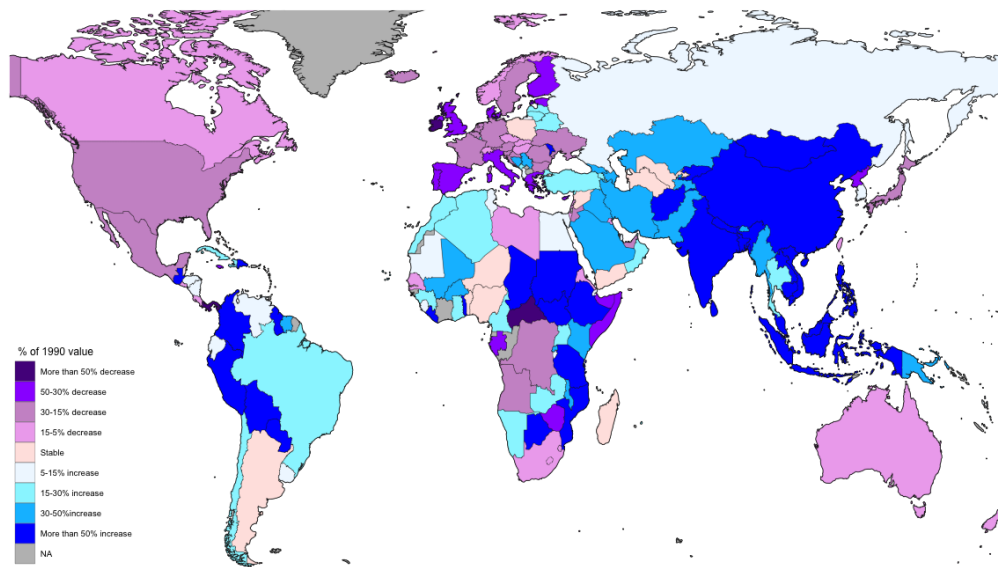


Figure 14: Trends in per capita GHG footprint emissions between 2005 and 2019

crease in per capita emissions in some African countries can often be due to worrisome changes in quality of life of poor populations rather than successful environmental policies. All in all, these observation are but a starting point for an assessment that would require country-by-country case studies.

8 Next Steps

This data-set is our best effort to this date to provide macro-economic estimations of GHG and carbon emissions throughout the world. The environmental footprint series that we publish lay the groundwork for a micro analysis of carbon inequalities within and across countries. For future developments, we believe that their are a number of directions in which we can improve these estimates.

1. For a proper analysis of carbon inequalities, it is paramount to inscribe carbon analyses in a consumption based accountancy framework. While we have done as much as possible to do so, with the data that is available, we stress that providing higher quality data on environmental footprints should be one of the most important way forward.
2. Our data, pre-1990 remains for the moment less precise than post-1990 values. Through a better usage of historical data available or production of new data, we believe that improving data for earlier period would be essential to our comprehension of modern environmental issues.
3. Finally, the question of the handling of direct household emissions is very important. We believe that such a question would require a separate and precise analysis of the primary

sources used to produce environmental databases in order to pinpoint the best methodology to identify this specific category of emissions.

Notwithstanding the limits inherent to the nature of the exercise, we believe the series published on WID.world to be an important step towards a better understanding of carbon inequalities throughout the world.

Appendices

To remain as transparent as possible, we publish in this section tables for carbon and GHG variables in our WID.world estimates. Because our estimates stem from a combination of various environmental data-sets, we also provide estimates directly from these sources as a comparison point.

A Availability of data in environmental databases

A.1: Data availability - 1/5

Country	EORA	GCP	PRIMAP	Gap between EORA and WID in 1990 (% 1990 WID value)
Afghanistan	Yes	No	Yes	0
Albania	Yes	Yes	Yes	-13.6
Algeria	Yes	No	Yes	-0.3
Andorra	Yes	No	Yes	-0.3
Angola	Yes	No	Yes	-0.3
Antigua	Yes	No	Yes	-0.4
Argentina	Yes	Yes	Yes	-0.7
Armenia	Yes	Yes	Yes	89
Aruba	Yes	No	Yes	-1.1
Australia	Yes	Yes	Yes	9.4
Austria	Yes	Yes	Yes	-3.5
Azerbaijan	Yes	Yes	Yes	5.91
Bahamas	Yes	No	Yes	-0.5
Bahrain	Yes	Yes	Yes	8.5
Bangladesh	Yes	Yes	Yes	0.4
Barbados	Yes	No	Yes	-0.3
Belarus	Yes	Yes	Yes	-99.8
Belgium	Yes	Yes	Yes	-26.1
Belize	Yes	No	Yes	-0.3
Benin	Yes	Yes	Yes	3.6
Bermuda	Yes	No	No	-0.7
Bhutan	Yes	No	Yes	-0.2
Bolivia	Yes	Yes	Yes	2.1
Bosnia and Herzegovina	Yes	No	Yes	0
Botswana	Yes	Yes	Yes	21.4
Brazil	Yes	Yes	Yes	-0.1
British Virgin Islands	Yes	No	Yes	-0.7
Brunei	Yes	Yes	Yes	-11.1
Bulgaria	Yes	Yes	Yes	1.5
Burkina Faso	Yes	Yes	Yes	4.6
Burundi	Yes	No	Yes	-0.1
Cambodia	Yes	Yes	Yes	-1.9
Cameroon	Yes	Yes	Yes	18.4
Canada	Yes	Yes	Yes	0.3
Cape Verde	Yes	No	Yes	-0.4
Cayman Islands	Yes	No	No	-0.5
Central African Republic	Yes	No	Yes	0
Chad	Yes	No	Yes	0

This table should be read as follow : Algerian data is present in the EORA and PRIMAP databases, but not in the GCP database. The difference in the 1990 value between the detailed national input output calculation and our estimation is equal to 0.3% of our 1990 estimation.

Data availability - 2/5

Country	EORA	GCP	PRIMAP	Gap between EORA and WID in 1990 (% 1990 WID value)
Chile	Yes	Yes	Yes	-0.7
China	Yes	Yes	Yes	-0.8
Colombia	Yes	Yes	Yes	-11.3
Congo	Yes	No	Yes	
Costa Rica	Yes	Yes	Yes	-1.1
Croatia	Yes	Yes	Yes	23.1
Cuba	Yes	No	Yes	-0.8
Cyprus	Yes	Yes	Yes	3.5
Czech Republic	Yes	No	Yes	-0.5
Cote d'Ivoire	Yes	Yes	Yes	6
North Korea	Yes	No	Yes	-0.5
DR Congo	Yes	No	Yes	-0.3
Denmark	Yes	Yes	Yes	-1.8
Djibouti	Yes	No	Yes	-0.7
Dominican Republic	Yes	Yes	Yes	
Ecuador	Yes	Yes	Yes	-3.4
Egypt	Yes	Yes	Yes	6.6
El Salvador	Yes	Yes	Yes	-0.8
Eritrea	Yes	No	Yes	-0.1
Estonia	Yes	Yes	Yes	16.8
Ethiopia	Yes	Yes	Yes	-1
Fiji	Yes	No	Yes	-0.9
Finland	Yes	Yes	Yes	-10.5
France	Yes	Yes	Yes	2.6
French Polynesia	Yes	No	No	-0.7
Gabon	Yes	No	Yes	-0.1
Gambia	Yes	No	Yes	-0.2
Georgia	Yes	Yes	Yes	98.7
Germany	Yes	Yes	Yes	-7
Ghana	Yes	Yes	Yes	-6.4
Greece	Yes	Yes	Yes	9.1
Greenland	Yes	No	No	-0.7
Guatemala	Yes	Yes	Yes	-4.5
Guinea	Yes	Yes	Yes	6.9
Guyana	Yes	No	Yes	-0.6
Haiti	Yes	No	Yes	-0.9
Honduras	Yes	Yes	Yes	4.2
Hong Kong	Yes	Yes	Yes	21.6

Data availability - 3/5

Country	EORA	GCP	PRIMAP	Gap between EORA and WID in 1990 (% 1990 WID value)
Hungary	Yes	Yes	Yes	-25.7
Iceland	Yes	No	Yes	-0.7
India	Yes	Yes	Yes	3
Indonesia	Yes	Yes	Yes	16.2
Iran	Yes	Yes	Yes	2.4
Iraq	Yes	No	Yes	-0.1
Ireland	Yes	Yes	Yes	-15.4
Israel	Yes	Yes	Yes	-9.8
Italy	Yes	Yes	Yes	-6.2
Jamaica	Yes	Yes	Yes	10.6
Japan	Yes	Yes	Yes	3.4
Jordan	Yes	Yes	Yes	-21.4
Kazakhstan	Yes	Yes	Yes	-2.5
Kenya	Yes	Yes	Yes	-0.6
Kuwait	Yes	Yes	Yes	22.8
Kyrgyzstan	Yes	Yes	Yes	17.6
Laos	Yes	Yes	Yes	-5.4
Latvia	Yes	Yes	Yes	16.9
Lebanon	Yes	No	Yes	-0.7
Lesotho	Yes	No	Yes	-0.3
Liberia	Yes	No	Yes	-1.8
Libya	Yes	No	Yes	-0.3
Liechtenstein	Yes	No	Yes	-0.3
Lithuania	Yes	Yes	Yes	7.2
Luxembourg	Yes	Yes	Yes	5.6
Macao SAR	Yes	No	Yes	
Madagascar	Yes	Yes	Yes	0.7
Malawi	Yes	Yes	Yes	1.7
Malaysia	Yes	Yes	Yes	-20.4
Maldives	Yes	No	Yes	-0.6
Mali	Yes	No	Yes	-0.1
Malta	Yes	Yes	Yes	-12.5
Mauritania	Yes	No	Yes	-0.2
Mauritius	Yes	Yes	Yes	8.9
Mexico	Yes	Yes	Yes	2.3
Monaco	Yes	No	Yes	-0.4
Mongolia	Yes	Yes	Yes	17.5
Montenegro	Yes	No	Yes	-0.4

Data availability - 4/5

Country	EORA	GCP	PRIMAP	Gap between EORA and WID in 1990 (% 1990 WID value)
Morocco	Yes	Yes	Yes	-12.7
Mozambique	Yes	Yes	Yes	-2.8
Myanmar	Yes	No	Yes	0
Namibia	Yes	No	Yes	36.7
Nepal	Yes	Yes	Yes	1.9
Netherlands	Yes	Yes	Yes	-17
Netherlands Antilles	Yes	No	Yes	-0.3
New Caledonia	Yes	No	No	-0.7
New Zealand	Yes	Yes	Yes	2.9
Nicaragua	Yes	Yes	Yes	2.4
Niger	Yes	No	Yes	-0.8
Nigeria	Yes	Yes	Yes	0
Norway	Yes	Yes	Yes	-0.5
Gaza Strip	Yes	No	No	-1
Oman	Yes	Yes	Yes	-10
Pakistan	Yes	Yes	Yes	-2.5
Panama	Yes	Yes	Yes	34.3
Papua New Guinea	Yes	No	Yes	-0.3
Paraguay	Yes	Yes	Yes	0.2
Peru	Yes	Yes	Yes	6.7
Philippines	Yes	Yes	Yes	-20.1
Poland	Yes	Yes	Yes	-9.4
Portugal	Yes	Yes	Yes	5.9
Qatar	Yes	Yes	Yes	4.2
South Korea	Yes	Yes	Yes	-11.5
Moldova	Yes	No	Yes	-0.1
Romania	Yes	Yes	Yes	-2.4
Russia	Yes	Yes	Yes	6.3
Rwanda	Yes	Yes	Yes	15.2
Samoa	Yes	No	Yes	-0.3
San Marino	Yes	No	Yes	-0.4
Sao Tome and Principe	Yes	No	Yes	-1.1
Saudi Arabia	Yes	Yes	Yes	-27.1
Senegal	Yes	Yes	Yes	4.9
Serbia	Yes	No	Yes	-0.1
Seychelles	Yes	No	Yes	-0.5
Sierra Leone	Yes	No	Yes	-0.1
Singapore	Yes	Yes	Yes	-42.9

Data availability - 5/5

Country	EORA	GCP	PRIMAP	Gap between EORA and WID in 1990 (% 1990 WID value)
Slovakia	Yes	Yes	Yes	35.4
Slovenia	Yes	Yes	Yes	5.2
Somalia	Yes	No	Yes	0
South Africa	Yes	Yes	Yes	15.2
South Sudan	Yes	No	Yes	-0.6
Spain	Yes	Yes	Yes	3.8
Sri Lanka	Yes	Yes	Yes	-7.4
Sudan	Yes	No	Yes	-0.6
Suriname	Yes	No	Yes	-1.2
Swaziland	Yes	No	Yes	-1
Sweden	Yes	Yes	Yes	-2.4
Switzerland	Yes	Yes	Yes	24.2
Syria	Yes	No	Yes	-0.1
Taiwan	Yes	Yes	Yes	-10
Tajikistan	Yes	No	Yes	-0.1
Thailand	Yes	Yes	Yes	-19.9
TFYR Macedonia	Yes	No	Yes	-0.5
Togo	Yes	Yes	Yes	-2.9
Trinidad and Tobago	Yes	Yes	Yes	29.4
Tunisia	Yes	Yes	Yes	-7
Turkey	Yes	Yes	Yes	-17.3
Turkmenistan	Yes	No	Yes	-0.1
Uganda	Yes	Yes	Yes	0
Ukraine	Yes	Yes	Yes	32.7
UAE	Yes	Yes	Yes	-25.8
UK	Yes	Yes	Yes	2.1
Tanzania	Yes	Yes	Yes	0.7
USA	Yes	Yes	Yes	3.7
Uruguay	Yes	Yes	Yes	2.6
Uzbekistan	Yes	No	Yes	-0.2
Vanuatu	Yes	No	Yes	-0.3
Venezuela	Yes	Yes	Yes	7
Viet Nam	Yes	Yes	Yes	-11
Yemen	Yes	No	Yes	-0.3
Zambia	Yes	Yes	Yes	3.1
Zimbabwe	Yes	Yes	Yes	-9.7

B Carbon territorial and footprint emissions

B.1: Carbon emissions, 1990 and 1995 (in Mt CO₂) - 1/3

Country	1990						1995					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Afghanistan	2.8	2.6	2.8	3.3		3.3	1.4	1.2	1.4	2.1		2.1
Albania	4.2	5.4	5.4	4.4	5.4	5.4	4.1	2.1	2.1	4.1	2.5	2.5
Algeria	78.5	76.7	78.5	64.7		64.7	96.7	95.0	96.7	62.8		62.8
Andorra	0.4	0.4	0.4	0.7		0.7	0.5	0.4	0.5	0.7		0.7
Angola	5.1	5.1	5.1	5.3		5.3	11	10.9	11	7.0		7.0
Antigua	0.3	0.2	0.3	0.7		0.7	0.3	0.2	0.3	0.7		0.7
Argentina	102	112.1	112.1	110.7	111.9	111.9	117	127.8	127.8	134.9	129.6	129.6
Armenia	21.8	18.2	18.2	27.8	12.1	12.1	11	3.4	3.4	11.0	2.7	2.7
Aruba	1.6	0.5	1.6	2.0		2.0	1.7	0.7	1.7	1.7		1.7
Australia	279	278.4	278.4	282.5	245.1	245.1	306	305.4	305.4	300.1	263.9	263.9
Austria	62.6	62.1	62.1	84.6	88.0	88.0	64.3	64.1	64.1	92.0	91.6	91.6
Azerbaijan	57.1	51.9	51.9	56.4	28.8	28.8	36.8	33.3	33.3	34.4	23.4	23.4
Bahamas	2.0	1.8	2.0	3.8		3.8	1.7	1.7	1.7	3.5		3.5
Bahrain	13.7	12.4	12.4	13.0	11.5	11.5	16.5	14.8	14.8	14.6	14.2	14.2
Bangladesh	14.1	14.1	14.1	18.4	18.1	18.1	21.9	21.0	21.0	25.2	26.2	26.2
Barbados	1.6	1.1	1.6	1.9		1.9	2.1	0.8	2.1	1.6		1.6
Belarus	106	103.7	103.7	0.1	59.9	59.9	58.2	57.4	57.4	0.1	33.6	33.6
Belgium	120	120.3	120.3	108.7	155.9	155.9	126	126.0	126.0	117.9	166.0	166.0
Belize	0.3	0.3	0.3	0.6		0.6	0.4	0.4	0.4	0.6		0.6
Benin	0.7	0.7	0.7	1.2	1.0	1.0	1.3	1.3	1.3	1.8	1.7	1.7
Bhutan	0.2	0.1	0.2	0.4		0.4	0.3	0.2	0.3	0.4		0.4
Bolivia	5.4	5.7	5.7	5.9	5.6	5.6	8.8	9.8	9.8	8.4	9.0	9.0
Bosnia and Herzegovina	27.1	19.4	27.1	27.9		27.9	2.7	3.4	2.7	5.4		5.4
Botswana	2.7	2.7	2.7	5.9	2.7	2.7	3.1	3.0	3.0	7.2	3.0	3.0
Brazil	225	206.9	206.9	235.2	234.5	234.5	279	255.6	255.6	315.1	285.2	285.2
British Virgin Islands	0.1	0.1	0.1	0.3		0.3	0.1	0.1	0.1	0.3		0.3
Brunei	6.2	6.2	6.2	3.8	4.5	4.5	4.8	4.8	4.8	3.3	4.8	4.8
Bulgaria	76.7	76.7	76.7	62.6	61.2	61.2	57.7	57.7	57.7	39.9	46.3	46.3
Burkina Faso	0.6	0.6	0.6	1.5	0.8	0.8	0.7	0.6	0.6	1.1	0.9	0.9
Burundi	0.1	0.2	0.1	0.6		0.6	0.2	0.2	0.2	0.5		0.5
Cambodia	1.3	1.3	1.3	1.6	1.9	1.9	1.6	1.5	1.5	2.9	2.1	2.1
Cameroon	3.6	0.6	0.6	5.2	1.4	1.4	11.7	3.2	3.2	11.5	3.7	3.7
Canada	463	462.1	462.1	492.5	489.1	489.1	495	494.9	494.9	494.5	502.6	502.6
Cape Verde	0.1	0.1	0.1	0.4		0.4	0.1	0.1	0.1	0.4		0.4
Central African Republic	0.2	0.2	0.2	0.6		0.6	0.2	0.2	0.2	0.5		0.5
Chad	0.2	0.4	0.2	0.5		0.5	0.1	0.4	0.1	0.3		0.3
Chile	33.6	32.9	32.9	31.9	32.2	32.2	41.6	41.1	41.1	44.3	41.2	41.2
China	2,510	2,420.8	2,420.8	2,048.7	2,263.7	2,263.7	3,400	3,265.1	3,265.1	2,700.5	2,911.1	2,911.1
Colombia	46.6	56.9	56.9	50.9	63.3	63.3	56.6	58.8	58.8	68.1	67.2	67.2
Congo	1.2	1.0	1.2	1.5		1.5	1.6	1.2	1.6	1.6		1.6
Costa Rica	2.8	2.9	2.9	5.1	5.1	5.1	4.8	4.8	4.8	7.3	6.7	6.7
Croatia	23.5	23.3	23.3	28.3	21.3	21.3	16.9	16.9	16.9	21.2	19.2	19.2
Cuba	34.7	32.7	34.7	42.2		42.2	26.5	25.6	26.5	30.8		30.8
Cyprus	4.7	4.7	4.7	7.0	6.7	6.7	5.9	5.9	5.9	8.8	7.7	7.7
Czech Republic	164	164.2	164	104.3		104.3	132	131.6	132	98.5		98.5
Cote d'Ivoire	5.1	4.8	4.8	6.9	5.9	5.9	6.9	6.1	6.1	6.8	7.1	7.1
North Korea	183	122.4	183	163.3		163.3	120	81.3	120	95.2		95.2
DR Congo	3.8	4.2	3.8	5.8		5.8	2.9	2.1	2.9	4.6		4.6
Denmark	54.9	53.6	53.6	60.9	61.6	61.6	62.7	61.6	61.6	68.7	67.7	67.7
Djibouti	0.3	0.3	0.3	0.6		0.6	0.3	0.3	0.3	0.4		0.4
Dominican Republic	0.1	9.2	9.2	10.6	9.5	9.5	0.1	15.8	15.8	18.0	15.4	15.4
Ecuador	16.9	16.5	16.5	15.7	17.0	17.0	22.9	22.7	22.7	21.8	22.7	22.7
Egypt	85	75.2	75.2	89.7	81.7	81.7	91.9	94.9	94.9	95.7	98.6	98.6
El Salvador	2.7	2.5	2.5	4.0	4.0	4.0	5.2	5.0	5.0	6.8	6.5	6.5
Eritrea	0.7		0.7	1.0		1.0	0.8	0.8	0.8	1.1		1.1
Estonia	38.2	36.9	36.9	37.7	31.2	31.2	19.9	18.0	18.0	13.9	15.5	15.5
Ethiopia	2.5	3.0	3.0	3.4	3.9	3.9	2.3	2.5	2.5	0.7	3.7	3.7
Fiji	0.8	0.8	0.8	1.3		1.3	0.8	0.8	0.8	1.1		1.1
Finland	57.1	57.0	57.0	71.6	80.2	80.2	59.1	58.1	58.1	64.6	74.7	74.7
France	406	400.8	400.8	519.4	497.9	497.9	403	397.1	397.1	534.9	507.8	507.8

Carbon emissions, 1990 and 1995 (in Mt CO2) - 2/3

Country	1990						1995					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Gabon	4.5	4.5	4.5	4.9		4.9	4.6	4.6	4.6	4.3		4.3
Gambia	0.2	0.2	0.2	0.5		0.5	0.2	0.2	0.2	0.5		0.5
Georgia	37	27.6	27.6	47.2	17.1	17.1	5.0	2.3	2.3	5.8	2.3	2.3
Germany	1,050	1,052.3	1,052.3	1,097.5	1,191.0	1,191.0	939	939.2	939.2	1,054.5	1,135.5	1,135.5
Ghana	3.0	3.8	3.8	4.1	4.8	4.8	3.7	5.2	5.2	4.5	6.4	6.4
Greece	83.6	83.4	83.4	108.3	96.2	96.2	87.1	87.0	87.0	117.2	100.2	100.2
Guatemala	4.5	5.0	5.0	6.0	6.6	6.6	10.2	7.1	7.1	12.1	9.0	9.0
Guinea	1.0	1.0	1.0	1.6	1.0	1.0	1.3	1.2	1.2	1.7	1.2	1.2
Guyana	1.4	1.1	1.4	21.1		21.1	1.5	1.6	1.5	28.7		28.7
Haiti	0.6	1.0	0.6	1.4		1.4	1	0.9	1	1.3		1.3
Honduras	3.0	2.4	2.4	3.7	3.2	3.2	4.3	3.8	3.8	4.6	4.4	4.4
Hong Kong	27.3	27.1	27.1	114.6	86.5	86.5	31.5	31.3	31.3	222.9	127.8	127.8
Hungary	73.5	73.5	73.5	63.0	89.7	89.7	61.7	61.7	61.7	54.7	74.7	74.7
Iceland	2.2	2.2	2.2	3.3		3.3	2.5	2.5	2.5	3.4		3.4
India	658	578.7	578.7	644.6	613.2	613.2	863	762.3	762.3	810.1	765.5	765.5
Indonesia	206	150.3	150.3	193.0	143.5	143.5	288	226.5	226.5	267.5	208.2	208.2
Iran	212	209.2	209.2	211.5	201.7	201.7	275	271.1	271.1	239.6	249.7	249.7
Iraq	47.9	49.1	47.9	53.6		53.6	75.1	74.1	75.1	61.4		61.4
Ireland	33.1	32.9	32.9	31.2	39.6	39.6	36	35.9	35.9	36.4	41.9	41.9
Israel	36.7	35.8	35.8	44.0	49.6	49.6	50.8	49.9	49.9	63.0	64.9	64.9
Italy	438	438.0	438.0	523.2	563.0	563.0	448	448.3	448.3	511.9	558.3	558.3
Jamaica	7.4	7.5	7.5	8.5	7.4	7.4	9.0	9.2	9.2	10.3	8.7	8.7
Japan	1,160	1,158.4	1,158.4	1,394.4	1,321.7	1,321.7	1,240	1,239.9	1,239.9	1,606.5	1,499.8	1,499.8
Jordan	10.4	10.5	10.5	12.1	15.8	15.8	13.6	13.2	13.2	15.3	18.1	18.1
Kazakhstan	281	281.2	281.2	285.2	291.9	291.9	178	178.2	178.2	152.4	136.6	136.6
Kenya	5.6	5.7	5.7	7.9	8.0	8.0	7.2	7.4	7.4	9.6	10.2	10.2
Kuwait	52.5	37.8	37.8	51.7	39.1	39.1	56.7	54.6	54.6	48.5	51.8	51.8
Kyrgyzstan	20.8	21.1	21.1	26.9	21.1	21.1	5.7	4.5	4.5	6.0	9.9	9.9
Laos	0.2	0.5	0.5	0.5	0.8	0.8	0.4	0.7	0.7	0.7	1.2	1.2
Latvia	19.6	19.5	19.5	26.3	21.1	21.1	9.1	9.1	9.1	9.7	12.4	12.4
Lebanon	9.3	7.9	9.3	12.1		12.1	14.8	12.3	14.8	20.4		20.4
Lesotho	1.5	1.5	1.5	2.2		2.2	1.7	1.7	1.7	2.0		2.0
Liberia	0.5	0.5	0.5	0.4		0.4	0.3	0.4	0.3	0.2		0.2
Libya	38.1	36.5	38.1	27.7		27.7	48.3	45.7	48.3	34.1		34.1
Liechtenstein	0.2	0.2	0.2	0.4		0.4	0.2	0.2	0.2	0.3		0.3
Lithuania	35.8	35.8	35.8	47.8	42.6	42.6	15.1	15.1	15.1	16.5	27.2	27.2
Luxembourg	11.8	11.8	11.8	12.7	11.8	11.8	9.2	9.2	9.2	12.0	9.2	9.2
Macao SAR	1.0		1.0	2.5		2.5	1.2		1.2	3.4		3.4
Madagascar	0.9	0.9	0.9	1.5	1.3	1.3	1.2	1.3	1.3	1.7	1.7	1.7
Malawi	0.8	0.7	0.7	1.6	1.5	1.5	0.9	0.9	0.9	1.7	1.8	1.8
Malaysia	62.6	55.3	55.3	50.3	66.4	66.4	98.3	113.9	113.9	92.1	100.0	100.0
Maldives	0.1	0.2	0.1	0.3		0.3	0.2	0.2	0.2	0.4		0.4
Mali	0.9	0.4	0.9	1.6		1.6	1.0	0.5	1.0	1.6		1.6
Malta	2.4	2.4	2.4	2.9	3.3	3.3	2.5	2.5	2.5	3.4	3.7	3.7
Mauritania	0.9	0.9	0.9	1.4		1.4	1.1	1.0	1.1	1.3		1.3
Mauritius	1.7	1.5	1.5	2.9	2.6	2.6	2.1	1.8	1.8	3.6	3.4	3.4
Mexico	321	317.0	317.0	333.7	321.6	321.6	349	331.6	331.6	328.2	322.6	322.6
Monaco	0.1		0.1	0.3		0.3	0.1		0.1	0.3		0.3
Mongolia	11.1	9.9	9.9	12.7	9.0	9.0	8.8	7.9	7.9	7.4	6.0	6.0
Montenegro	2.7	1.9	2.7	2.9		2.9	1.0	1.3	1.0	1.1		1.1
Morocco	22.3	22.5	22.5	25.4	31.2	31.2	28.7	29.2	29.2	29.0	37.3	37.3
Mozambique	1.5	1.0	1.0	2.5	3.2	3.2	1.6	1.1	1.1	2.5	3.5	3.5
Myanmar	3.6	4.2	3.6	5.9		5.9	5.8	6.9	5.8	7.4		7.4
Namibia	0.9			3.2	0		1.4	1.6		4.5	1.6	
Nepal	0.7	0.8	0.8	1.6	1.2	1.2	2.1	2.4	2.4	3.2	2.9	2.9
Netherlands	162	162.4	162.4	159.1	201.1	201.1	173	173.0	173.0	177.0	218.3	218.3
Netherlands Antilles	5.4		5.4	5.9		5.9	5.2		5.2	4.9		4.9

Carbon emissions, 1990 and 1995 (in Mt CO₂) - 3/3

Country	1990						1995					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
New Zealand	25.4	25.4	25.4	28.7	26.9	26.9	28.1	28.0	28.0	33.7	30.5	30.5
Nicaragua	2.1	2.0	2.0	2.7	2.5	2.5	2.8	2.8	2.8	3.3	3.3	3.3
Niger	0.6	0.6	0.6	1.1		1.1	1.5	0.6	1.5	1.5		1.5
Nigeria	40.5	38.9	38.9	39.5	37.9	37.9	36.7	33.4	33.4	40.0	33.8	33.8
Norway	35.3	35.3	35.3	50.6		50.6	38.7	38.7	38.7	54.1		54.1
Oman	11.8	11.2	11.2	9.9	12.5	12.5	16.6	15.7	15.7	12.8	17.5	17.5
Pakistan	72.4	67.8	67.8	68.6	72.2	72.2	89	83.6	83.6	82.7	88.4	88.4
Panama	2.8	2.6	2.6	5.4	2.9	2.9	3.0	3.7	3.7	6.5	3.5	3.5
Papua New Guinea	2.2	2.2	2.2	3.0		3.0	2.1	2.1	2.1	2.3		2.3
Paraguay	2.5	2.1	2.1	3.8	3.7	3.7	4.5	3.9	3.9	6.4	5.6	5.6
Peru	25.2	21.4	21.4	27.3	23.9	23.9	30.5	24.6	24.6	35.0	28.1	28.1
Philippines	42.9	41.3	41.3	42.6	61.5	61.5	61.7	59.9	59.9	66.2	79.0	79.0
Poland	377	376.5	376.5	286.7	322.6	322.6	363	362.8	362.8	306.6	320.8	320.8
Portugal	45.1	45.1	45.1	56.3	52.0	52.0	54.5	54.5	54.5	69.6	63.3	63.3
Qatar	13.6	11.7	11.7	11.8	11.0	11.0	33.7	31.7	31.7	23.6	28.3	28.3
South Korea	268	247.4	247.4	282.5	318.9	318.9	390	374.0	374.0	441.0	444.7	444.7
Moldova	37	27.8	37	0.5		0.5	12	11.4	12	0.1		0.1
Romania	171	169.3	169.3	152.6	156.7	156.7	129	127.0	127.0	111.9	105.8	105.8
Russia	2,550	2,525.3	2,525.3	2,304.7	2,039.1	2,039.1	1,640	1,612.9	1,612.9	1,499.4	1,171.2	1,171.2
Rwanda	0.6	0.5	0.5	1.1	0.5	0.5	0.5	0.5	0.5	0.8	0.5	0.5
Samoa	0.1	0.1	0.1	0.3		0.3	0.1	0.1	0.1	0.2		0.2
San Marino	0.2		0.2	0.5		0.5	0.2		0.2	0.4		0.4
Sao Tome and Principe	0.05	0.05	0.05	0.2		0.2	0.05	0.05	0.05	0.1		0.1
Saudi Arabia	139	185.5	185.5	112.7	174.9	174.9	192	234.7	234.7	145.4	222.6	222.6
Senegal	3.2	3.1	3.1	4.1	3.4	3.4	3.5	3.4	3.4	4.1	3.8	3.8
Serbia	58.9	56.4	58.9	62.1		62.1	40.2	39.1	40.2	41.4		41.4
Seychelles	0.2	0.2	0.2	0.5		0.5	0.2	0.2	0.2	0.5		0.5
Sierra Leone	0.5	0.5	0.5	0.7		0.7	0.4	0.2	0.4	0.6		0.6
Singapore	21.7	44.3	44.3	37.3	71.5	71.5	24	41.8	41.8	61.1	90.8	90.8
Slovakia	61.6	61.6	61.6	109.5	73.0	73.0	44.3	44.3	44.3	44.5	47.2	47.2
Slovenia	15.1	15.1	15.1	17.1	15.9	15.9	15.3	15.3	15.3	15.7	18.4	18.4
Somalia	0.8	0.7	0.8	1.1		1.1	0.6	0.6	0.6	0.7		0.7
South Africa	299	313.0	313.0	262.8	219.0	219.0	346	361.6	361.6	296.2	260.1	260.1
South Sudan	0.5	0.4	0.5	0.05		0.05	0.4	0.4	0.4	0.02		0.02
Spain	231	231.2	231.2	280.1	265.3	265.3	267	267.4	267.4	310.5	287.5	287.5
Sri Lanka	4.1	3.8	3.8	5.2	6.3	6.3	6.1	5.8	5.8	7.9	9.2	9.2
Sudan	4.8	4.8	4.8	0.05		0.05	4.0	3.9	4.0	0.02		0.02
Suriname	1.8	1.7	1.8	2.4		2.4	2.1	2.1	2.1	1.9		1.9
Swaziland	0.4	1.0	0.4	1.8		1.8	0.5	1.1	0.5	2.7		2.7
Sweden	57.3	57.3	57.3	83.0	85.0	85.0	59.4	59.4	59.4	83.3	84.7	84.7
Switzerland	44.2	44.2	44.2	113.7	85.2	85.2	43.4	43.4	43.4	88.1	89.5	89.5
Syria	37.5	37.0	37.5	38.6		38.6	41.8	41.2	41.8	36.5		36.5
Taiwan	128	120.4	120.4	154.6	172.1	172.1	179	165.6	165.6	165.0	213.7	213.7
Tajikistan	17.8	10.1	17.8	15.8		15.8	4.8	2.4	4.8	5.0		5.0
Thailand	92.3	87.9	87.9	86.1	120.5	120.5	163	156.6	156.6	152.7	175.0	175.0
TFYR Macedonia	10.1	14.2	10.1	9.7		9.7	9.1	10.6	9.1	8.9		8.9
Togo	1.0	1.0	1.0	1.2	1.3	1.3	1.7	1.2	1.2	1.5	1.7	1.7
Trinidad and Tobago	20.9	17.0	17.0	16.6	11.7	11.7	21.8	16.5	16.5	12.8	11.2	11.2
Tunisia	13.3	13.1	13.1	14.7	16.1	16.1	15.7	15.5	15.5	17.7	18.0	18.0
Turkey	156	151.5	151.5	168.4	216.1	216.1	183	180.9	180.9	201.1	222.2	222.2
Turkmenistan	19.6	41.2	19.6	23.1		23.1	17.7	33.9	17.7	20.7		20.7
Uganda	0.8	0.8	0.8	1.5	1.5	1.5	1	0.9	0.9	2.0	2.0	2.0
Ukraine	706	705.8	705.8	741.9	505.3	505.3	390	389.9	389.9	337.5	221.8	221.8
UAE	46.4	51.7	51.7	40.2	56.1	56.1	63.5	70.0	70.0	68.0	77.5	77.5
UK	601	600.5	600.5	689.8	669.0	669.0	568	566.8	566.8	673.4	647.3	647.3
Tanzania	2.4	2.1	2.1	3.7	3.5	3.5	3.6	2.4	2.4	5.3	4.0	4.0
USA	5,260	5,128.3	5,128.3	5,311.7	5,045.1	5,045.1	5,580	5,438.9	5,438.9	5,740.4	5,369.1	5,369.1
Uruguay	4.2	4.0	4.0	5.6	4.9	4.9	4.9	4.6	4.6	6.5	6.0	6.0
Uzbekistan	115	109.9	115	132.5		132.5	104	102.7	104	94.1		94.1
Vanuatu	0.1	0.1	0.1	0.3		0.3	0.1	0.1	0.1	0.2		0.2
Venezuela	126	121.8	121.8	104.3	94.3	94.3	139	132.9	132.9	115.7	116.4	116.4
Viet Nam	21.2	21.2	21.2	17.7	23.1	23.1	29.5	28.5	28.5	29.9	30.8	30.8
Yemen	9.7	9.5	9.7	13.0		13.0	11.3	10.4	11.3	12.1		12.1
Zambia	2.5	2.4	2.4	3.8	2.7	2.7	2.2	2.1	2.1	3.5	3.2	3.2
Zimbabwe	15.5	15.6	15.6	15.5	17.8	17.8	17.5	15.0	15.0	16.3	16.2	16.2

B.2: Carbon emissions, 2000 and 2005 (in Mt CO2) - 1/3

Country	2000						2005					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Afghanistan	0.9	0.8	0.9	1.9		1.9	1.5	1.3	1.5	3.2		3.2
Albania	3.6	3.0	3.0	3.9	3.8	3.8	4.6	4.2	4.2	5.9	5.7	5.7
Algeria	89.9	87.4	89.9	46.1		46.1	110	106.5	110	52.2		52.2
Andorra	0.6	0.5	0.6	0.8		0.8	0.6	0.6	0.6	1.0		1.0
Angola	9.6	9.5	9.6	6.9		6.9	19.1	19.0	19.1	14.2		14.2
Antigua	0.3	0.3	0.3	0.7		0.7	0.4	0.4	0.4	0.8		0.8
Argentina	139	142.4	142.4	159.2	139.9	139.9	156	161.4	161.4	151.9	134.3	134.3
Armenia	3.3	3.5	3.5	3.6	4.0	4.0	4.3	4.4	4.4	4.6	5.4	5.4
Aruba	2.4	2.4	2.4	2.1		2.1	2.7	2.7	2.7	2.3		2.3
Australia	350	350.2	350.2	340.5	290.0	290.0	387	386.5	386.5	397.2	341.3	341.3
Austria	66.5	66.2	66.2	91.3	96.6	96.6	79.5	79.2	79.2	105.9	106.2	106.2
Azerbaijan	29.4	29.5	29.5	24.5	25.7	25.7	36.9	34.3	34.3	29.4	34.6	34.6
Bahamas	1.7	1.9	1.7	3.4		3.4	1.8	1.8	1.8	3.4		3.4
Bahrain	20.5	18.8	18.8	17.1	12.6	12.6	21.8	19.8	19.8	17.5	12.9	12.9
Bangladesh	29.6	26.5	26.5	31.9	32.8	32.8	42.2	37.7	37.7	44.6	49.0	49.0
Barbados	2.9	1.2	2.9	1.9		1.9	3.3	1.3	3.3	2.2		2.2
Belarus	55.6	54.9	54.9	0.1	65.4	65.4	62.2	61.4	61.4	0.1	60.3	60.3
Belgium	127	126.7	126.7	115.3	188.9	188.9	126	125.7	125.7	113.8	214.1	214.1
Belize	0.4	0.4	0.4	0.6		0.6	0.4	0.4	0.4	0.7		0.7
Benin	1.6	1.6	1.6	1.8	2.6	2.6	2.4	2.4	2.4	2.9	4.6	4.6
Bhutan	0.5	0.4	0.5	0.5		0.5	0.5	0.4	0.5	0.6		0.6
Bolivia	7.8	11.0	11.0	7.6	11.1	11.1	10.9	12.1	12.1	9.4	10.2	10.2
Bosnia and Herzegovina	13.7	13.7	13.7	14.0		14.0	16.6	16.0	16.6	16.8		16.8
Botswana	4	3.8	3.8	7.9	7.7	7.7	5.0	4.1	4.1	9.3	7.5	7.5
Brazil	358	324.2	324.2	381.3	336.8	336.8	383	342.1	342.1	394.9	334.4	334.4
British Virgin Islands	0.1	0.1	0.1	0.3		0.3	0.1	0.2	0.1	0.3		0.3
Brunei	4.7	4.6	4.6	2.8	3.1	3.1	5.0	4.9	4.9	2.8	4.2	4.2
Bulgaria	45.3	45.3	45.3	30.8	44.5	44.5	50.7	50.7	50.7	40.5	47.4	47.4
Burkina Faso	1.1	1.0	1.0	1.3	1.5	1.5	1.2	1.1	1.1	1.6	1.6	1.6
Burundi	0.2	0.3	0.2	0.5		0.5	0.2	0.2	0.2	0.4		0.4
Cambodia	2.1	2.0	2.0	3.1	2.8	2.8	2.9	2.8	2.8	4.6	6.0	6.0
Cameroon	10	3.3	3.3	10.0	4.0	4.0	9.5	3.6	3.6	10.4	5.2	5.2
Canada	573	572.2	572.2	507.2	567.8	567.8	577	576.4	576.4	548.4	576.7	576.7
Cape Verde	0.2	0.2	0.2	0.4		0.4	0.4	0.4	0.4	0.7		0.7
Central African Republic	0.2	0.3	0.2	0.5		0.5	0.2	0.2	0.2	0.5		0.5
Chad	0.2	0.5	0.2	0.4		0.4	0.6	0.8	0.6	0.8		0.8
Chile	55.2	58.1	58.1	53.8	60.0	60.0	59.1	60.9	60.9	58.4	62.7	62.7
China	3,500	3,349.3	3,349.3	2,780.2	2,966.4	2,966.4	6,000	5,771.2	5,771.2	4,578.9	4,671.9	4,671.9
Colombia	57.4	56.3	56.3	63.9	59.0	59.0	60.4	60.1	60.1	68.3	65.1	65.1
Congo	1.1	0.6	1.1	0.9		0.9	1.0	1.0	1.0	1.1		1.1
Costa Rica	5.2	5.4	5.4	7.6	9.7	9.7	6.1	6.7	6.7	8.7	13.2	13.2
Croatia	19.7	19.7	19.7	22.2	21.6	21.6	23.3	23.3	23.3	28.8	28.6	28.6
Cuba	26.9	25.9	26.9	30.2		30.2	25	25.8	25	29.9		29.9
Cyprus	7.2	7.1	7.1	10.2	9.9	9.9	8.0	8.0	8.0	12.0	9.7	9.7
Czech Republic	127	127.1	127	96.3		96.3	126	125.7	126	100.2		100.2
Cote d'Ivoire	7.2	6.5	6.5	6.8	5.6	5.6	8.3	7.5	7.5	7.7	8.3	8.3
North Korea	69.1	69.2	69.1	51.7		51.7	80.6	74.9	80.6	62.8		62.8
DR Congo	3.7	0.9	3.7	3.0		3.0	3.9	1.4	3.9	4.5		4.5
Denmark	55.6	54.3	54.3	62.6	65.2	65.2	52.9	51.5	51.5	71.0	66.9	66.9
Djibouti	0.3	0.4	0.3	0.5		0.5	0.4	0.4	0.4	0.6		0.6
Dominican Republic	0.1	19.6	19.6	18.1	23.6	23.6	0.1	17.9	17.9	14.9	20.6	20.6
Ecuador	20.8	20.6	20.6	17.8	20.9	20.9	30.2	30.0	30.0	28.8	33.1	33.1
Egypt	123	140.3	140.3	126.8	138.1	138.1	169	165.0	165.0	171.0	152.6	152.6
El Salvador	5.9	5.7	5.7	8.3	8.2	8.2	6.6	6.3	6.3	9.0	8.9	8.9
Eritrea	0.6	0.6	0.6	0.7		0.7	0.7	0.8	0.7	0.9		0.9
Estonia	16.8	15.2	15.2	12.2	18.4	18.4	18.8	16.9	16.9	15.6	18.8	18.8
Ethiopia	3.6	3.5	3.5	0.5	5.0	5.0	6.8	5.0	5.0	1.3	7.8	7.8
Fiji	0.8	0.8	0.8	1.0		1.0	1.1	1.1	1.1	1.5		1.5
Finland	57.3	57.0	57.0	63.7	74.5	74.5	57.3	57.0	57.0	65.5	81.4	81.4
France	420	415.8	415.8	550.7	528.1	528.1	433	426.4	426.4	596.6	549.6	549.6

Carbon emissions, 2000 and 2005 (in Mt CO₂) - 2/3

Country	2000						2005					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Gabon	4.7	4.7	4.7	3.6		3.6	4.9	4.9	4.9	3.9		3.9
Gambia	0.3	0.3	0.3	0.4		0.4	0.3	0.3	0.3	0.5		0.5
Georgia	4.5	4.5	4.5	5.6	5.6	5.6	5.8	5.0	5.0	7.5	7.7	7.7
Germany	900	899.8	899.8	966.4	1,092.7	1,092.7	866	866.4	866.4	930.4	1,048.3	1,048.3
Ghana	6.4	6.1	6.1	6.6	8.9	8.9	6.6	6.8	6.8	7.9	12.3	12.3
Greece	103	103.0	103.0	142.5	109.0	109.0	114	113.9	113.9	160.2	97.0	97.0
Guatemala	10.8	9.8	9.8	12.2	12.8	12.8	12.8	12.1	12.1	15.1	16.1	16.1
Guinea	1.7	1.5	1.5	1.8	1.5	1.5	1.9	1.8	1.8	2.0	1.8	1.8
Guyana	1.7	1.7	1.7	29.9		29.9	1.5	1.6	1.5	32.9		32.9
Haiti	1.6	1.3	1.6	1.6		1.6	2.2	2.0	2.2	2.2		2.2
Honduras	4.3	5.0	5.0	5.7	7.7	7.7	7.3	7.6	7.6	7.7	9.9	9.9
Hong Kong	40.6	40.3	40.3	212.3	110.2	110.2	44	43.7	43.7	302.0	96.2	96.2
Hungary	58.6	58.6	58.6	50.2	70.3	70.3	60.6	60.6	60.6	61.4	77.9	77.9
Iceland	3.0	2.9	3.0	4.1		4.1	3.0	3.0	3.0	5.1		5.1
India	1,060	978.4	978.4	973.8	947.9	947.9	1,200	1,185.8	1,185.8	1,106.0	1,157.1	1,157.1
Indonesia	338	265.8	265.8	264.9	231.2	231.2	399	343.3	343.3	336.7	316.2	316.2
Iran	376	369.3	369.3	310.3	319.1	319.1	474	463.5	463.5	409.1	433.7	433.7
Iraq	72.8	71.7	72.8	35.2		35.2	114	113.0	114	90.9		90.9
Ireland	45.3	45.2	45.2	44.3	55.9	55.9	48.9	48.2	48.2	56.8	70.7	70.7
Israel	61.9	59.5	59.5	70.2	66.1	66.1	63.7	56.5	56.5	67.4	72.3	72.3
Italy	468	468.4	468.4	552.9	583.9	583.9	500	500.0	500.0	602.9	610.1	610.1
Jamaica	10.1	10.3	10.3	11.2	7.5	7.5	10.2	10.4	10.4	11.8	12.5	12.5
Japan	1,260	1,264.8	1,264.8	1,610.6	1,529.8	1,529.8	1,290	1,290.1	1,290.1	1,640.2	1,520.3	1,520.3
Jordan	16.5	15.2	15.2	18.9	16.8	16.8	23	20.4	20.4	26.4	26.8	26.8
Kazakhstan	149	148.8	148.8	116.0	110.9	110.9	202	202.3	202.3	153.7	155.1	155.1
Kenya	8.1	10.3	10.3	10.8	10.1	10.1	9.5	8.3	8.3	13.1	12.3	12.3
Kuwait	55.7	53.4	53.4	40.1	30.6	30.6	74.5	71.2	71.2	61.8	58.0	58.0
Kyrgyzstan	5.2	4.6	4.6	4.8	4.8	4.8	5.6	5.5	5.5	6.0	7.9	7.9
Laos	1.0	1.0	1.0	1.1	1.9	1.9	1.4	1.3	1.3	1.7	2.0	2.0
Latvia	7.1	7.1	7.1	9.2	12.5	12.5	7.8	7.8	7.8	11.3	13.1	13.1
Lebanon	15.5	15.5	15.5	19.4		19.4	16.9	16.7	16.9	22.2		22.2
Lesotho	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.3		2.3
Liberia	0.4	0.4	0.4	0.3		0.3	0.7	0.7	0.7	0.4		0.4
Libya	49.6	46.8	49.6	32.7		32.7	54.7	51.7	54.7	20.6		20.6
Liechtenstein	0.2	0.2	0.2	0.3		0.3	0.2	0.2	0.2	0.4		0.4
Lithuania	11.9	11.9	11.9	15.7	18.1	18.1	14.1	14.1	14.1	20.2	20.1	20.1
Luxembourg	8.7	8.7	8.7	14.1	7.7	7.7	12.1	12.1	12.1	17.8	14.5	14.5
Macao SAR	1.6		1.6	3.4		3.4	1.8		1.8	5.1		5.1
Madagascar	1.8	1.9	1.9	2.2	2.3	2.3	2.0	1.7	1.7	2.9	3.3	3.3
Malawi	0.9	0.9	0.9	1.6	1.8	1.8	1.0	0.9	0.9	2.1	1.9	1.9
Malaysia	147	126.5	126.5	102.8	111.5	111.5	214	181.8	181.8	126.1	150.5	150.5
Maldives	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.6	0.7	0.8		0.8
Mali	1.6	0.8	1.6	2.0		2.0	2.2	0.9	2.2	2.9		2.9
Malta	2.5	2.5	2.5	3.5	4.7	4.7	2.6	2.7	2.7	3.5	4.3	4.3
Mauritania	1.2	1.1	1.2	1.2		1.2	1.6	1.4	1.6	1.8		1.8
Mauritius	2.3	2.7	2.7	4.0	4.4	4.4	2.8	3.3	3.3	4.2	4.6	4.6
Mexico	415	396.1	396.1	417.8	435.5	435.5	435	464.0	464.0	427.3	505.6	505.6
Monaco	0.1		0.1	0.2		0.2	0.1		0.1	0.2		0.2
Mongolia	7.4	7.5	7.5	2.5	6.6	6.6	9.6	8.6	8.6	6.0	8.7	8.7
Montenegro	2.7	1.5	2.7	2.6		2.6	2.5	1.8	2.5	2.6		2.6
Morocco	33	33.6	33.6	31.0	41.1	41.1	42.8	45.6	45.6	39.9	51.1	51.1
Mozambique	1.5	1.3	1.3	2.7	4.2	4.2	2.8	1.8	1.8	4.3	4.7	4.7
Myanmar	8.2	10.0	8.2	8.0		8.0	8.5	11.5	8.5	10.9		10.9
Namibia	1.9	1.6		4.5	4.9		2.9	2.3		6.2	5.2	
Nepal	3.1	3.0	3.0	3.4	3.8	3.8	3.1	3.0	3.0	4.2	4.6	4.6
Netherlands	172	171.9	171.9	177.9	143.4	143.4	177	177.5	177.5	206.1	191.5	191.5
Netherlands Antilles	5.6		5.6	4.7		4.7	5.8		5.8	4.7		4.7
New Zealand	32.4	32.3	32.3	34.0	33.0	33.0	37.6	37.6	37.6	44.9	41.9	41.9
Nicaragua	3.8	3.7	3.7	4.3	4.6	4.6	4.3	4.3	4.3	4.8	5.7	5.7
Niger	1.9	0.7	1.9	1.8		1.8	1.8	0.7	1.8	2.0		2.0
Nigeria	77.1	78.8	78.8	57.0	46.8	46.8	107	105.8	105.8	94.3	92.2	92.2

Carbon emissions, 2000 and 2005 (in Mt CO2) - 3/3

Country	2000						2005					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Norway	42.5	42.5	42.5	53.6		53.6	43.9	43.9	43.9	66.2	45.4	45.4
Oman	22.8	21.5	21.5	13.5	19.0	19.0	31.5	29.5	29.5	18.1	25.5	25.5
Pakistan	112	105.4	105.4	99.6	113.3	113.3	142	134.8	134.8	130.7	147.1	147.1
Panama	5.8	5.7	5.7	8.2	5.6	5.6	6.8	6.7	6.7	9.3	-1.1	-1.1
Papua New Guinea	3	2.7	3	2.5		2.5	5.1	4.4	5.1	4.1		4.1
Paraguay	3.8	3.6	3.6	5.1	5.3	5.3	4.3	3.8	3.8	5.9	5.5	5.5
Peru	34.4	30.1	30.1	36.3	34.5	34.5	41	36.7	36.7	46.9	37.1	37.1
Philippines	74.2	72.3	72.3	75.5	91.2	91.2	75.6	73.3	73.3	78.1	93.1	93.1
Poland	317	317.3	317.3	296.2	294.9	294.9	322	323.2	323.2	304.3	287.8	287.8
Portugal	65.5	65.5	65.5	84.5	78.0	78.0	69.5	69.5	69.5	88.9	85.5	85.5
Qatar	38.1	34.6	34.6	19.1	16.3	16.3	55.5	50.7	50.7	38.1	28.5	28.5
South Korea	448	445.4	445.4	473.8	487.0	487.0	508	459.3	459.3	499.6	544.1	544.1
Moldova	6.9	3.6	6.9	0.1		0.1	8.9	4.9	8.9	0.4		0.4
Romania	96.5	95.5	95.5	86.7	83.6	83.6	103	102.7	102.7	105.7	106.2	106.2
Russia	1,490	1,471.1	1,471.1	1,228.7	1,000.2	1,000.2	1,570	1,547.4	1,547.4	1,379.9	1,234.8	1,234.8
Rwanda	0.5	0.5	0.5	0.7	0.5	0.5	0.5	0.5	0.5	0.9	0.5	0.5
Samoa	0.1	0.1	0.1	0.2		0.2	0.2	0.2	0.2	0.3		0.3
San Marino	0.2		0.2	0.3		0.3	0.2		0.2	0.4		0.4
Sao Tome and Principe	0.05	0.05	0.05	0.1		0.1	0.1	0.1	0.1	0.1		0.1
Saudi Arabia	255	296.4	296.4	194.4	207.1	207.1	351	395.9	395.9	315.9	358.4	358.4
Senegal	3.9	3.9	3.9	4.4	4.8	4.8	5.6	5.5	5.5	6.6	7.1	7.1
Serbia	41.1	45.0	41.1	41.0		41.0	51.6	51.6	51.6	52.0		52.0
Seychelles	0.6	0.6	0.6	0.8		0.8	0.7	0.7	0.7	1.0		1.0
Sierra Leone	0.4	0.4	0.4	0.5		0.5	0.6	0.5	0.6	0.7		0.7
Singapore	40.7	48.9	48.9	82.6	119.6	119.6	29.2	36.5	36.5	97.7	136.4	136.4
Slovakia	41.3	41.3	41.3	44.8	44.4	44.4	42.9	42.9	42.9	51.4	44.5	44.5
Slovenia	15.4	15.4	15.4	15.5	19.2	19.2	16.9	16.9	16.9	18.0	19.2	19.2
Somalia	0.5	0.5	0.5	0.6		0.6	0.6	0.6	0.6	0.7		0.7
South Africa	367	378.3	378.3	299.7	278.1	278.1	414	415.9	415.9	345.7	301.6	301.6
South Sudan	0.6	0.5	0.6	0.02		0.02	1.2	0.9	1.2	0.03		0.03
Spain	311	311.3	311.3	391.5	330.2	330.2	369	369.5	369.5	477.5	416.0	416.0
Sri Lanka	10.4	10.1	10.1	11.2	15.1	15.1	12.2	11.9	11.9	13.4	19.3	19.3
Sudan	5.4	5.1	5.4	0.02		0.02	10.5	10.0	10.5	0.02		0.02
Suriname	2.2	2.2	2.2	1.8		1.8	1.6	1.6	1.6	1.7		1.7
Swaziland	1.2	1.2	1.2	3.2		3.2	1.0	1.0	1.0	3.8		3.8
Sweden	54.7	54.7	54.7	87.2	82.4	82.4	53.9	53.9	53.9	88.4	86.3	86.3
Switzerland	43.6	43.6	43.6	83.9	114.2	114.2	45.8	45.8	45.8	97.2	111.8	111.8
Syria	51.1	50.5	51.1	40.6		40.6	50.6	49.9	50.6	41.5		41.5
Taiwan	225	221.9	221.9	154.0	243.6	243.6	265	255.8	255.8	173.2	269.3	269.3
Tajikistan	2.7	2.2	2.7	2.3		2.3	2.8	2.4	2.8	2.9		2.9
Thailand	184	170.7	170.7	142.5	155.5	155.5	251	224.3	224.3	188.0	218.7	218.7
TFYR Macedonia	9.6	12.0	9.6	9.0		9.0	9.9	11.2	9.9	9.3		9.3
Togo	1.9	1.3	1.3	1.6	1.6	1.6	2.4	1.7	1.7	2.3	3.2	3.2
Trinidad and Tobago	31.7	24.2	24.2	13.2	12.7	12.7	51	37.9	37.9	24.6	18.5	18.5
Tunisia	20	19.7	19.7	21.0	22.7	22.7	22.5	22.3	22.3	23.7	21.0	21.0
Turkey	232	229.8	229.8	263.0	267.4	267.4	266	264.2	264.2	305.1	303.2	303.2
Turkmenistan	27	37.5	27	27.4		27.4	31.8	48.2	31.8	34.8		34.8
Uganda	1.5	1.4	1.4	2.6	2.2	2.2	2.2	2.0	2.0	4.0	3.5	3.5
Ukraine	285	285.3	285.3	220.7	211.6	211.6	313	313.1	313.1	252.2	244.5	244.5
UAE	105	111.8	111.8	108.1	103.4	103.4	140	114.5	114.5	143.4	164.7	164.7
UK	568	567.5	567.5	748.4	696.1	696.1	571	569.9	569.9	815.1	726.6	726.6
Tanzania	2.7	2.6	2.6	4.3	4.9	4.9	5.6	5.4	5.4	8.1	8.3	8.3
USA	6,120	5,998.1	5,998.1	6,891.2	6,243.5	6,243.5	6,240	6,131.9	6,131.9	7,341.5	6,585.9	6,585.9
Uruguay	5.5	5.3	5.3	7.8	8.5	8.5	5.7	5.7	5.7	8.4	8.3	8.3
Uzbekistan	112	121.0	112	99.8		99.8	106	116.6	106	88.8		88.8
Vanuatu	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.2		0.2
Venezuela	157	151.9	151.9	134.6	87.8	87.8	172	163.8	163.8	137.8	117.5	117.5
Viet Nam	57.4	52.3	52.3	51.3	48.3	48.3	104	94.9	94.9	94.4	101.2	101.2
Yemen	17.6	14.5	17.6	15.4		15.4	20.6	19.8	20.6	17.9		17.9
Zambia	1.8	1.8	1.8	3.0	3.9	3.9	2.3	2.2	2.2	4.3	3.9	3.9
Zimbabwe	25.3	13.8	13.8	19.2	11.6	11.6	13.6	10.7	10.7	10.8	10.1	10.1

B.3: Carbon emissions, 2010 and 2015 (in Mt CO₂) - 1/3

Country	2010						2015					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Afghanistan	8.7	8.4	8.7	10.4		10.4	12	7.9	12	14.5		14.5
Albania	6.2	4.4	4.4	7.1	6.1	6.1	7.1	4.5	4.5	7.8	5.6	5.6
Algeria	120	117.8	120	68.1		68.1	155	150.8	155	75.9		75.9
Andorra	0.6	0.5	0.6	0.9		0.9	0.5	0.5	0.5	0.9		0.9
Angola	28.9	28.9	28.9	23.9		23.9	36.3	34.0	36.3	25.1		25.1
Antigua	0.5	0.5	0.5	0.9		0.9	0.5	0.5	0.5	0.8		0.8
Argentina	187	186.7	186.7	186.9	174.5	174.5	206	192.4	192.4	204.1	201.6	201.6
Armenia	4.7	4.3	4.3	5.7	5.5	5.5	6.6	5.1	5.1	6.4	5.7	5.7
Aruba	2.5	2.5	2.5	2.4		2.4	0.9	0.9	0.9	2.3		2.3
Australia	406	405.5	405.5	423.8	383.2	383.2	402	401.6	401.6	428.5	395.9	395.9
Austria	72.3	72.0	72.0	101.5	98.5	98.5	66.5	66.3	66.3	97.8	91.8	91.8
Azerbaijan	31	30.6	30.6	27.9	30.1	30.1	39.9	37.2	37.2	30.5	40.7	40.7
Bahamas	1.7	2.4	1.7	3.3		3.3	2.5	2.0	2.5	3.4		3.4
Bahrain	31.9	29.1	29.1	23.5	19.4	19.4	26.5	32.7	32.7	23.2	17.3	17.3
Bangladesh	57.2	54.0	54.0	62.2	70.3	70.3	82.5	72.8	72.8	70.0	93.9	93.9
Barbados	3.6	1.5	3.6	2.2		2.2	3.2	1.3	3.2	2.2		2.2
Belarus	64.1	63.2	63.2	0.1	60.7	60.7	59.6	58.6	58.6	0.2	63.5	63.5
Belgium	115	114.6	114.6	106.7	192.4	192.4	101	101.0	101.0	99.0	176.0	176.0
Belize	0.5	0.5	0.5	0.8		0.8	0.6	0.6	0.6	0.8		0.8
Benin	5	4.9	4.9	5.5	7.3	7.3	6.5	6.1	6.1	5.8	8.2	8.2
Bhutan	0.8	0.5	0.8	1.0		1.0	1.3	1.0	1.3	1.2		1.2
Bolivia	13.7	14.6	14.6	11.2	13.5	13.5	17.6	19.4	19.4	12.4	18.8	18.8
Bosnia and Herzegovina	20.4	21.1	20.4	19.2		19.2	21	18.5	21	20.7		20.7
Botswana	6.0	4.5	4.5	11.4	6.8	6.8	7.0	5.4	5.4	11.7	16.0	16.0
Brazil	452	411.2	411.2	520.3	459.5	459.5	532	495.2	495.2	530.5	520.5	520.5
British Virgin Islands	0.2	0.2	0.2	0.4		0.4	0.2	0.2	0.2	0.4		0.4
Brunei	8.2	8.1	8.1	4.0	6.5	6.5	9.7	7.0	7.0	4.5	8.2	8.2
Bulgaria	47.9	47.9	47.9	37.3	42.8	42.8	48.2	48.2	48.2	37.8	41.0	41.0
Burkina Faso	2.0	2.0	2.0	3.0	2.8	2.8	2.8	3.3	3.3	3.5	4.5	4.5
Burundi	0.2	0.3	0.2	0.6		0.6	0.2	0.4	0.2	0.6		0.6
Cambodia	5.0	5.0	5.0	7.5	9.9	9.9	7.0	8.4	8.4	7.8	14.7	14.7
Cameroon	12.1	6.7	6.7	13.3	8.0	8.0	14.8	7.7	7.7	12.4	10.3	10.3
Canada	557	555.5	555.5	595.9	595.1	595.1	577	575.9	575.9	608.5	581.2	581.2
Cape Verde	0.6	0.6	0.6	0.9		0.9	0.7	0.5	0.7	0.9		0.9
Central African Republic	0.3	0.3	0.3	0.6		0.6	0.4	0.3	0.4	0.6		0.6
Chad	0.7	1.0	0.7	0.9		0.9	1.1	0.7	1.1	1.0		1.0
Chile	69.8	71.3	71.3	72.2	74.0	74.0	85.1	81.6	81.6	83.6	90.0	90.0
China	8,870	8,500.5	8,500.5	7,330.2	7,202.2	7,202.2	10,400	9,683.2	9,683.2	8,264.1	8,507.3	8,507.3
Colombia	69.6	76.3	76.3	87.6	84.1	84.1	81.5	86.1	86.1	89.2	98.3	98.3
Congo	2.0	2.0	2.0	2.2		2.2	2.9	3.5	2.9	2.5		2.5
Costa Rica	6.9	7.5	7.5	10.4	12.4	12.4	8.5	7.4	7.4	11.0	12.5	12.5
Croatia	21.1	21.1	21.1	26.8	25.2	25.2	17.8	17.8	17.8	25.7	20.8	20.8
Cuba	36.3	33.9	36.3	42.1		42.1	33.8	29.1	33.8	40.2		40.2
Cyprus	8.1	8.1	8.1	12.5	13.3	13.3	7.0	7.0	7.0	11.8	7.5	7.5
Czech Republic	118	117.5	118	98.2		98.2	105	104.8	105	93.9		93.9
Cote d'Ivoire	7.6	6.1	6.1	7.1	8.0	8.0	12.6	9.4	9.4	7.4	13.8	13.8
North Korea	69.7	50.0	69.7	48.3		48.3	44.7	24.6	44.7	30.5		30.5
DR Congo	4.6	2.0	4.6	6.7		6.7	6.8	2.8	6.8	7.9		7.9
Denmark	50.7	49.2	49.2	67.8	62.4	62.4	36.5	35.2	35.2	62.2	50.6	50.6
Djibouti	0.5	0.5	0.5	0.7		0.7	0.7	0.4	0.7	0.7		0.7
Dominican Republic	0.2	20.6	20.6	16.3	24.6	24.6	0.2	23.5	23.5	17.3	25.7	25.7
Ecuador	36.2	34.8	34.8	34.9	42.2	42.2	42.5	40.6	40.6	38.3	48.5	48.5
Egypt	206	198.8	198.8	212.1	200.5	200.5	207	219.3	219.3	222.8	229.1	229.1
El Salvador	6.7	6.3	6.3	9.7	8.4	8.4	8.4	6.7	6.7	10.2	8.6	8.6
Eritrea	0.5	0.5	0.5	0.7		0.7	0.6	0.7	0.6	0.7		0.7
Estonia	21.8	18.8	18.8	15.5	17.5	17.5	19.7	15.8	15.8	16.6	16.5	16.5
Ethiopia	11.4	6.3	6.3	2.1	9.9	9.9	13.4	12.7	12.7	2.2	18.0	18.0
Fiji	1.2	1.2	1.2	1.7		1.7	1.4	2.1	1.4	1.8		1.8
Finland	64.4	64.1	64.1	68.4	83.1	83.1	44.3	44.1	44.1	62.5	65.1	65.1
France	396	389.1	389.1	546.1	515.7	515.7	347	338.2	338.2	505.0	440.0	440.0

Carbon emissions, 2010 and 2015 (in Mt CO₂) - 2/3

Country	2010						2015					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Gabon	4.8	4.8	4.8	3.9		3.9	5.2	5.2	5.2	5.4		5.4
Gambia	0.4	0.4	0.4	0.6		0.6	0.6	0.5	0.6	0.6		0.6
Georgia	7.3	6.2	6.2	9.6	8.2	8.2	9.4	9.6	9.6	12.1	11.3	11.3
Germany	833	832.7	832.7	835.0	976.4	976.4	796	795.8	795.8	820.8	875.8	875.8
Ghana	8	9.7	9.7	10.4	14.7	14.7	13.1	16.1	16.1	11.8	20.6	20.6
Greece	97.4	97.4	97.4	141.1	97.4	97.4	75	75.0	75.0	125.2	63.6	63.6
Guatemala	12	11.1	11.1	15.2	15.8	15.8	16.6	15.4	15.4	15.6	20.4	20.4
Guinea	2.7	2.5	2.5	2.7	2.5	2.5	3.4	2.5	2.5	2.9	2.5	2.5
Guyana	1.8	1.9	1.8	59.7		59.7	2.1	2.0	2.1	51.8		51.8
Haiti	2.2	2.1	2.2	2.7		2.7	3.1	3.2	3.1	2.7		2.7
Honduras	8.6	8.0	8.0	8.9	10.3	10.3	10.6	10.1	10.1	10.0	12.2	12.2
Hong Kong	40.7	40.1	40.1	369.7	90.1	90.1	44.6	42.4	42.4	373.4	109.7	109.7
Hungary	52.1	52.1	52.1	51.8	69.4	69.4	46.6	46.6	46.6	48.1	63.4	63.4
Iceland	3.7	3.7	3.7	4.6		4.6	3.5	3.5	3.5	4.4		4.4
India	1,610	1,678.5	1,678.5	1,494.4	1,584.6	1,584.6	2,140	2,253.4	2,253.4	1,571.5	2,067.3	2,067.3
Indonesia	468	428.2	428.2	438.1	433.4	433.4	562	507.0	507.0	478.2	531.7	531.7
Iran	584	564.0	564.0	534.5	543.3	543.3	648	640.8	640.8	543.2	601.1	601.1
Iraq	112	111.0	112	113.7		113.7	172	165.6	172	137.5		137.5
Ireland	42.3	41.7	41.7	52.1	48.6	48.6	39	38.5	38.5	46.2	41.5	41.5
Israel	66.1	68.3	68.3	73.9	82.6	82.6	67.3	64.9	64.9	76.8	80.5	80.5
Italy	434	433.7	433.7	527.7	576.7	576.7	360	360.1	360.1	476.5	461.1	461.1
Jamaica	7.3	7.7	7.7	9.1	9.6	9.6	7.6	7.9	7.9	9.6	9.5	9.5
Japan	1,210	1,214.1	1,214.1	1,486.1	1,426.2	1,426.2	1,220	1,222.8	1,222.8	1,500.8	1,382.7	1,382.7
Jordan	23.3	20.6	20.6	28.2	27.2	27.2	22	25.3	25.3	28.5	33.4	33.4
Kazakhstan	251	250.9	250.9	201.3	158.3	158.3	289	288.6	288.6	194.1	245.6	245.6
Kenya	14.3	11.7	11.7	19.1	17.8	17.8	17.4	16.3	16.3	23.1	25.5	25.5
Kuwait	93.3	89.3	89.3	79.8	74.8	74.8	101	96.3	96.3	83.6	90.2	90.2
Kyrgyzstan	6.6	6.3	6.3	7.7	11.8	11.8	9.6	10.3	10.3	9.3	16.2	16.2
Laos	1.6	3.0	3.0	2.0	4.4	4.4	1.8	8.8	8.8	2.1	11.2	11.2
Latvia	8.6	8.5	8.5	12.9	13.2	13.2	7.3	7.3	7.3	12.6	12.2	12.2
Lebanon	20.4	20.0	20.4	27.1		27.1	17.6	25.8	17.6	27.7		27.7
Lesotho	2.3	2.3	2.3	3.4		3.4	2.5	2.3	2.5	3.5		3.5
Liberia	0.8	0.8	0.8	0.7		0.7	1.1	1.2	1.1	0.9		0.9
Libya	64.1	61.1	64.1	26.7		26.7	52.2	50.8	52.2	18.9		18.9
Liechtenstein	0.2	0.2	0.2	0.3		0.3	0.2	0.2	0.2	0.3		0.3
Lithuania	13.9	13.9	13.9	21.6	19.9	19.9	13.3	13.3	13.3	22.7	21.7	21.7
Luxembourg	11.2	11.2	11.2	18.5	25.2	25.2	9.3	9.3	9.3	18.1	23.8	23.8
Macao SAR	1.4		1.4	6.6		6.6	1.6		1.6	6.4		6.4
Madagascar	2.1	1.9	1.9	3.8	3.4	3.4	3.4	3.5	3.5	4.2	4.9	4.9
Malawi	1.2	1.0	1.0	2.7	2.7	2.7	1.3	1.1	1.1	2.6	2.8	2.8
Malaysia	243	216.5	216.5	160.9	191.5	191.5	255	233.3	233.3	168.5	236.2	236.2
Maldives	1.2	0.9	1.2	1.5		1.5	1.5	1.3	1.5	1.6		1.6
Mali	2.8	2.0	2.8	3.6		3.6	4.0	3.1	4.0	4.0		4.0
Malta	2.6	2.6	2.6	3.6	5.4	5.4	1.7	1.7	1.7	3.6	5.1	5.1
Mauritania	2.5	2.0	2.5	2.4		2.4	3.2	2.9	3.2	2.9		2.9
Mauritius	3.9	3.9	3.9	6.3	5.1	5.1	4.4	4.2	4.2	6.9	5.2	5.2
Mexico	508	463.8	463.8	485.9	498.8	498.8	496	482.0	482.0	483.1	512.8	512.8
Monaco	0.1		0.1	0.2		0.2	0.1		0.1	0.3		0.3
Mongolia	12.6	13.8	13.8	9.1	14.6	14.6	17.1	23.2	23.2	10.4	23.7	23.7
Montenegro	2.8	2.4	2.8	3.7		3.7	2.6	2.2	2.6	3.9		3.9
Morocco	52.5	56.3	56.3	49.6	61.4	61.4	60.3	61.0	61.0	55.0	64.2	64.2
Mozambique	3.6	2.6	2.6	5.2	9.1	9.1	9.6	6.3	6.3	6.0	16.1	16.1
Myanmar	9.2	13.1	9.2	12.2		12.2	16.5	22.1	16.5	13.8		13.8
Namibia	3.1	3.1		8.1	4.0		3.7	3.9		8.5	8.7	
Nepal	5.0	4.8	4.8	7.6	9.6	9.6	7.8	6.0	6.0	8.0	11.8	11.8
Netherlands	182	182.1	182.1	211.0	184.2	184.2	166	166.4	166.4	192.9	155.2	155.2
Netherlands Antilles	4.6		4.6	3.7		3.7	7.1		7.1	4.4		4.4
New Zealand	35	35.0	35.0	41.1	36.8	36.8	35.9	35.8	35.8	41.1	38.6	38.6
Nicaragua	4.5	4.5	4.5	5.3	5.9	5.9	5.7	5.3	5.3	5.7	6.4	6.4
Niger	2.7	1.2	2.7	3.1		3.1	3.9	2.0	3.9	3.6		3.6
Nigeria	92.2	112.3	112.3	101.0	94.2	94.2	110	113.5	113.5	114.1	124.3	124.3

Carbon emissions, 2010 and 2015 (in Mt CO2) - 3/3

Country	2010						2015					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Norway	46.1	46.2	46.2	71.9	51.1	51.1	45.3	45.4	45.4	72.9	48.8	48.8
Oman	51.7	46.8	46.8	33.8	39.7	39.7	71.7	61.6	61.6	36.5	67.4	67.4
Pakistan	166	154.1	154.1	152.3	161.8	161.8	179	170.2	170.2	155.6	180.6	180.6
Panama	9.0	9.1	9.1	12.1	25.0	25.0	10.6	10.9	10.9	13.1	24.1	24.1
Papua New Guinea	4.9	4.7	4.9	5.1		5.1	6.8	6.4	6.8	5.7		5.7
Paraguay	5.5	5.0	5.0	8.4	8.8	8.8	6.4	6.1	6.1	9.1	9.7	9.7
Peru	60.4	57.2	57.2	65.5	60.7	60.7	67.8	48.7	48.7	62.1	59.6	59.6
Philippines	85.7	83.0	83.0	89.8	104.5	104.5	114	112.1	112.1	90.9	136.5	136.5
Poland	334	334.6	334.6	331.7	320.2	320.2	311	313.1	313.1	329.5	289.4	289.4
Portugal	53	53.0	53.0	74.4	64.7	64.7	52.3	52.3	52.3	66.9	56.6	56.6
Qatar	79	71.9	71.9	68.1	42.2	42.2	132	105.8	105.8	74.4	65.6	65.6
South Korea	602	566.0	566.0	543.8	628.6	628.6	643	595.4	595.4	563.1	648.8	648.8
Moldova	10.0	4.8	10.0	2.0		2.0	9.9	4.8	9.9	2.9		2.9
Romania	84.4	84.3	84.3	96.1	90.3	90.3	77.7	77.7	77.7	100.2	77.1	77.1
Russia	1,630	1,612.9	1,612.9	1,461.0	1,347.8	1,347.8	1,730	1,622.9	1,622.9	1,546.7	1,387.9	1,387.9
Rwanda	0.6	0.6	0.6	1.3	0.6	0.6	0.9	0.9	0.9	1.6	0.9	0.9
Samoa	0.2	0.2	0.2	0.3		0.3	0.2	0.2	0.2	0.3		0.3
San Marino	0.2		0.2	0.7		0.7	0.2		0.2	0.9		0.9
Sao Tome and Principe	0.1	0.1	0.1	0.2		0.2	0.1	0.1	0.1	0.2		0.2
Saudi Arabia	468	517.7	517.7	450.3	508.2	508.2	545	645.4	645.4	463.7	676.2	676.2
Senegal	7.4	7.3	7.3	8.5	8.4	8.4	8.4	9.8	9.8	9.4	10.5	10.5
Serbia	47.1	45.7	47.1	51.4		51.4	48.8	43.7	48.8	56.9		56.9
Seychelles	0.4	0.4	0.4	0.8		0.8	0.5	0.5	0.5	0.7		0.7
Sierra Leone	0.8	0.6	0.8	1.0		1.0	1.2	0.9	1.2	1.4		1.4
Singapore	51.7	56.6	56.6	134.6	114.7	114.7	83.5	62.1	62.1	139.4	114.1	114.1
Slovakia	38.5	38.5	38.5	52.0	48.7	48.7	34.5	34.5	34.5	51.9	46.4	46.4
Slovenia	16.4	16.4	16.4	17.9	20.9	20.9	13.6	13.6	13.6	17.2	18.0	18.0
Somalia	0.6	0.6	0.6	0.7		0.7	0.7	0.6	0.7	0.7		0.7
South Africa	447	466.9	466.9	369.1	329.6	329.6	443	451.6	451.6	377.8	322.0	322.0
South Sudan	1.8	1.3	1.8	0.1		0.1	2.1	1.9	2.1	0.1		0.1
Spain	284	283.7	283.7	399.2	343.1	343.1	272	271.7	271.7	362.6	285.9	285.9
Sri Lanka	13.6	13.1	13.1	17.8	21.1	21.1	23.8	19.8	19.8	20.6	29.8	29.8
Sudan	15.1	14.4	15.1	0.1		0.1	16.5	20.2	16.5	0.1		0.1
Suriname	2.5	2.4	2.5	2.5		2.5	2.5	2.7	2.5	2.3		2.3
Swaziland	1.0	1.0	1.0	4.1		4.1	1.2	1.0	1.2	3.8		3.8
Sweden	53	53.0	53.0	90.4	86.2	86.2	43.3	43.3	43.3	87.6	70.4	70.4
Switzerland	45.1	45.0	45.0	103.3	109.4	109.4	38.7	38.7	38.7	101.4	119.6	119.6
Syria	62.4	60.7	62.4	54.7		54.7	45.3	28.7	45.3	49.8		49.8
Taiwan	278	264.8	264.8	161.7	272.8	272.8	270	257.2	257.2	155.1	255.8	255.8
Tajikistan	2.0	2.5	2.0	3.5		3.5	2.9	5.2	2.9	4.2		4.2
Thailand	289	256.4	256.4	246.8	249.6	249.6	335	283.3	283.3	283.0	276.7	276.7
TFYR Macedonia	9.7	8.5	9.7	9.6		9.6	8.1	7.0	8.1	10.1		10.1
Togo	3.4	2.6	2.6	3.2	4.7	4.7	4.1	2.7	2.7	3.1	7.4	7.4
Trinidad and Tobago	63.7	47.0	47.0	24.6	28.4	28.4	56.7	45.1	45.1	28.8	30.0	30.0
Tunisia	27.7	27.1	27.1	28.6	25.5	25.5	24.5	29.3	29.3	27.5	28.1	28.1
Turkey	315	314.4	314.4	370.9	365.6	365.6	384	381.3	381.3	406.2	416.0	416.0
Turkmenistan	40.9	57.1	40.9	40.4		40.4	56.3	70.2	56.3	42.2		42.2
Uganda	3.9	3.6	3.6	7.0	6.0	6.0	5.3	4.5	4.5	7.4	7.1	7.1
Ukraine	294	294.1	294.1	250.9	244.8	244.8	224	223.9	223.9	272.6	195.6	195.6
UAE	160	156.0	156.0	186.6	194.2	194.2	206	239.7	239.7	189.5	241.3	241.3
UK	513	512.0	512.0	746.1	681.9	681.9	423	422.5	422.5	682.8	569.8	569.8
Tanzania	7.0	6.9	6.9	11.4	11.7	11.7	12.8	10.6	10.6	11.4	19.5	19.5
USA	5,780	5,698.1	5,698.1	6,666.8	6,009.0	6,009.0	5,500	5,412.4	5,412.4	6,499.7	5,728.9	5,728.9
Uruguay	6.3	6.3	6.3	10.4	10.3	10.3	6.8	6.7	6.7	12.2	11.4	11.4
Uzbekistan	106	103.3	106	95.8		95.8	94.1	101.8	94.1	100.2		100.2
Vanuatu	0.1	0.1	0.1	0.3		0.3	0.2	0.1	0.2	0.3		0.3
Venezuela	196	184.1	184.1	171.3	159.9	159.9	184	170.9	170.9	159.9	184.9	184.9
Viet Nam	148	136.1	136.1	151.6	154.7	154.7	210	184.4	184.4	169.0	199.5	199.5
Yemen	22.4	23.2	22.4	21.3		21.3	23.9	13.0	23.9	21.4		21.4
Zambia	2.6	2.6	2.6	5.4	5.4	5.4	4.5	4.3	4.3	6.0	8.3	8.3
Zimbabwe	8.4	7.9	7.9	7.2	9.3	9.3	13.2	12.2	12.2	2.2	13.3	13.3

B.4: Carbon emissions, 2017 and 2019 (in Mt CO₂) - 1/3

Country	2017						2019					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Afghanistan	13.5	6.9	13.5			16.3		10.7	22.4			27.0
Albania	7.5	5.4	5.4		6.2	6.2		5.6	5.6			6.4
Algeria	157	153.4	157			76.8		171.7	171.3			83.8
Andorra	0.5	0.5	0.5			0.9		0.5	0.5			0.9
Angola	33.6	37.5	33.6			23.2		38.0	28.0			19.3
Antigua	0.5	0.5	0.5			0.8		0.5	0.6			0.9
Argentina	201	187.4	187.4		194.8	194.8		178.9	178.9			181.4
Armenia	6.7	5.5	5.5		5.7	5.7		6.0	6.0			6.1
Aruba	0.9	0.9	0.9			2.3		0.9	0.9			2.4
Australia	415	415.1	415.1		388.6	388.6		411.0	411.0			374.4
Austria	69.8	69.6	69.6		95.0	95.0		68.5	68.5			95.6
Azerbaijan	37.7	36.5	36.5		39.0	39.0		39.8	39.8			41.9
Bahamas	2.5	2.0	2.5			3.4		2.0	2.6			3.6
Bahrain	27.6	32.8	32.8		18.7	18.7		34.4	34.4			19.2
Bangladesh	86.1	80.3	80.3		101.3	101.3		102.2	102.2			128.8
Barbados	3.2	1.2	3.2			2.2		1.2	3.4			2.3
Belarus	61.7	60.7	60.7		61.4	61.4		62.5	62.5			65.4
Belgium	99.5	99.5	99.5		172.1	172.1		99.7	99.7			176.4
Belize	0.7	0.6	0.7			0.9		0.6	0.7			0.9
Benin	7.3	7.4	7.4		9.0	9.0		8.0	8.0			9.5
Bhutan	1.5	1.3	1.5			1.4		1.7	1.6			1.5
Bolivia	19	21.8	21.8		21.5	21.5		22.6	22.6			22.2
Bosnia and Herzegovina	22.5	21.8	22.5			22.2		26.6	23.2			22.9
Botswana	7.6	7.1	7.1		17.8	17.8		6.3	6.3			16.7
Brazil	501	484.6	484.6		511.0	511.0		465.7	465.7			487.9
British Virgin Islands	0.2	0.2	0.2			0.4		0.2	0.2			0.5
Brunei	11	9.6	9.6		10.0	10.0		9.1	9.1			9.4
Bulgaria	47.5	47.5	47.5		39.8	39.8		42.0	42.0			37.8
Burkina Faso	3.1	3.9	3.9		5.1	5.1		4.3	4.3			5.6
Burundi	0.2	0.5	0.2			0.7		0.6	0.2			0.8
Cambodia	7.8	11.2	11.2		16.5	16.5		16.0	16.0			20.4
Cameroon	14.6	7.5	7.5		10.5	10.5		7.6	7.6			10.9
Canada	574	572.8	572.8		575.4	575.4		576.7	576.7			578.5
Cape Verde	0.8	0.6	0.8			0.8		0.6	0.9			1.2
Central African Republic	0.3	0.3	0.3			0.6		0.3	0.3			0.6
Chad	1.0	1.0	1.0			0.9		1.0	1.0			0.9
Chile	86.1	84.1	84.1		91.1	91.1		84.3	84.3			91.7
China	10,600	9,750.7	9,750.7		8,724.6	8,724.6		10,174.7	10,174.7			9,156.2
Colombia	80.8	91.7	91.7		102.3	102.3		102.2	102.2			114.0
Congo	2.8	3.5	2.8			2.4		3.5	3.9			3.4
Costa Rica	8.8	8.2	8.2		12.9	12.9		8.5	8.5			13.4
Croatia	18.7	18.7	18.7		21.5	21.5		17.9	17.9			21.4
Cuba	33.6	25.1	33.6			40.0		26.0	35.3			42.0
Cyprus	7.5	7.5	7.5		7.7	7.7		7.3	7.3			7.8
Czech Republic	106	105.6	106			94.8		101.0	103.7			92.7
Cote d'Ivoire	15	11.9	11.9		15.8	15.8		12.9	12.9			17.7
North Korea	49.7	21.8	49.7			33.9		38.8	80.1			54.6
DR Congo	6.2	2.2	6.2			7.3		2.3	6.0			7.0
Denmark	36.2	34.7	34.7		50.4	50.4		32.1	32.1			47.6
Djibouti	0.8	0.4	0.8			0.8		0.4	0.8			0.8
Dominican Republic	0.2	24.3	24.3		25.6	25.6		27.4	27.4			28.7
Ecuador	39.2	39.2	39.2		47.0	47.0		40.5	40.5			47.7
Egypt	218	250.2	250.2		251.6	251.6		246.6	246.6			242.9
El Salvador	8.8	6.0	6.0		8.0	8.0		6.2	6.2			8.4
Eritrea	0.7	0.7	0.7			0.8		0.7	0.7			0.9
Estonia	22.9	18.6	18.6		18.1	18.1		13.9	13.9			14.3
Ethiopia	14.7	15.6	15.6		20.9	20.9		16.3	16.3			21.6
Fiji	1.6	2.0	1.6			2.0		2.3	2.5			3.2
Finland	44.9	44.7	44.7		63.8	63.8		41.7	41.7			61.4
France	355	345.7	345.7		447.2	447.2		323.6	323.6			431.3

Carbon emissions, 2017 and 2019 (in Mt CO2) - 2/3

Country	2017						2019					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Gabon	5.0	4.8	5.0			5.1			4.7	4.9		5.1
Gambia	0.6	0.5	0.6			0.7			0.6	0.7		0.8
Georgia	9.9	9.8	9.8		11.2	11.2			10.3	10.3		11.8
Germany	787	786.7	786.7		870.9	870.9			702.0	702.0		800.7
Ghana	16.5	13.8	13.8		18.4	18.4			15.0	15.0		19.7
Greece	74.9	74.9	74.9		63.0	63.0			67.2	67.2		56.2
Guatemala	17.1	17.2	17.2		22.0	22.0			20.5	20.5		25.5
Guinea	3.9	2.9	2.9		2.9	2.9			3.2	3.2		3.2
Guyana	2.5	2.3	2.5			59.9			2.4	2.7		64.3
Haiti	3.1	3.3	3.1			2.7			3.3	3.2		2.8
Honduras	11	9.9	9.9		11.9	11.9			10.9	10.9		13.2
Hong Kong	48.6	42.6	42.6		106.3	106.3			41.5	41.5		105.8
Hungary	49.7	49.7	49.7		65.4	65.4			49.1	49.1		66.3
Iceland	3.6	3.6	3.6			4.5			3.3	3.7		4.7
India	2,310	2,456.8	2,456.8		2,252.5	2,252.5			2,615.8	2,615.8		2,377.1
Indonesia	595	531.0	531.0		551.7	551.7			617.5	617.5		633.4
Iran	706	724.6	724.6		654.0	654.0			779.5	779.5		713.3
Iraq	192	208.7	192			153.5			221.4	209.2		167.3
Ireland	39.3	38.9	38.9		42.1	42.1			37.1	37.1		39.6
Israel	66.3	62.5	62.5		79.4	79.4			64.2	64.2		82.8
Italy	351	351.5	351.5		457.0	457.0			337.1	337.1		451.1
Jamaica	7.5	7.8	7.8		8.7	8.7			8.0	8.0		8.6
Japan	1,190	1,187.7	1,187.7		1,344.5	1,344.5			1,106.7	1,106.7		1,278.9
Jordan	22.2	25.5	25.5		34.0	34.0			26.1	26.1		35.9
Kazakhstan	308	307.9	307.9		239.8	239.8			313.8	313.8		232.7
Kenya	18.6	16.5	16.5		26.1	26.1			17.3	17.3		27.6
Kuwait	97.6	104.8	104.8		98.2	98.2			107.5	107.5		99.1
Kyrgyzstan	9.7	9.3	9.3		15.2	15.2			11.5	11.5		18.8
Laos	2.0	17.9	17.9		17.8	17.8			32.8	32.8		29.5
Latvia	7.2	7.2	7.2		12.3	12.3			8.3	8.3		13.9
Lebanon	17.5	27.9	17.5			27.6			28.2	16.9		26.7
Lesotho	2.8	2.5	2.8			3.8			2.2	2.8		3.8
Liberia	1.2	1.2	1.2			1.0			1.3	1.3		1.1
Libya	54.4	43.7	54.4			19.7			46.4	45.1		16.3
Liechtenstein	0.2	0.2	0.2			0.3			0.1	0.2		0.3
Lithuania	13.5	13.5	13.5		21.5	21.5			13.5	13.5		22.4
Luxembourg	9.2	9.3	9.3		23.3	23.3			9.8	9.8		23.6
Macao SAR	1.8		1.8			7.6				2.9		12.1
Madagascar	3.6	3.9	3.9		5.1	5.1			4.0	4.0		5.2
Malawi	1.4	1.4	1.4		3.1	3.1			1.5	1.5		3.3
Malaysia	250	248.9	248.9		240.9	240.9			250.1	250.1		246.5
Maldives	1.5	1.5	1.5			1.6			1.7	1.6		1.7
Mali	4.6	3.1	4.6			4.6			3.4	5.2		5.1
Malta	1.6	1.6	1.6		5.1	5.1			1.6	1.6		5.4
Mauritania	3.7	3.7	3.7			3.4			4.1	4.2		3.8
Mauritius	4.7	4.5	4.5		5.6	5.6			4.7	4.7		5.7
Mexico	518	461.2	461.2		480.8	480.8			438.5	438.5		460.2
Monaco	0.1		0.1			0.3				0.1		0.3
Mongolia	19.1	34.2	34.2		30.9	30.9			65.5	65.5		55.6
Montenegro	2.8	2.1	2.8			4.3			2.5	3.0		4.4
Morocco	64.2	63.8	63.8		65.8	65.8			71.9	71.9		74.1
Mozambique	10.3	8.1	8.1		17.3	17.3			8.7	8.7		18.3
Myanmar	19.1	23.7	19.1			16.0			26.2	31.3		26.1
Namibia	4.0	4.1			9.0				4.2			
Nepal	8.7	10.1	10.1		15.8	15.8			13.9	13.9		20.0
Netherlands	164	164.4	164.4		151.2	151.2			154.8	154.8		147.7
Netherlands Antilles	7.1		7.1			4.4				7.5		4.7
New Zealand	36.2	36.2	36.2		38.9	38.9			36.5	36.5		40.3
Nicaragua	5.9	5.4	5.4		6.4	6.4			5.5	5.5		6.6
Niger	4.4	2.0	4.4			4.0			2.1	4.9		4.5
Nigeria	121	130.3	130.3		131.8	131.8			140.0	140.0		133.6

Carbon emissions, 2017 and 2019 (in Mt CO2) - 3/3

Country	2017						2019					
	Territorial emissions			Footprint emissions			Territorial emissions			Footprint emissions		
	PRIMAP	GCP	WID	EORA	GCP	WID	PRIMAP	GCP	WID	EORA	GCP	WID
Norway	43.6	43.6	43.6		48.8	48.8		42.4	42.4			46.8
Oman	80.8	65.5	65.5		64.1	64.1		71.7	71.7			66.4
Pakistan	211	232.4	232.4		241.0	241.0		248.8	248.8			256.8
Panama	11	12.0	12.0		24.1	24.1		12.5	12.5			25.9
Papua New Guinea	7.6	6.5	7.6			6.4		7.1	12.7			10.6
Paraguay	6.8	8.0	8.0		11.1	11.1		8.3	8.3			11.8
Peru	61.5	52.5	52.5		60.6	60.6		54.5	54.5			63.0
Philippines	136	134.5	134.5		152.6	152.6		144.3	144.3			163.3
Poland	336	337.3	337.3		297.5	297.5		322.6	322.6			286.1
Portugal	54.7	54.7	54.7		57.9	57.9		48.6	48.6			53.5
Qatar	126	105.6	105.6		71.2	71.2		109.3	109.3			70.6
South Korea	661	620.6	620.6		670.9	670.9		611.3	611.3			662.4
Moldova	10.3	5.3	10.3			3.1		6.0	12.0			3.6
Romania	78.1	78.1	78.1		78.4	78.4		75.1	75.1			76.7
Russia	1,750	1,646.2	1,646.2		1,444.1	1,444.1		1,678.4	1,678.4			1,403.7
Rwanda	1.0	1.1	1.1		1.1	1.1		1.1	1.1			1.1
Samoa	0.3	0.3	0.3			0.3		0.3	0.4			0.6
San Marino	0.2		0.2			0.9			0.2			0.8
Sao Tome and Principe	0.1	0.1	0.1			0.2		0.1	0.1			0.2
Saudi Arabia	541	579.4	579.4		610.2	610.2		582.1	582.1			607.8
Senegal	9.3	9.4	9.4		10.4	10.4		9.8	9.8			10.8
Serbia	52.7	45.5	52.7			61.4		54.7	54.8			63.8
Seychelles	0.6	0.6	0.6			0.8		0.6	0.6			0.9
Sierra Leone	1.4	0.9	1.4			1.7		1.0	1.5			1.9
Singapore	93.5	39.1	39.1		108.1	108.1		38.9	38.9			112.3
Slovakia	36.1	36.1	36.1		47.1	47.1		33.3	33.3			44.4
Slovenia	14.3	14.3	14.3		18.3	18.3		13.7	13.7			17.6
Somalia	0.7	0.6	0.7			0.8		0.7	0.8			0.8
South Africa	454	466.1	466.1		331.0	331.0		478.6	478.6			340.0
South Sudan	2.3	1.5	2.3			0.1		1.6	2.4			0.1
Spain	275	274.7	274.7		285.5	285.5		252.7	252.7			269.5
Sri Lanka	28.8	23.0	23.0		32.4	32.4		24.8	24.8			35.6
Sudan	17.5	21.7	17.5			0.1		23.0	18.8			0.1
Suriname	2.7	2.5	2.7			2.5		2.6	2.8			2.7
Swaziland	1.3	1.0	1.3			4.1		1.0	1.3			4.1
Sweden	42.3	42.3	42.3		70.2	70.2		42.8	42.8			72.5
Switzerland	38.2	38.2	38.2		119.3	119.3		37.7	37.7			122.4
Syria	45.8	26.4	45.8			50.4		27.0	43.5			47.8
Taiwan	286	272.5	272.5		266.2	266.2		262.6	262.6			263.0
Tajikistan	2.9	6.9	2.9			4.4		9.0	3.2			4.8
Thailand	345	286.3	286.3		276.5	276.5		288.3	288.3			282.9
TFYR Macedonia	8.5	7.5	8.5			10.6		8.0	8.0			9.9
Togo	4.5	3.0	3.0		7.5	7.5		3.3	3.3			8.1
Trinidad and Tobago	52.4	40.0	40.0		27.8	27.8		37.9	37.9			25.6
Tunisia	23.3	29.6	29.6		27.8	27.8		31.0	31.0			28.7
Turkey	428	425.3	425.3		448.6	448.6		405.1	405.1			419.0
Turkmenistan	55.1	70.2	55.1			41.3		85.6	62.2			46.6
Uganda	5.7	5.2	5.2		7.5	7.5		5.5	5.5			8.0
Ukraine	223	223.2	223.2		203.4	203.4		223.2	223.2			212.1
UAE	216	186.6	186.6		212.5	212.5		190.7	190.7			226.2
UK	389	388.1	388.1		536.2	536.2		369.9	369.9			525.6
Tanzania	12.5	11.0	11.0		19.8	19.8		11.6	11.6			21.0
USA	5,330	5,253.6	5,253.6		5,591.5	5,591.5		5,284.7	5,284.7			5,618.3
Uruguay	6.5	6.2	6.2		11.0	11.0		6.4	6.4			11.8
Uzbekistan	88.6	109.3	88.6			94.4		110.2	91.4			97.3
Vanuatu	0.2	0.1	0.2			0.3		0.2	0.3			0.6
Venezuela	158	146.7	146.7		161.5	161.5		116.7	116.7			136.4
Viet Nam	229	182.6	182.6		190.1	190.1		247.7	247.7			242.3
Yemen	23.4	10.1	23.4			21.0		10.3	22.7			20.4
Zambia	5.0	6.5	6.5		9.8	9.8		6.7	6.7			9.7
Zimbabwe	14.2	10.2	10.2		11.8	11.8		10.4	10.4			11.7

B.5: GHG emissions : 1980, 1985 and 1990 (in Mt CO2e) - 1/3

Country	1980				1985				1990			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Afghanistan	17.1	17.1		15.7	16.4	16.4		14.9	12.9	12.9	12.3	12.3
Albania	4.6	4.6		6.5	5.7	5.7		8.2	5.7	6.9	7.2	8.2
Algeria	194	194		140.1	197	197		164.7	162	162	118.6	118.6
Angola	79.3	79.3		53.8	71	71		50.8	71.1	71.1	52.0	52.0
Antigua	0.3	0.3		0.7	0.4	0.4		0.8	0.4	0.4	0.9	0.8
Argentina	236	236		224.1	224	224		214.4	236	246.1	225.0	226.3
Armenia	19.6	19.6		10.8	22.3	22.3		13.6	26	22.4	33.4	17.6
Aruba	1.7	1.7		2.1	2.7	2.7		2.1	1.7	1.7	2.2	2.1
Australia	360	360		301.7	396	396		325.9	427	426.4	406.4	369.0
Austria	77.4	77.4		95.1	79.5	79.5		91.5	79.3	78.8	106.3	109.7
Azerbaijan	68.2	68.2		37.6	73.5	73.5		42.1	77.8	72.6	74.2	46.6
Bahamas	8.1	8.1		5.6	1.6	1.6		5.4	2.1	2.1	4.4	5.1
Bahrain	12	12		11.5	15.3	15.3		12.9	19.4	18.1	17.5	14.3
Bangladesh	38.6	38.6		39.0	42.3	42.3		42.5	49.2	49.2	49.0	48.7
Barbados	3.1	3.1		1.9	3.4	3.4		2.0	3.6	3.6	2.4	2.1
Belarus	131	131		52.5	141	141		61.4	140	137.7	0.1	60.0
Belgium	182	182		230.8	149	149		174.5	147	147.3	136.1	183.3
Belize	0.6	0.6		0.6	0.7	0.7		0.7	0.9	0.9	0.9	0.8
Benin	4.7	4.7		5.6	5.2	5.2		5.5	5.7	5.6	6.1	5.9
Bhutan	0.7	0.7		0.7	0.9	0.9		1.1	1.0	1.0	1.1	1.1
Bolivia	16.4	16.4		15.6	16	16		15.0	17.2	17.5	15.6	15.2
Bosnia and Herzegovina	30.4	30.4		29.5	36.1	36.1		35.4	36.2	36.2	36.4	36.4
Botswana	9.5	9.5		8.5	7.8	7.8		7.5	13.4	13.4	16.6	13.4
Brazil	537	537		467.4	542	542		479.9	605	586.9	562.5	561.8
British Virgin Islands	0.04	0.04		0.4	0.1	0.1		0.4	0.1	0.1	0.4	0.4
Brunei	26.4	26.4		17.0	6.7	6.7		15.3	10	10.0	5.6	13.5
Bulgaria	111	111		121.3	121	121		125.9	102	102.0	81.4	80.0
Burkina Faso	10.6	10.6		10.5	12	12		11.8	14.1	14.1	13.4	12.8
Burundi	2.3	2.3		3.6	2.2	2.2		4.1	2.6	2.6	3.4	3.4
Cambodia	11	11		10.3	12.9	12.9		11.8	17.7	17.6	16.0	16.3
Cameroon	16.8	16.8		14.2	30.5	30.5		23.3	27.3	24.4	24.3	20.5
Canada	564	564		561.3	559	559		550.1	607	606.1	627.7	624.4
Cape Verde	0.2	0.2		0.5	0.2	0.2		0.6	0.3	0.3	0.6	0.7
Central African Republic	16.3	16.3		16.3	13.2	13.2		13.0	19.3	19.3	18.2	18.2
Chad	15.1	15.1		15.9	11.9	11.9		12.5	15	15	15.2	15.2
Chile	48.5	48.5		52.9	39.3	39.3		35.2	52.5	51.8	48.6	48.8
China	2,410	2,410		2,261.1	2,980	2,980		2,826.0	3,630	3,540.8	2,844.1	3,059.1
Colombia	85.5	85.5		100.6	90	90		102.5	99.6	109.9	98.1	110.4
Congo	8.2	8.2		6.5	10.8	10.8		8.6	11.8	11.8	9.7	9.7
Costa Rica	6.3	6.3		8.3	6.4	6.4		7.4	7	7.1	9.1	9.2
Croatia	28	28		24.0	27.1	27.1		27.6	32.2	32.0	37.2	30.2
Cuba	48.5	48.5		61.5	50	50		66.1	50.3	50.3	58.7	58.7
Cyprus	4.3	4.3		5.6	4.3	4.3		6.7	5.8	5.7	8.6	7.8
Czech Republic	210	210		214.5	209	209		216.9	198	198	124.3	124.3
Cote d'Ivoire	14	14		18.9	15.1	15.1		15.4	14.5	14.2	15.4	14.5
North Korea	203	203		187.0	251	251		234.5	218	218	194.7	194.7
DR Congo	44.3	44.3		28.9	32.6	32.6		23.3	54.3	54.3	37.7	37.7
Denmark	86.8	86.8		87.8	83.8	83.8		83.0	71.4	70.1	78.1	78.8
Djibouti	0.8	0.8		1.1	0.9	0.9		1.2	1.1	1.1	1.4	1.3
Dominican Republic		11		15.9		11.9		13.5		14.2	15.3	14.1
Ecuador	31.1	31.1		26.5	40.8	40.8		36.2	45.6	45.2	37.0	38.3
Egypt	80.9	80.9		91.8	106	106		127.4	125	115.2	127.2	119.2
El Salvador	6.7	6.7		6.0	6.3	6.3		6.4	7.1	6.9	8.4	8.4
Eritrea	4.1	4.1		3.6	4.3	4.3		3.9	4.8	4.8	4.6	4.6
Estonia	39.6	39.6		30.7	41.3	41.3		29.0	41.8	40.5	42.5	27.4
Fiji	1.7	1.7		2.1	1.6	1.6		2.3	2	2	2.5	2.5
Finland	79.4	79.4		96.2	69.2	69.2		85.4	71.6	71.5	89.3	97.9
France	708	708		816.7	595	595		661.5	557	551.8	699.8	678.2
Gabon	27.3	27.3		17.9	32.2	32.2		16.8	27.5	27.5	22.2	15.6
Gambia	1.1	1.1		1.7	1.0	1.0		1.6	1.2	1.2	1.5	1.5

GHG emissions : 1980, 1985 and 1990 (in Mt CO2e) - 2/3

Country	1980				1985				1990			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Georgia	40.2	40.2		20.2	44.3	44.3		24.8	48.9	39.5	60.5	30.4
Germany	1,350	1,350		1,493.3	1,280	1,280		1,329.0	1,250	1,252.3	1,327.9	1,421.4
Ghana	9.3	9.3		13.4	8.8	8.8		10.8	10.9	11.7	11.5	12.3
Greece	76.2	76.2		94.3	86.5	86.5		96.3	104	103.8	135.1	123.0
Guatemala	13.3	13.3		15.8	12.9	12.9		14.8	15.7	16.2	16.3	16.9
Guinea	9.5	9.5		9.5	8.3	8.3		8.7	9.9	9.9	9.0	8.4
Guyana	4.3	4.3		35.9	3.5	3.5		20.4	2.8	2.8	28.1	28.1
Haiti	5.6	5.6		7.1	6	6		7.9	5.4	5.4	5.9	5.9
Honduras	8.5	8.5		8.8	9.7	9.7		9.6	10.7	10.2	9.5	9.0
Hong Kong	20.1	20.1		33.8	26.9	26.9		55.1	31.7	31.5	149.3	121.2
Hungary	115	115		138.8	113	113		132.2	94.2	94.2	79.1	105.8
Iceland	3.7	3.7		4.2	3.4	3.4		4.5	3.8	3.8	4.7	4.8
India	773	773		700.2	925	925		848.8	1,150	1,070.7	1,053.0	1,021.7
Indonesia	275	275		211.8	309	309		241.0	368	312.3	318.1	268.5
Iran	244	244		270.3	263	263		241.9	377	374.2	345.3	335.4
Iraq	153	153		134.1	110	110		106.9	106	106	106.5	106.5
Ireland	50.2	50.2		50.0	50.6	50.6		47.1	55.7	55.5	47.1	55.5
Israel	26.6	26.6		34.4	30.8	30.8		38.9	43.4	42.5	53.0	58.6
Italy	490	490		619.5	468	468		563.7	518	518.0	640.8	680.6
Jamaica	12.8	12.8		10.1	9.8	9.8		7.0	12.9	13.0	10.7	9.6
Japan	1,120	1,120		1,285.0	1,090	1,090		1,198.0	1,270	1,268.4	1,637.4	1,564.7
Jordan	6.3	6.3		14.4	10.6	10.6		18.9	13	13.1	14.9	18.7
Kazakhstan	415	415		374.6	430	430		400.1	403	403.2	392.8	399.6
Kenya	31.3	31.3		32.1	34.4	34.4		32.7	42	42.1	38.5	38.6
Kuwait	54	54		43.2	50.5	50.5		43.0	74.3	59.6	66.8	54.2
Kyrgyzstan	28.4	28.4		19.5	30.4	30.4		22.3	30	30.3	37.1	31.3
Laos	5.8	5.8		5.1	6.1	6.1		5.8	7.0	7.3	5.8	6.2
Latvia	26.1	26.1		22.5	27.6	27.6		26.3	26.6	26.5	34.2	29.0
Lebanon	12.4	12.4		15.3	12.4	12.4		14.1	11.6	11.6	15.2	15.2
Lesotho	2.1	2.1		2.7	2.4	2.4		3.1	3.4	3.4	4.1	4.1
Liberia	3.1	3.1		1.6	1.9	1.9		1.7	1.7	1.7	1.1	1.8
Libya	79.1	79.1		65.3	49	49		38.5	82.1	82.1	53.7	53.7
Liechtenstein	0.3	0.3		0.6	0.3	0.3		0.6	0.2	0.2	0.5	0.6
Lithuania	48	48		44.4	50.4	50.4		52.5	48.2	48.2	62.1	56.9
Luxembourg	14	14		12.4	11.9	11.9		13.9	12.8	12.8	14.8	15.3
Macao SAR	0.6	0.6		1.3	0.8	0.8		2.4	1.2	1.2	3.2	3.5
Madagascar	21.9	21.9		22.0	21.1	21.1		20.1	22.4	22.4	20.2	20.1
Malawi	4.1	4.1		5.8	4.3	4.3		5.6	5.2	5.2	5.9	5.8
Malaysia	56.2	56.2		56.2	68.6	68.6		69.0	97.9	90.6	72.9	89.0
Maldives	0.1	0.1		0.2	0.1	0.1		0.5	0.1	0.1	0.4	0.7
Mali	10.4	10.4		9.6	8.2	8.2		7.8	9.7	9.7	9.2	9.2
Malta	1.2	1.2		2.4	1.4	1.4		3.0	2.6	2.6	3.4	3.6
Mauritania	3.5	3.5		3.9	3.5	3.5		3.9	4.3	4.3	4.1	4.1
Mauritius	1.5	1.5		2.3	1.7	1.7		3.2	2.6	2.3	4.1	4.2
Mexico	422	422		448.2	423	423		404.4	453	449.0	452.4	440.2
Monaco	0.2	0.2		0.6	0.2	0.2		0.6	0.2	0.2	0.5	0.5
Mongolia	20.5	20.5		17.4	23	23		20.5	23.8	22.6	24.4	20.7
Montenegro	5.6	5.6		5.4	7.8	7.8		7.5	6.2	6.2	6.0	6.0
Morocco	31.1	31.1		44.3	30.9	30.9		40.8	39.3	39.5	42.7	48.5
Mozambique	22.3	22.3		23.2	14.9	14.9		16.9	21.3	20.8	22.6	23.3
Myanmar	28.1	28.1		52.4	30.6	30.6		57.0	28.7	28.7	55.7	55.7
Nepal	20.4	20.4		17.9	21.8	21.8		19.3	23.4	23.5	20.6	20.2
Netherlands	238	238		264.9	208	208		219.2	221	221.4	210.0	252.0
New Zealand	56.7	56.7		54.1	61.1	61.1		57.7	63.6	63.6	58.2	56.4
Nicaragua	8.3	8.3		7.4	8.7	8.7		8.1	10.2	10.1	9.7	9.5
Niger	6.7	6.7		7.4	5.2	5.2		5.3	5.9	5.9	5.6	5.6
Nigeria	389	389		364.5	300	300		269.6	301	299.4	226.7	225.1
Norway	59.2	59.2		61.1	58.6	58.6		57.6	51.7	51.7	68.7	54.1
Oman	51.2	51.2		33.6	27.1	27.1		25.4	37.5	36.9	24.4	27.0
Pakistan	130	130		117.1	161	161		145.9	189	184.4	163.7	167.2
Panama	7.0	7.0		5.4	6.8	6.8		7.7	6.8	6.7	9.6	9.9

GHG emissions : 1980, 1985 and 1990 (in Mt CO2e) - 3/3

Country	1980				1985				1990			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Papua New Guinea	6.4	6.4		8.8	6.7	6.7		8.9	6.8	6.8	7.4	7.4
Paraguay	18.8	18.8		15.4	21	21		17.4	26	25.6	21.5	21.4
Peru	54.9	54.9		55.4	53.1	53.1		49.6	53.5	49.7	53.1	49.7
Philippines	99.2	99.2		93.0	92.4	92.4		79.6	110	108.4	88.0	106.9
Poland	596	596		616.7	562	562		559.3	477	476.5	353.5	389.3
Portugal	44.3	44.3		48.5	44.2	44.2		46.3	58.9	58.9	73.8	69.5
Qatar	43.2	43.2		36.5	29.8	29.8		24.8	28	26.1	21.5	20.6
South Korea	181	181		183.5	249	249		251.4	316	295.4	344.8	381.3
Moldova	40.7	40.7		0.3	44.6	44.6		0.5	45.3	45.3	0.6	0.6
Romania	292	292		259.3	295	295		272.7	251	249.3	213.4	217.5
Russia	2,960	2,960		2,381.0	3,200	3,200		2,618.5	3,230	3,205.3	2,859.0	2,593.4
Rwanda	3.0	3.0		3.1	3.4	3.4		3.8	3.6	3.6	3.9	3.3
Samoa	0.2	0.2		0.4	0.3	0.3		0.5	0.3	0.3	0.4	0.5
San Marino	0.2	0.2		0.5	0.2	0.2		0.6	0.2	0.2	0.6	0.7
Sao Tome and Principe	0.1	0.1		0.3	0.1	0.1		0.3	0.1	0.1	0.3	0.3
Saudi Arabia	536	536		546.1	198	198		241.0	226	272.5	168.3	230.6
Senegal	13.3	13.3		14.1	11.7	11.7		12.1	13.9	13.8	13.7	13.1
Serbia	61.1	61.1		61.7	76.8	76.8		78.8	77.2	77.2	82.2	82.2
Seychelles	0.1	0.1		0.6	0.2	0.2		0.6	0.2	0.2	0.6	0.7
Sierra Leone	4.4	4.4		5.7	3.9	3.9		3.5	4.3	4.3	3.5	3.5
Singapore	17.6	17.6		31.8	18.8	18.8		42.0	24.6	47.2	47.3	81.6
Slovakia	76.4	76.4		58.3	74.6	74.6		60.6	73.8	73.8	133.0	96.4
Slovenia	19.9	19.9		16.1	19.7	19.7		19.6	18.7	18.7	20.9	19.8
Somalia	23.3	23.3		21.0	25.2	25.2		23.0	25.4	25.4	22.4	22.4
South Africa	309	309		262.5	378	378		290.3	377	391.0	326.9	283.0
South Sudan	34.9	34.9		4.0	36.4	36.4		4.7	36.4	36.4	0.1	4.9
Spain	281	281		287.6	267	267		268.5	291	291.2	361.5	346.7
Sri Lanka	13.5	13.5		15.0	14.9	14.9		16.4	14.8	14.6	13.1	14.1
Sudan	43.6	43.6		13.0	47	47		15.4	50.7	50.7	0.1	18.0
Suriname	3.8	3.8		3.8	2.9	2.9		3.7	3	3	3.6	3.6
Swaziland	2.0	2.0		2.9	2.0	2.0		3.4	2.1	2.1	3.4	3.8
Sweden	95.3	95.3		112.1	84.1	84.1		98.4	71.7	71.7	104.2	106.2
Switzerland	57.4	57.4		107.0	56.1	56.1		101.8	53.8	53.8	142.0	113.5
Syria	31.2	31.2		38.6	41	41		48.1	63.9	63.9	61.1	61.1
Taiwan	99.4	99.4		235.3	102	102		229.6	142	134.4	192.2	209.6
Tajikistan	24.8	24.8		20.0	27.9	27.9		23.9	28.7	28.7	24.3	24.3
Thailand	120	120		95.0	139	139		112.7	186	181.6	149.2	183.6
TFYR Macedonia	11.6	11.6		9.2	12.9	12.9		11.4	13.7	13.7	12.7	12.7
Togo	4.4	4.4		5.9	4.2	4.2		4.0	6.2	6.2	6.0	6.1
Trinidad and Tobago	24.2	24.2		14.6	34	34		16.9	26.5	22.6	20.5	19.2
Tunisia	16	16		20.5	19.5	19.5		22.0	20.7	20.5	21.3	22.7
Turkey	149	149		170.7	179	179		210.6	227	222.5	234.8	282.5
Turkmenistan	40	40		35.8	50.6	50.6		46.5	58.2	58.2	54.8	54.8
Uganda	14.7	14.7		23.0	15.6	15.6		16.0	18.5	18.4	17.7	17.7
Ukraine	924	924		680.9	964	964		720.4	945	944.8	951.0	714.4
UAE	71.8	71.8		107.2	72.6	72.6		98.7	61.2	66.5	52.3	68.1
UK	826	826		871.6	790	790		823.3	801	800.5	894.7	873.8
Tanzania	36.9	36.9		34.5	35.9	35.9		33.3	43.4	43.2	40.4	40.1
USA	6,610	6,610		6,323.7	6,240	6,240		6,274.1	6,600	6,468.3	6,577.4	6,310.8
Uruguay	33.8	33.8		34.7	28	28		25.2	28.4	28.1	25.2	24.5
Uzbekistan	138	138		137.8	171	171		172.9	192	192	202.5	202.5
Vanuatu	0.4	0.4		0.5	0.4	0.4		0.6	0.4	0.4	0.6	0.6
Venezuela	145	145		143.4	158	158		131.9	192	187.8	151.8	141.7
Viet Nam	68.5	68.5		42.0	77.5	77.5		61.2	83.1	83.1	51.6	56.9
Yemen	9.1	9.1		10.0	15.2	15.2		17.0	17.9	17.9	22.0	22.0
Zambia	26.2	26.2		32.6	20.9	20.9		22.5	29.3	29.2	27.6	26.5
Zimbabwe	23.2	23.2		22.1	21.1	21.1		21.4	27.4	27.5	25.4	27.7

B.6: GHG emissions : 1995, 2000 and 2005 (in Mt CO2e) - 1/3

Country	1995				2000				2005			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Afghanistan	12.9	12.9	12.4	12.4	14.9	14.9	13.9	13.9	17.2	17.2	17.5	17.5
Albania	5.8	3.7	7.1	5.4	6.3	5.7	7.5	7.3	7.3	6.9	9.8	9.6
Algeria	206	206	118.8	118.8	174	174	79.9	79.9	190	190	82.1	82.1
Angola	80.3	80.3	37.7	37.7	71.2	71.2	36.9	36.9	89.1	89.1	48.6	48.6
Antigua	0.4	0.4	0.9	0.9	0.5	0.5	0.9	1.0	0.6	0.6	1.1	1.0
Argentina	254	264.8	258.4	253.2	283	286.4	292.4	273.1	305	310.4	284.1	266.5
Armenia	14.1	6.5	13.9	5.6	6.1	6.2	5.9	6.4	7.7	7.8	7.4	8.2
Aruba	1.7	1.7	2.0	2.1	2.4	2.4	2.4	2.1	2.8	2.8	2.6	2.1
Australia	441	440.4	411.5	375.3	491	491.2	459.2	408.7	528	527.5	519.8	463.9
Austria	80	79.8	115.6	115.2	80.8	80.5	114.0	119.4	93.1	92.8	128.4	128.6
Azerbaijan	49.8	46.3	45.0	34.0	43.1	43.2	34.4	35.6	53.3	50.7	40.9	46.1
Bahamas	1.9	1.9	4.2	4.8	1.9	1.9	4.1	4.6	2.0	2.0	4.0	4.3
Bahrain	20	18.3	17.2	15.6	24.5	22.8	19.8	17.0	26.5	24.5	21.2	18.4
Bangladesh	60.1	59.2	57.3	58.4	77.4	74.3	71.2	72.1	98.1	93.6	89.8	94.1
Barbados	4.3	4.3	2.1	2.3	5.1	5.1	2.4	2.4	5.5	5.5	2.6	2.5
Belarus	83	82.2	0.1	33.6	80.7	80.0	0.1	65.4	88.4	87.6	0.1	60.4
Belgium	155	155.0	149.4	197.5	150	149.7	143.9	217.5	147	146.7	139.3	239.5
Belize	1.0	1.0	0.9	0.9	1.0	1.0	1.0	1.0	1.3	1.3	1.1	1.1
Benin	6.8	6.7	7.1	7.0	8.6	8.6	7.9	8.6	9.7	9.6	10.4	12.1
Bhutan	1.3	1.3	1.1	1.1	1.5	1.5	1.3	1.3	1.6	1.6	1.5	1.5
Bolivia	27.9	28.9	22.3	23.0	49.9	53.1	36.6	40.1	57.3	58.5	37.8	38.7
Bosnia and Herzegovina	6.7	6.7	10.2	10.2	19.6	19.6	19.8	19.8	22.7	22.7	22.5	22.5
Botswana	13.8	13.8	18.4	14.3	13.5	13.3	17.9	17.8	11.6	10.7	17.4	15.7
Brazil	700	676.6	692.3	662.4	803	769.2	770.2	725.7	916	875.1	836.4	775.9
British Virgin Islands	0.1	0.1	0.4	0.5	0.1	0.1	0.5	0.5	0.1	0.1	0.5	0.5
Brunei	9.4	9.3	5.5	11.7	9.9	9.7	5.1	10.0	10.3	10.1	4.7	8.2
Bulgaria	74.9	74.9	50.9	57.3	59.8	59.8	39.8	53.4	64.4	64.4	50.7	57.6
Burkina Faso	15.9	15.8	14.4	14.3	17.8	17.7	16.5	16.7	23.5	23.4	22.5	22.5
Burundi	2.6	2.6	3.4	3.4	2.8	2.8	3.2	3.2	2.8	2.8	4.1	4.1
Cambodia	20.9	20.9	19.8	18.9	22.1	22.0	17.7	17.4	25.4	25.3	21.4	22.7
Cameroon	54.9	46.4	43.1	35.2	44.9	38.2	34.8	28.8	44.2	38.3	36.2	31.0
Canada	656	655.9	635.0	643.1	735	734.2	639.2	699.7	733	732.4	683.3	711.6
Cape Verde	0.4	0.4	0.7	0.9	0.5	0.5	0.8	1.0	0.7	0.7	1.1	1.1
Central African Republic	21.6	21.6	19.4	19.4	35.7	35.7	22.9	22.9	38.2	38.2	30.9	30.9
Chad	25	25	16.1	16.1	34.1	34.1	19.3	19.3	39.6	39.6	21.4	21.4
Chile	62.3	61.8	65.0	61.9	77.1	80.0	75.1	81.3	81	82.8	81.5	85.8
China	4,680	4,545.1	3,606.3	3,816.9	4,890	4,739.3	3,729.0	3,915.3	7,770	7,541.2	5,741.4	5,834.3
Colombia	113	115.2	120.9	120.1	117	115.9	117.1	112.2	130	129.7	128.0	124.8
Congo	13	13	8.6	8.6	12.3	12.3	6.2	6.2	13.5	13.5	7.1	7.1
Costa Rica	11	11.0	13.1	12.5	12	12.1	13.5	15.6	13	13.6	14.8	19.3
Croatia	23.3	23.3	28.3	26.3	26.1	26.1	28.9	28.3	30.3	30.3	36.2	36.1
Cuba	38.9	38.9	43.0	43.0	39.8	39.8	42.5	42.5	37.6	37.6	42.1	42.1
Cyprus	7.2	7.2	10.9	8.9	8.5	8.5	12.5	10.0	9.4	9.4	14.4	11.0
Czech Republic	157	157	118.0	118.0	150	150	115.0	115.0	148	148	119.8	119.8
Cote d'Ivoire	18	17.2	15.5	15.8	19.4	18.6	16.0	14.8	23	22.2	18.3	18.9
North Korea	146	146	113.5	113.5	88.1	88.1	64.9	64.9	103	103	78.0	78.0
DR Congo	60.8	60.8	40.2	40.2	58.4	58.4	33.5	33.5	61	61	45.7	45.7
Denmark	79.1	78.0	86.8	85.8	72	70.7	80.5	83.2	68.4	67.0	89.7	85.6
Djibouti	1.2	1.2	1.3	1.5	1.4	1.4	1.4	1.6	1.6	1.6	1.6	1.7
Dominican Republic		23.0	24.3	21.7		28.9	25.9	31.5		29.8	24.6	30.3
Ecuador	51.2	51.0	43.7	44.6	42.3	42.1	33.4	36.5	54.5	54.3	48.8	53.1
Egypt	148	151.0	146.5	149.4	187	204.3	185.2	196.5	246	242.0	241.0	222.6
El Salvador	9.4	9.3	11.2	10.9	10.2	10.0	13.2	13.1	11.6	11.3	14.4	14.3
Eritrea	4.4	4.4	4.5	4.5	5.4	5.4	5.2	5.2	5.5	5.5	5.6	5.6
Estonia	22.1	20.2	16.0	25.7	18.9	17.3	14.5	24.0	21	19.1	18.3	22.3
Ethiopia	51.9	52.1	1.3	4.2	77.9	77.8	0.9	5.4	79	77.2	2.0	8.5
Fiji	2.2	2.2	2.4	2.6	2.2	2.2	2.2	2.8	2.5	2.5	2.8	3.0
Finland	73	72.0	80.5	90.6	70.8	70.5	79.4	90.2	70.5	70.2	81.0	96.8
France	552	546.1	725.3	698.2	560	555.8	731.5	708.9	563	556.4	772.9	726.0
Gabon	21.7	21.7	15.5	14.5	16.8	16.8	10.2	13.3	16.6	16.6	10.3	12.2

GHG emissions : 1995, 2000 and 2005 (in Mt CO2e) - 2/3

Country	1995				2000				2005			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Gambia	1.3	1.3	1.5	1.5	1.4	1.4	1.6	1.6	1.6	1.6	1.8	1.8
Georgia	12.7	10.0	12.8	9.2	12.4	12.4	12.8	12.7	13.2	12.4	14.5	14.7
Germany	1,120	1,120.2	1,291.4	1,372.4	1,040	1,039.8	1,165.5	1,291.8	994	994.4	1,114.5	1,232.5
Ghana	12.3	13.8	12.1	14.0	17.1	16.8	15.0	17.4	19.7	19.9	19.0	23.4
Greece	110	109.9	148.3	131.3	127	127.0	177.8	144.2	137	136.9	196.3	133.0
Guatemala	18.8	15.7	20.2	17.0	21.2	20.2	21.4	22.0	24.8	24.1	26.0	27.0
Guinea	11.9	11.7	10.7	10.1	13.4	13.2	10.6	10.3	17	16.9	12.7	12.6
Guyana	2.9	2.9	37.7	37.7	3.1	3.1	39.3	39.3	2.9	2.9	42.8	42.8
Haiti	6.8	6.8	6.5	6.5	8.1	8.1	7.2	7.2	10.7	10.7	9.7	9.7
Honduras	12.3	11.7	9.6	9.4	11.3	12.0	10.7	12.7	14.3	14.6	13.9	16.1
Hong Kong	35.9	35.7	288.7	193.5	45.5	45.2	272.1	170.0	48.8	48.5	373.3	167.5
Hungary	75.6	75.6	67.0	87.0	73.5	73.5	62.8	82.9	75.6	75.6	76.3	92.8
Iceland	3.6	3.6	4.6	5.1	4.2	4.2	5.5	5.4	4.1	4.1	6.6	5.7
India	1,400	1,299.3	1,226.8	1,182.3	1,640	1,558.4	1,434.4	1,408.6	1,800	1,785.8	1,570.9	1,621.9
Indonesia	449	387.5	394.5	335.2	543	470.8	403.4	369.7	621	565.3	496.0	475.5
Iran	438	434.1	364.0	374.2	517	510.3	416.1	424.9	652	641.5	548.7	573.2
Iraq	113	113	89.8	89.8	124	124	56.5	56.5	163	163	126.4	126.4
Ireland	59.4	59.3	53.3	58.7	68.6	68.5	61.4	73.0	70.6	69.9	75.4	89.2
Israel	58.3	57.4	76.8	78.6	70.9	68.5	85.7	81.7	75.1	67.9	84.5	89.4
Italy	531	531.3	632.4	678.8	554	554.4	683.4	714.4	588	588.0	737.6	744.8
Jamaica	14.8	14.9	12.9	11.2	16.4	16.6	13.9	10.2	16.6	16.8	14.6	15.3
Japan	1,380	1,379.9	1,909.4	1,802.7	1,380	1,384.8	1,885.0	1,804.3	1,380	1,380.1	1,906.1	1,786.2
Jordan	17.1	16.7	18.9	21.7	20.2	18.9	22.9	20.8	27.5	24.9	31.4	31.8
Kazakhstan	257	257.2	212.3	196.5	240	239.8	172.5	167.3	263	263.3	196.2	197.6
Kenya	43.3	43.5	39.2	39.8	43.4	45.6	40.2	39.5	50.2	49.0	45.8	45.0
Kuwait	88	85.9	68.0	71.4	82.9	80.6	53.9	44.4	107	103.7	82.7	78.9
Kyrgyzstan	10.7	9.5	10.4	14.3	10.1	9.6	8.8	8.8	12.5	12.5	11.7	13.6
Laos	8.1	8.4	6.7	7.2	8.8	8.8	7.1	7.9	10.2	10.1	8.0	8.3
Latvia	13.1	13.1	13.2	16.0	10.7	10.7	12.9	16.3	11.6	11.6	15.4	17.2
Lebanon	17.7	17.7	25.2	25.2	19	19	24.2	24.2	20.9	20.9	27.5	27.5
Lesotho	3.7	3.7	3.9	3.9	4.3	4.3	4.1	4.1	4.4	4.4	4.4	4.4
Liberia	1.4	1.4	0.5	1.8	2.0	2.0	1.0	1.9	2.6	2.6	1.3	1.9
Libya	104	104	66.9	66.9	78	78	48.7	48.7	87.4	87.4	30.7	30.7
Liechtenstein	0.2	0.2	0.5	0.5	0.3	0.3	0.5	0.5	0.3	0.3	0.5	0.5
Lithuania	22.4	22.4	23.1	33.8	19.6	19.6	23.4	25.8	22.9	22.9	29.2	29.0
Luxembourg	10.1	10.1	14.5	16.8	9.7	9.7	17.1	18.2	13.1	13.1	21.0	19.7
Macao SAR	1.4	1.4	4.3	4.6	1.8	1.8	4.3	5.7	2.0	2.0	6.2	6.7
Madagascar	25	25.1	20.6	20.7	30.9	31.0	22.4	22.4	29	28.7	22.0	22.4
Malawi	5.4	5.3	5.8	5.9	6.1	6.1	6.4	6.5	7.1	7.0	7.8	7.7
Malaysia	148	163.6	128.8	136.8	216	195.5	143.7	152.5	296	263.8	167.7	192.0
Maldives	0.2	0.2	0.6	0.9	0.5	0.5	0.7	1.2	0.8	0.8	1.1	1.4
Mali	10.3	10.3	9.7	9.7	14.1	14.1	12.6	12.6	33.9	33.9	33.0	33.0
Malta	2.7	2.7	4.2	4.2	2.8	2.8	4.5	4.8	3.0	3.0	4.3	5.4
Mauritania	5.0	5.0	4.2	4.2	5.9	5.9	4.5	4.5	6.9	6.9	5.6	5.6
Mauritius	3.0	2.7	5.0	5.1	4.3	4.7	6.2	6.0	4.8	5.2	6.1	7.0
Mexico	485	467.6	438.6	433.0	561	542.1	546.9	564.6	592	621.0	559.0	637.4
Monaco	0.2	0.2	0.5	0.5	0.2	0.2	0.5	0.5	0.2	0.2	0.5	0.5
Mongolia	22.7	21.8	17.4	16.0	21.5	21.6	5.8	9.9	21.4	20.3	11.8	14.5
Montenegro	2.3	2.3	2.4	2.4	6.1	6.1	5.6	5.6	5.2	5.2	5.2	5.2
Morocco	45.4	45.9	45.2	53.6	55.9	56.5	53.5	63.5	73.8	76.6	69.9	81.1
Mozambique	22.7	22.2	23.3	24.3	21.7	21.5	20.4	21.8	29.2	28.2	29.1	29.5
Myanmar	34.5	34.5	62.9	62.9	39.3	39.3	54.2	54.2	44.3	44.3	76.3	76.3
Nepal	26.7	27.0	22.7	22.5	29.4	29.3	21.9	22.3	30.9	30.7	23.8	24.2
Netherlands	232	232.0	231.5	272.8	220	219.9	227.6	193.1	215	215.5	255.8	241.2
New Zealand	67.5	67.4	64.9	61.7	74.2	74.1	64.2	63.2	81.3	81.3	78.5	75.5
Nicaragua	10.1	10.1	9.4	9.4	12.6	12.6	11.7	12.0	14.1	14.1	12.7	13.6
Niger	10.9	10.9	8.6	8.6	15	15	11.6	11.6	16.5	16.5	14.7	14.7
Nigeria	318	314.7	248.7	242.5	299	300.7	186.9	176.7	327	325.8	249.9	247.7
Norway	51.9	51.9	70.4	54.8	55.3	55.3	69.0	53.6	55.6	55.6	83.0	62.2
Oman	35.8	34.9	23.3	28.0	39.6	38.3	21.3	26.8	53.6	51.6	28.4	35.7

GHG emissions : 1995, 2000 and 2005 (in Mt CO2e) - 3/3

Country	1995				2000				2005			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Pakistan	222	216.6	190.0	195.6	267	260.4	219.8	233.5	317	309.8	266.5	282.9
Panama	7.3	8.0	11.1	12.2	10	10.0	12.5	14.5	11.5	11.5	14.0	16.8
Papua New Guinea	7.3	7.3	6.4	6.4	9.2	9.2	6.7	6.7	12.6	12.6	9.1	9.1
Paraguay	31.1	30.5	28.2	27.4	26.1	25.9	22.7	22.9	35.4	34.8	29.2	28.8
Peru	61.1	55.2	63.6	56.7	69.3	65.0	66.6	64.8	78.4	74.1	79.8	70.0
Philippines	134	132.2	117.7	130.5	153	151.1	129.2	144.9	161	158.7	132.4	147.3
Poland	448	447.8	371.4	385.7	397	397.3	364.6	363.3	404	405.2	374.8	358.4
Portugal	68.9	68.9	89.6	83.3	81.9	81.9	107.9	101.3	85.8	85.8	110.0	106.6
Qatar	45.1	43.1	30.5	35.3	62.7	59.2	29.2	26.5	83.6	78.8	53.9	44.3
South Korea	450	434.0	534.8	538.4	517	514.4	573.1	586.2	580	531.3	597.0	641.4
Moldova	18.1	18.1	0.2	0.2	11.8	11.8	0.2	0.2	14	14	0.6	0.6
Romania	190	188.0	157.6	151.5	145	144.0	123.6	120.5	153	152.7	146.4	147.0
Russia	2,120	2,092.9	1,909.4	1,581.2	1,930	1,911.1	1,564.8	1,336.3	2,030	2,007.4	1,740.3	1,595.2
Rwanda	3.3	3.3	3.4	3.0	4.0	4.0	3.9	3.7	5.0	5.0	5.3	5.0
Samoa	0.3	0.3	0.5	0.5	0.3	0.3	0.5	0.6	0.4	0.4	0.6	0.6
San Marino	0.2	0.2	0.6	0.8	0.3	0.3	0.6	0.8	0.3	0.3	0.6	0.9
Sao Tome and Principe	0.1	0.1	0.3	0.3	0.1	0.1	0.2	0.3	0.2	0.2	0.3	0.3
Saudi Arabia	280	322.7	202.2	279.4	343	384.4	255.5	268.3	454	498.9	399.0	441.4
Senegal	15.2	15.1	14.2	13.9	17.5	17.5	15.9	16.3	18.7	18.6	18.6	19.0
Serbia	55.3	55.3	57.4	57.4	56	56	56.0	56.0	68.7	68.7	69.4	69.4
Seychelles	0.2	0.2	0.7	0.8	0.6	0.6	1.0	0.9	0.8	0.8	1.2	1.0
Sierra Leone	4.1	4.1	3.3	3.3	3.3	3.3	2.7	2.7	5.7	5.7	4.4	4.4
Singapore	26.5	44.3	79.3	109.0	47.9	56.1	109.1	146.1	32.5	39.8	124.8	163.5
Slovakia	53.5	53.5	54.2	56.9	49.5	49.5	54.5	54.2	51.4	51.4	62.5	55.6
Slovenia	18.7	18.7	19.5	22.2	19.1	19.1	19.4	23.1	20.5	20.5	22.1	23.2
Somalia	24.9	24.9	21.6	21.6	26.8	26.8	23.1	23.1	29.3	29.3	25.3	25.3
South Africa	425	440.6	362.6	326.5	452	463.3	368.0	346.4	504	505.9	418.4	374.4
South Sudan	42	42	0.1	4.6	52.6	52.6	0.1	5.5	52.1	52.1	0.1	6.7
Spain	330	330.4	399.0	376.0	390	390.3	507.6	446.3	445	445.5	596.9	535.4
Sri Lanka	16.9	16.6	16.3	17.6	20.2	19.9	19.0	22.9	22.7	22.4	21.7	27.6
Sudan	66.7	66.7	0.1	21.5	80.3	80.3	0.1	24.4	93.8	93.8	0.04	27.6
Suriname	3.4	3.4	2.9	3.5	3.1	3.1	2.5	3.4	2.5	2.5	2.5	3.3
Swaziland	2.1	2.1	4.6	4.3	2.8	2.8	5.1	4.8	2.8	2.8	5.9	5.3
Sweden	73.6	73.6	104.7	106.1	68.5	68.5	110.1	105.3	67	67.0	109.7	107.6
Switzerland	52.8	52.8	111.0	112.4	53.1	53.1	105.8	136.1	55.4	55.4	120.5	135.2
Syria	77.3	77.3	63.1	63.1	78.2	78.2	60.0	60.0	72.5	72.5	58.4	58.4
Taiwan	195	181.6	195.7	244.3	246	242.9	179.7	269.3	289	279.8	196.2	292.2
Tajikistan	12.5	12.5	11.4	11.4	8.4	8.4	6.1	6.1	9.2	9.2	7.8	7.8
Thailand	260	253.6	223.6	245.9	282	268.7	207.1	220.2	361	334.3	256.3	287.0
TFYR Macedonia	12.6	12.6	11.8	11.8	13	13	12.0	12.0	13.6	13.6	12.4	12.4
Togo	6.4	5.9	5.8	6.0	7.7	7.1	6.7	6.6	9.0	8.3	8.4	9.3
Trinidad and Tobago	26	20.7	15.2	21.5	38.6	31.1	16.0	23.7	64	50.9	30.0	26.0
Tunisia	25	24.8	26.1	26.4	30.5	30.2	30.1	31.8	33.6	33.4	33.3	30.7
Turkey	254	251.9	271.3	292.4	305	302.8	340.8	345.3	343	341.2	388.1	386.2
Turkmenistan	40.5	40.5	39.9	39.9	57.6	57.6	51.1	51.1	76.4	76.4	70.3	70.3
Uganda	20.2	20.1	20.0	19.9	23.3	23.2	22.1	21.7	29.1	28.9	30.0	29.5
Ukraine	563	562.9	455.5	339.8	428	428.3	305.7	296.5	443	443.1	336.8	329.1
UAE	84.8	91.3	90.0	99.5	138	144.8	141.2	136.5	183	157.5	185.6	206.9
UK	754	752.8	873.1	847.0	718	717.5	944.9	892.6	697	695.9	1,005.6	917.1
Tanzania	49.8	48.6	46.5	45.2	50.4	50.3	45.5	46.1	66.4	66.2	61.3	61.4
USA	6,940	6,798.9	7,070.9	6,699.6	7,410	7,288.1	8,415.6	7,767.8	7,510	7,401.9	8,874.8	8,119.2
Uruguay	31.9	31.6	28.9	28.4	30.8	30.6	29.2	29.9	34.8	34.8	32.8	32.7
Uzbekistan	201	201	169.2	169.2	216	216	179.5	179.5	217	217	167.3	167.3
Vanuatu	0.5	0.5	0.6	0.7	0.5	0.5	0.5	0.7	0.5	0.5	0.6	0.7
Venezuela	220	213.9	173.4	174.2	241	235.9	197.3	150.5	257	248.8	198.2	177.9
Viet Nam	103	102.0	76.8	77.8	151	145.9	111.7	108.6	218	208.9	170.9	177.7
Yemen	19.9	19.9	20.4	20.4	27.6	27.6	23.4	23.4	32.4	32.4	27.0	27.0
Zambia	28.9	28.9	26.6	26.3	27.2	27.2	23.3	24.2	33.9	33.9	31.8	31.4
Zimbabwe	33	30.5	29.0	28.8	70.4	58.9	50.8	43.2	30.8	27.9	22.1	21.4

B.7: GHG emissions : 2010, 2015 and 2019 (in Mt CO2e) - 1/3

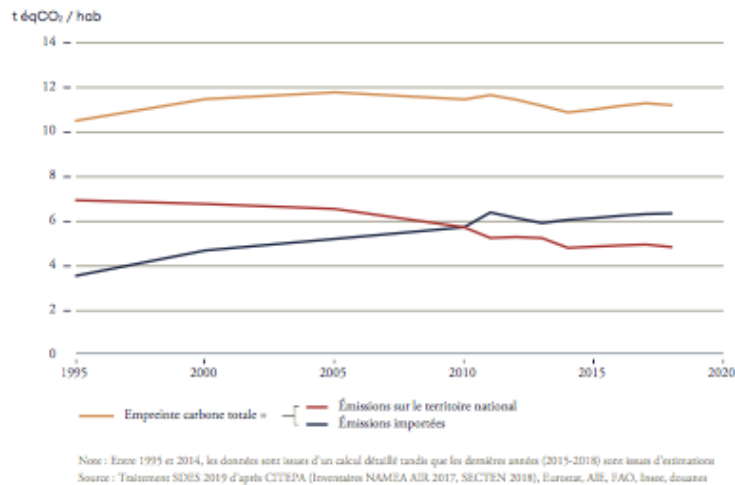
Country	2010				2015				2019			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Afghanistan	29.8	29.8	28.7	28.7	34.1	34.1	32.5	32.5	48.6	44.6	46.4	46.4
Albania	8.8	7.1	10.8	9.8	9.9	7.3	11.8	9.7	8.6	13.4	11.0	11.0
Algeria	199	199	101.8	101.8	239	239	128.8	128.8	255.4	118.8	137.6	137.6
Angola	95.7	95.7	64.4	64.4	110	110	67.1	67.1	90.6	76.6	55.2	55.2
Antigua	0.6	0.6	1.1	1.1	0.7	0.7	1.1	1.2	0.7	1.0	1.2	1.2
Argentina	320	319.7	292.4	280.1	350	336.4	334.4	322.6	324.0	281.4	290.2	290.2
Armenia	8.5	8.1	9.2	9.0	11.3	9.8	11.6	9.8	10.5	10.5	10.4	10.4
Aruba	2.5	2.5	2.6	2.1	0.9	0.9	1.7	2.1	1.0	2.8	2.1	2.1
Australia	543	542.5	543.4	502.8	541	540.6	556.2	518.8	553.3	514.0	490.7	490.7
Austria	85.1	84.8	122.8	119.7	79	78.8	116.9	112.7	81.3	121.3	117.4	117.4
Azerbaijan	56.8	56.4	46.9	49.2	64.4	60.4	61.7	61.9	71.5	51.7	63.7	63.7
Bahamas	1.9	1.9	3.9	4.0	2.7	2.7	4.8	3.8	2.9	4.1	3.6	3.6
Bahrain	37.6	34.8	27.5	19.7	32.9	39.1	25.7	21.1	42.0	31.9	22.2	22.2
Bangladesh	119	115.8	112.4	120.5	147	137.3	148.2	150.3	182.7	168.7	206.1	206.1
Barbados	5.8	5.8	2.6	2.6	5.4	5.4	2.5	2.8	5.6	2.5	2.9	2.9
Belarus	94.4	93.5	0.2	60.8	90.8	89.8	0.4	63.6	94.6	0.4	65.5	65.5
Belgium	135	134.6	130.2	215.9	120	120.0	119.5	197.9	118.6	119.7	198.4	198.4
Belize	1.4	1.4	1.2	1.2	1.6	1.6	1.4	1.3	1.8	1.3	1.4	1.4
Benin	12.7	12.6	12.9	14.7	15.4	15.0	15.0	16.0	18.2	15.7	18.5	18.5
Bhutan	2.0	2.0	2.0	2.0	2.4	2.4	2.3	2.3	2.9	3.8	2.7	2.7
Bolivia	72	72.9	43.9	46.2	86.2	88.0	53.9	58.3	98.7	55.5	68.9	68.9
Bosnia and Herzegovina	27	27	24.9	24.9	27.5	27.5	25.0	25.0	29.9	38.5	27.2	27.2
Botswana	24.3	22.8	33.0	28.5	13.5	11.9	21.4	23.0	12.6	37.7	23.9	23.9
Brazil	1,000	959.2	1,010.6	949.8	1,120	1,083.2	1,102.7	1,035.4	1,057.5	964.8	970.5	970.5
British Virgin Islands	0.2	0.2	0.5	0.6	0.2	0.2	0.6	0.6	0.2	0.5	0.6	0.6
Brunei	14	13.8	6.0	6.4	15.4	12.6	6.9	4.7	15.0	6.6	3.3	3.3
Bulgaria	61	61.0	46.7	52.2	62.2	62.2	44.1	50.3	56.0	43.8	46.3	46.3
Burkina Faso	27	27.1	27.4	27.3	30.1	30.6	30.6	31.0	34.7	35.3	38.8	38.8
Burundi	3.5	3.5	5.2	5.2	3.4	3.4	6.3	6.3	4.1	8.0	7.6	7.6
Cambodia	31.3	31.4	27.8	30.2	33.6	35.0	29.9	35.1	44.5	40.5	48.7	48.7
Cameroon	44.1	38.7	37.2	31.9	51.5	44.4	37.7	33.6	42.0	38.3	35.8	35.8
Canada	695	693.5	731.4	730.6	724	722.9	780.7	728.6	720.2	730.9	725.2	725.2
Cape Verde	0.9	0.9	1.3	1.2	1.0	1.0	1.4	1.3	1.2	1.7	1.4	1.4
Central African Republic	9.0	9.0	8.2	8.2	9.7	9.7	8.6	8.6	10.0	9.2	8.9	8.9
Chad	48.3	48.3	22.9	22.9	64.2	64.2	57.5	57.5	72.0	35.0	64.5	64.5
Chile	92.2	93.7	95.7	97.5	109	105.5	117.9	116.8	109.0	109.9	119.0	119.0
China	11,000	10,630.5	8,907.5	8,779.6	12,700	11,983.2	10,704.2	10,445.2	12,831.6	10,630.4	11,241.9	11,241.9
Colombia	147	153.7	158.1	154.7	159	163.6	178.3	172.9	198.3	184.5	200.4	200.4
Congo	15.1	15.1	8.6	8.6	15.1	15.1	8.7	8.7	18.2	8.2	10.5	10.5
Costa Rica	14.7	15.3	17.4	19.4	16.7	15.6	20.3	20.5	17.4	20.3	21.9	21.9
Croatia	28.2	28.2	34.3	32.7	24.3	24.3	30.5	27.7	24.1	34.1	28.5	28.5
Cuba	49.2	49.2	54.7	54.7	47.5	47.5	53.2	53.2	48.4	47.5	54.2	54.2
Cyprus	9.6	9.6	15.0	12.1	8.4	8.4	13.4	13.2	8.8	14.7	14.1	14.1
Czech Republic	140	140	118.0	118.0	129	129	107.4	107.4	127.6	108.2	106.2	106.2
Cote d'Ivoire	22	20.4	16.8	17.8	29.1	25.9	21.4	24.9	30.6	18.0	31.8	31.8
North Korea	90.2	90.2	62.2	62.2	66.8	66.8	39.7	39.7	105.7	70.7	62.8	62.8
DR Congo	62.7	62.7	49.3	49.3	75.6	75.6	54.8	54.8	72.4	50.6	52.5	52.5
Denmark	64.9	63.4	84.5	79.1	50.3	49.0	72.2	66.5	44.7	70.9	62.6	62.6
Djibouti	1.6	1.6	1.8	1.9	1.8	1.8	2.1	2.0	2.0	1.6	2.1	2.1
Dominican Republic		35.3	29.2	37.6		38.8	32.5	40.1	45.6	34.6	44.8	44.8
Ecuador	63.5	62.1	56.9	64.3	68.8	66.9	63.0	69.7	65.8	60.0	68.6	68.6
Egypt	285	277.8	286.2	274.7	289	301.3	288.5	304.9	330.0	319.0	323.4	323.4
El Salvador	11.5	11.1	14.9	13.7	12.7	11.0	16.6	13.7	10.2	14.8	13.2	13.2
Eritrea	5.4	5.4	5.4	5.4	5.9	5.9	5.9	5.9	6.4	6.3	6.3	6.3
Estonia	24.2	21.2	18.0	20.7	22.1	18.2	16.3	19.0	15.8	16.6	17.7	17.7
Ethiopia	104	98.9	3.3	11.0	117	116.3	3.4	19.0	118.3	4.0	22.8	22.8
Fiji	2.5	2.5	2.9	3.2	2.1	2.1	3.4	3.3	3.4	3.2	3.5	3.5
Finland	76.3	76.0	82.2	96.8	55.6	55.4	67.7	78.3	51.5	71.6	73.8	73.8
France	520	513.1	703.4	673.0	468	459.2	641.4	589.5	435.8	648.8	577.9	577.9
Gabon	14.1	14.1	8.8	11.0	14.4	14.4	10.1	9.9	11.3	10.0	9.0	9.0

GHG emissions : 2010, 2015 and 2019 (in Mt CO2e) - 2/3

Country	2010				2015				2019			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Gambia	2.4	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.8	2.4	2.8	
Georgia	14.4	13.3	16.2	14.8	17.2	17.3	19.2	18.6	18.9	19.9	19.3	
Germany	944	943.7	992.9	1,134.3	908	907.8	978.0	1,036.4	799.5	895.8	947.5	
Ghana	23.1	24.8	23.5	27.8	33.4	36.4	30.7	36.5	36.2	25.6	35.0	
Greece	119	119.0	174.1	130.3	95.9	95.9	135.6	91.9	86.6	136.4	81.3	
Guatemala	26.6	25.7	28.5	29.1	33.3	32.1	34.3	35.4	39.1	36.9	44.1	
Guinea	21.2	21.0	15.5	15.2	25.2	24.3	18.3	17.5	28.2	21.9	22.5	
Guyana	3.3	3.3	75.8	75.8	4.1	4.1	68.8	68.8	4.6	73.0	75.7	
Haiti	11.4	11.4	11.5	11.5	12.6	12.6	13.4	13.4	14.5	12.0	15.4	
Honduras	15.1	14.4	15.9	17.2	16.9	16.4	18.8	19.8	17.7	18.8	21.4	
Hong Kong	45.7	45.1	447.5	168.0	49.7	47.5	454.1	189.5	46.6	412.7	182.8	
Hungary	65.1	65.1	63.9	81.5	61	61.0	57.9	75.5	62.8	62.4	78.9	
Iceland	5.0	5.0	5.9	6.0	4.8	4.8	5.8	6.3	4.9	5.4	6.5	
India	2,250	2,318.5	1,999.9	2,090.1	2,800	2,913.4	2,433.2	2,584.3	3,312.3	2,371.7	2,971.4	
Indonesia	713	673.2	628.8	624.0	835	780.0	731.0	743.4	935.6	798.2	885.6	
Iran	768	748.0	688.7	697.6	838	830.8	759.2	764.5	989.0	817.6	907.1	
Iraq	175	175	168.9	168.9	248	248	226.9	226.9	290.2	261.0	265.4	
Ireland	62	61.4	68.4	64.9	60	59.5	62.9	57.7	58.4	58.1	55.0	
Israel	80.2	82.4	95.8	104.5	86.2	83.8	100.2	103.8	84.7	99.6	106.9	
Italy	515	514.7	645.7	694.8	441	441.1	542.2	566.7	415.5	573.5	554.4	
Jamaica	15.4	15.8	11.5	12.0	15.4	15.7	12.3	12.2	15.7	11.1	11.1	
Japan	1,310	1,314.1	1,707.7	1,647.7	1,320	1,322.8	1,724.0	1,614.7	1,204.1	1,579.4	1,493.5	
Jordan	29	26.3	33.8	32.8	29.5	32.8	34.1	39.7	34.3	32.2	42.6	
Kazakhstan	321	320.9	253.8	210.7	361	360.6	277.9	299.7	390.4	236.5	283.9	
Kenya	62.3	59.7	57.4	56.1	68.9	67.8	69.1	68.7	72.8	69.3	74.2	
Kuwait	124	120.0	98.2	93.2	136	131.3	112.2	112.2	146.0	113.8	123.4	
Kyrgyzstan	14.1	13.8	13.8	18.0	18.5	19.2	18.3	23.9	22.5	18.8	27.7	
Laos	12	13.4	9.5	11.8	13.2	20.2	10.8	19.5	44.6	25.6	51.3	
Latvia	12.4	12.4	17.2	17.5	11.3	11.3	16.8	16.8	12.5	19.1	19.2	
Lebanon	24.8	24.8	33.1	33.1	21.7	21.7	32.1	32.1	21.7	37.3	32.1	
Lesotho	4.6	4.6	5.9	5.9	4.8	4.8	6.0	6.0	5.1	5.6	6.4	
Liberia	3.2	3.2	2.1	2.0	4.1	4.1	3.0	2.1	4.6	2.9	2.1	
Libya	96.4	96.4	37.9	37.9	69.3	69.3	33.9	33.9	64.5	27.0	31.5	
Liechtenstein	0.2	0.2	0.5	0.5	0.2	0.2	0.5	0.5	0.2	0.4	0.5	
Lithuania	21	21.0	29.2	27.5	20.5	20.5	28.3	29.3	20.1	31.9	30.3	
Luxembourg	12.2	12.2	22.0	21.1	10.3	10.3	20.9	22.5	10.8	22.7	23.7	
Macao SAR	1.6	1.6	8.1	7.8	1.7	1.7	7.9	8.9	3.2	8.0	9.8	
Madagascar	31.3	31.1	27.2	26.8	33	33.1	29.2	29.2	33.3	29.5	31.0	
Malawi	9.3	9.1	10.4	10.3	11.3	11.1	11.5	11.6	13.3	11.9	13.4	
Malaysia	340	313.5	212.5	243.0	363	341.3	255.4	298.0	364.5	228.7	311.0	
Maldives	1.2	1.2	1.9	1.7	1.6	1.6	2.3	1.9	1.7	2.4	2.1	
Mali	54	54	52.7	52.7	61.6	61.6	58.7	58.7	75.3	58.5	71.7	
Malta	3	3.0	4.4	6.0	2.3	2.3	3.5	6.6	2.2	4.7	7.1	
Mauritania	8.4	8.4	6.3	6.3	9.9	9.9	8.1	8.1	11.5	10.2	9.4	
Mauritius	6.7	6.7	9.2	7.9	7.5	7.3	10.8	8.8	8.0	11.1	9.6	
Mexico	686	641.8	631.2	644.2	691	677.0	650.7	672.8	643.6	568.5	603.8	
Monaco	0.2	0.2	0.4	0.4	0.1	0.1	0.5	0.4	0.1	0.4	0.4	
Mongolia	26	27.2	16.5	22.0	39.7	45.8	24.2	35.9	92.0	48.0	83.9	
Montenegro	5.0	5.0	6.4	6.4	4.7	4.7	6.2	6.2	4.9	7.3	6.6	
Morocco	92	95.8	86.1	98.0	91.9	92.6	98.6	105.7	115.2	103.1	121.9	
Mozambique	32	31.0	32.4	36.2	42.4	39.2	39.7	44.0	43.8	37.0	50.2	
Myanmar	50	50	89.4	89.4	59.6	59.6	103.7	103.7	82.6	102.8	143.7	
Nepal	35.5	35.3	30.7	32.6	40.2	38.4	34.9	36.6	49.0	53.7	61.7	
Netherlands	214	214.1	255.4	228.5	196	196.4	233.9	197.0	181.9	225.3	187.4	
New Zealand	77.3	77.3	71.0	66.7	79.5	79.4	74.0	69.9	82.2	75.0	73.1	
Nicaragua	14.8	14.7	13.7	14.3	18.7	18.3	17.1	17.0	19.1	15.5	17.6	
Niger	19.2	19.2	18.3	18.3	24.6	24.6	22.3	22.3	29.7	19.8	27.0	
Nigeria	302	322.1	268.6	261.8	330	333.5	305.3	298.8	366.4	322.9	321.3	
Norway	55.6	55.7	87.6	66.8	54.5	54.6	88.8	65.0	50.6	83.2	62.3	
Oman	73.6	68.7	46.0	51.9	97.6	87.5	55.3	80.6	98.2	47.5	79.3	

GHG emissions : 2010, 2015 and 2019 (in Mt CO2e) - 3/3

Country	2010				2015				2019			
	Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions		Territorial emissions		Footprint emissions	
	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID	PRIMAP	WID	EORA	WID
Pakistan	365	353.1	306.1	315.7	407	398.2	344.8	357.2		496.3	450.7	508.0
Panama	14.1	14.1	17.2	19.1	15.7	16.0	19.4	21.3		17.7	20.3	23.2
Papua New Guinea	12.1	12.1	10.3	10.3	14.7	14.7	12.8	12.8		22.7	12.5	19.7
Paraguay	46.5	46.0	40.3	40.7	53.3	53.0	48.9	48.6		56.3	53.0	59.1
Peru	101	97.8	102.2	97.4	110	90.9	117.1	99.7		97.5	106.7	105.4
Philippines	177	174.3	147.5	162.3	211	209.1	175.5	198.2		249.1	180.1	237.1
Poland	413	413.6	404.2	392.7	391	393.1	384.7	362.0		395.2	398.4	357.9
Portugal	69	69.0	94.8	85.2	67.9	67.9	85.3	74.9		63.7	81.2	70.8
Qatar	132	124.9	105.4	79.5	199	172.8	153.0	111.4		189.4	128.6	119.8
South Korea	673	637.0	638.6	723.4	710	662.4	671.2	744.4		678.7	697.5	760.0
Moldova	14.7	14.7	2.8	2.8	14.5	14.5	4.5	4.5		17.4	10.1	5.4
Romania	125	124.9	131.7	125.9	117	117.0	124.8	112.1		114.1	134.3	111.5
Russia	2,080	2,062.9	1,828.3	1,715.0	2,210	2,102.9	1,905.0	1,784.6		2,204.3	1,904.8	1,804.9
Rwanda	6.3	6.3	7.2	6.5	7.3	7.3	8.6	7.6		7.7	9.0	9.1
Samoa	0.4	0.4	0.6	0.6	0.5	0.5	0.7	0.6		0.7	0.8	0.7
San Marino	0.3	0.3	1.0	1.0	0.2	0.2	1.4	1.1		0.2	1.3	1.1
Sao Tome and Principe	0.2	0.2	0.3	0.3	0.2	0.2	0.4	0.3		0.2	0.4	0.4
Saudi Arabia	576	625.7	548.0	605.9	669	769.4	669.9	792.8		716.4	517.7	712.5
Senegal	22.3	22.2	21.9	21.8	23.4	24.8	23.6	24.2		26.0	24.0	24.9
Serbia	66.6	66.6	74.2	74.2	70.8	70.8	82.2	82.2		78.2	101.1	90.8
Seychelles	0.5	0.5	1.0	1.1	0.6	0.6	1.1	1.2		0.7	1.3	1.3
Sierra Leone	5.9	5.9	5.1	5.1	8.2	8.2	6.8	6.8		8.6	6.9	7.1
Singapore	55	59.9	166.9	147.0	87	65.6	188.6	147.5		42.0	168.1	145.1
Slovakia	46.5	46.5	63.3	60.0	42	42.0	58.4	57.2		40.1	60.5	54.7
Slovenia	19.6	19.6	21.7	24.7	16.8	16.8	19.2	21.6		16.6	20.7	21.1
Somalia	27.6	27.6	22.8	22.8	29.1	29.1	24.5	24.5		30.4	25.6	25.5
South Africa	536	555.9	441.1	401.6	535	543.6	439.4	394.3		573.9	470.5	416.4
South Sudan	48.2	48.2	0.2	8.5	52.6	52.6	0.2	9.6		57.3	0.2	9.9
Spain	360	359.7	506.0	449.8	339	338.7	446.6	377.9		312.7	438.8	356.2
Sri Lanka	24.8	24.3	27.9	31.2	35	31.0	38.8	40.4		36.3	37.7	48.3
Sudan	101	101	0.2	30.8	107	107	0.2	34.7		113.7	0.2	38.2
Suriname	3.4	3.4	3.4	3.2	3.5	3.5	3.7	3.1		3.8	3.2	3.0
Swaziland	2.6	2.6	5.9	5.7	2.7	2.7	5.7	6.2		2.7	5.4	6.6
Sweden	64.8	64.8	110.4	106.2	54.1	54.1	102.9	90.0		53.3	109.9	92.7
Switzerland	54.7	54.6	127.0	133.2	48.4	48.4	124.5	143.9		47.3	121.5	147.2
Syria	83	83	71.9	71.9	60.9	60.9	55.3	55.3		57.9	59.1	52.6
Taiwan	301	287.8	179.4	290.6	297	284.2	170.8	274.1		290.5	174.2	281.9
Tajikistan	9.7	9.7	10.3	10.3	11.5	11.5	13.6	13.6		12.4	19.5	14.7
Thailand	419	386.4	335.9	338.6	453	401.3	369.0	362.9		416.4	394.8	371.0
TFYR Macedonia	13.8	13.8	13.0	13.0	12.7	12.7	12.3	12.3		12.8	13.9	12.4
Togo	11.4	10.6	10.4	11.9	13.6	12.2	12.3	15.9		12.9	11.0	17.2
Trinidad and Tobago	80.3	63.6	30.1	28.3	71.3	59.7	38.1	30.5		57.2	28.1	32.4
Tunisia	39.8	39.2	39.3	36.2	36.1	40.9	37.5	39.1		44.0	38.5	39.9
Turkey	404	403.4	467.3	462.0	480	477.3	546.0	521.7		508.5	512.3	525.5
Turkmenistan	75.9	75.9	66.4	66.4	104	104	85.8	85.8		108.8	89.3	89.7
Uganda	40.3	39.9	41.0	40.0	46.6	45.8	45.9	44.3		51.6	46.5	50.4
Ukraine	408	408.1	331.1	324.9	320	319.9	284.7	270.3		327.3	388.8	293.2
UAE	205	201.0	232.4	240.1	253	286.7	279.0	291.2		242.3	237.6	273.0
UK	616	615.0	907.2	842.9	513	512.5	799.9	717.1		453.6	839.5	661.4
Tanzania	74.7	74.6	68.2	68.5	93.3	91.1	82.6	87.6		94.2	75.5	94.7
USA	7,070	6,988.1	8,083.5	7,425.8	6,770	6,682.4	7,629.2	7,093.2		6,502.4	7,903.6	6,956.4
Uruguay	33.8	33.8	33.9	33.7	34.8	34.7	37.8	36.2		34.9	39.7	37.3
Uzbekistan	219	219	181.0	181.0	207	207	194.1	194.1		211.6	203.1	198.4
Vanuatu	0.6	0.6	0.8	0.8	0.7	0.7	0.9	0.8		1.0	1.0	0.9
Venezuela	278	266.1	234.7	223.3	278	264.9	229.7	252.1		203.1	164.1	186.0
Viet Nam	281	269.1	250.4	253.4	345	319.4	315.2	306.4		412.6	323.4	372.1
Yemen	36.7	36.7	32.7	32.7	40.6	40.6	40.4	40.4		41.0	26.9	40.7
Zambia	34	33.9	30.3	30.3	38.9	38.7	34.3	35.4		39.0	36.0	41.3
Zimbabwe	21.8	21.3	16.0	18.1	25.5	24.5	2.9	14.0		20.8	2.6	12.3



D.15: Haut Conseil pour le climat, imported emissions

C Carbon footprints in France: what do other estimates tell us?

C.1 Introduction

In a context of intense social and political debate on the necessity of reducing carbon emissions around the world, proper measurement of these emissions is becoming more and more crucial. It is now clear that we need to take strong measures to limit Global warming to less than 1.5 degrees and fulfill the commitments made during the Paris agreement. The nature of the measures, need however to be pounded carefully in order to properly address these issues. In particular, the scope of emissions that is considered is central when assessing the effect of unilateral regulation measures. Consumption based accountancy, using input-output tables are increasingly becoming the reference to take into account emissions that are not emitted in a country but are imported to satisfy final demand in this country. This section evaluates the findings of a recent study on the subject by the french high council for climate in a comparative perspective.

C.2 SDES Report

C.2.1 Main Results

In October 2020, the High Council for Climate in France published a report presenting results from the statistical department of the ministry for ecological transition (SDES) on french carbon footprint. They find that in 2018, the french carbon footprint amounted to a total of 749 Mt CO₂e, corresponding to around 11.5 t Co₂e per capita. These confirm previous observations that France is a low emitting country among developed countries (as a comparison, countries such as the United-States, Canada or Australia show levels of emissions above 19.5 t CO₂e/hab in 2012, against 10 t CO₂e/hab in France for this year). France remains however solidly above emerging countries (in 2012, countries such as China, Brazil or Mexico showed values hovering between 6 and 7.2 t CO₂e/hab). The report focuses in particular on french carbon imports. Importantly, it argues that almost half of the total carbon footprint is in fact emitted outside of national territory and is therefore not taken into account in the existing environmental regulation framework. In fact, SDES methodology reveals that while the total french carbon footprint has been decreasing since 2005, total imported emissions have kept increasing throughout the period. Overall, while France performs better than most European countries in terms of domestic carbon emissions, it is average in terms of imported emissions. Results for french imported emissions are summarised in Figure D. 15.

C.2.2 Methodology

Compared with other methodologies for calculating carbon footprints, SDES results are not based on the usual multi-regional input output tables (as opposed to MRIO's such as EORA,WIOD or Exiobase). It does adopt an

input output approach, but it is based on UE inventories rather than multi-regional data bases. This leads to a very solid and precise analysis of transactions with European partners at the cost of some assumptions on transaction with non European countries. Three important hypotheses are made :

- Production structure in non European countries is identical to that of European ones.
- There are no intermediate consumption imports in non European countries
- Sectoral emission intensity in non European country is proportional to European countries (adjusting for national level characteristics)

A second important methodological choice is the projection strategy for more recent years. Having an impact on environmental policies requires measuring carbon footprint on most recent years. However due to the calendar of data publication, the basic methodology only allows for analysis up to four years before date of publication. To this effect, SDES produces "advanced estimates" for more recent years using an extrapolation strategy ⁹.

C.3 Comparing with other frameworks

How do these results compare with what we know from other framework, and in particular from usual MRIO calculations ? For the most part, the SDES methodology confirms existing results on french carbon footprint (Figure D.16). CO₂ trends, which constitute around 75% of total french carbon footprint, are particularly similar during the period. This confirms that environmental input-output tables is a solid methodology to support environmental regulation policies.

There remain however differences between the carbon data that we publish for France and the SDES methodology. In 2015, our estimation shows a total footprint of 8.5 tCO₂e/capita. This is a 2.5 tonne difference between SDES and WID.world. Around 1 tonne of this total can be explained by a difference in CO₂ estimations between GCP and SDES. Until 2013, GCP yields very similar values as Exiobase which is consistently below SDES estimations. The rest of the differences stems from differences between EORA and SDES in terms of other gases estimations (mainly CH₄). Overall, differences are explained by varying estimations for imports with very similar territorial estimations. As of now, we can only formulate hypotheses as to where these differences stem from and recommendations for further enquiries.

We observe that, in Eora, an important part of the observed decrease in imported emissions is due to a decrease in imported emissions from China to France. That is to say that while carbon emissions from other main importers remain stable after 2007, carbon imports from China decrease during the period. No such trend is observed in SDES. Is the gap due to a better treatment of imported emissions by SDES or is EORA more precise? Arguably, data related to French imports are more precise in the SDES estimates than in EORA. But it is not entirely clear whether estimates of non-CO₂ GHG embedded in Chinese exports are better treated in SDES or in EORA. In order to ensure a systematic treatment of countries in the WID.world database (and maintain relative differences between countries), we choose not to correct our non-CO₂ GHG estimates for France. We will revise this if and when we obtain more information about the source of these differences.

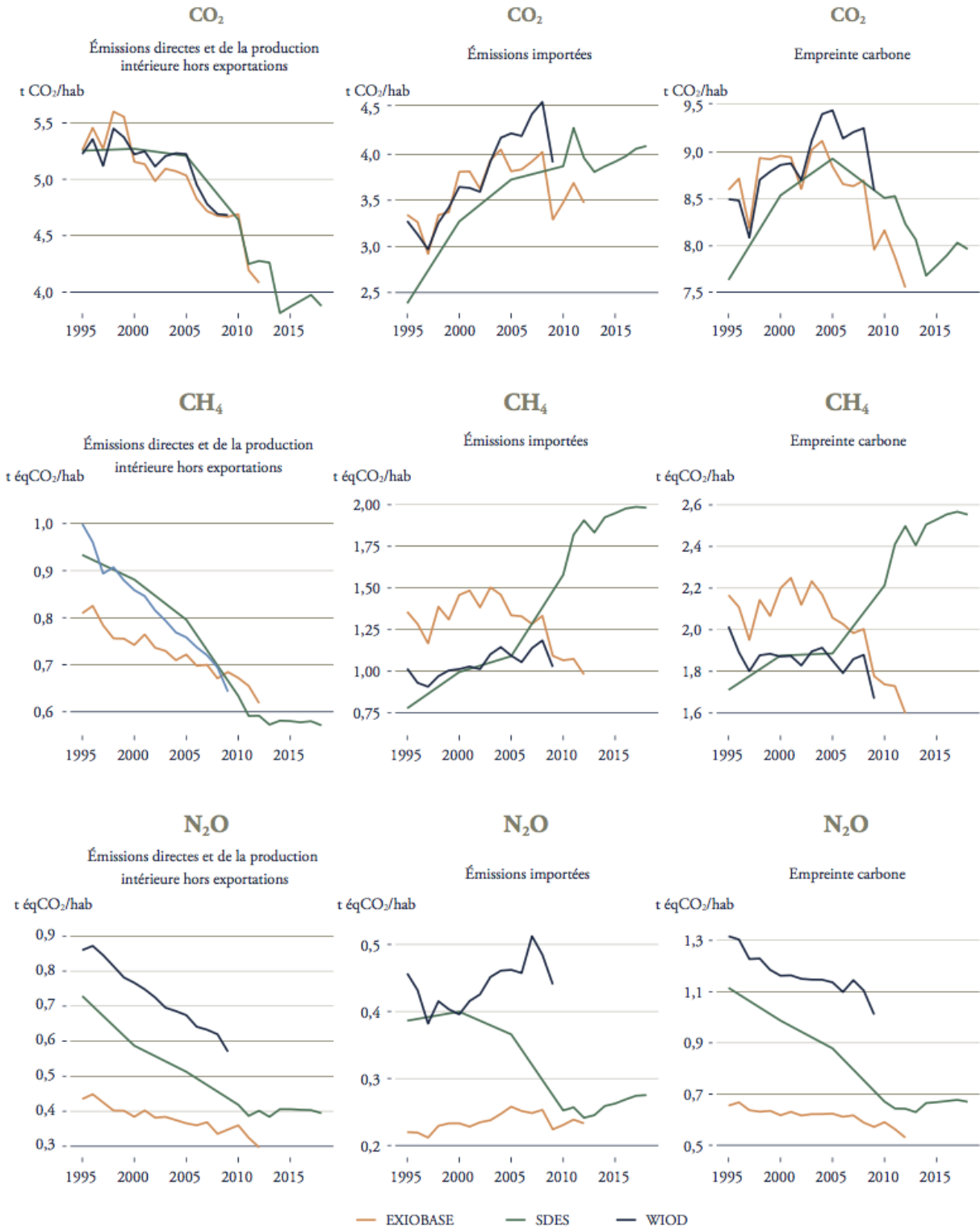
C.4 Way forward

Understanding and discussing differences between frameworks is essential to understand the various components of the French carbon footprint. To continue in this direction, it is useful to follow two directions :

- First, producing estimates from a variety of frameworks will remain necessary, at least for some time. This variety makes it possible for scientific debate to take place, to compare and contrast results.
- Second, differences between databases should be replaced in the broader context of their commonalities. While there are some difference between methodologies, these remain very limited as compared to their points of convergences.

⁹see <https://www.statistiques.developpement-durable.gouv.fr/sites/default/files/2020-01/empreinte-carbone-methodologie-012020.pdf> for more details

Source : Haut conseil pour le climat : "Maitriser l'empreinte carbone de la France"



D.16: French emissions in HCC report

- Third, it is important to continue to seek understanding of the differences between models. The goal is not to reach a unique framework in the near future but to know how different methodological choices produce a variety of results. This can be achieved by developing more links discussions with the various teams involved in IO accounting.

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