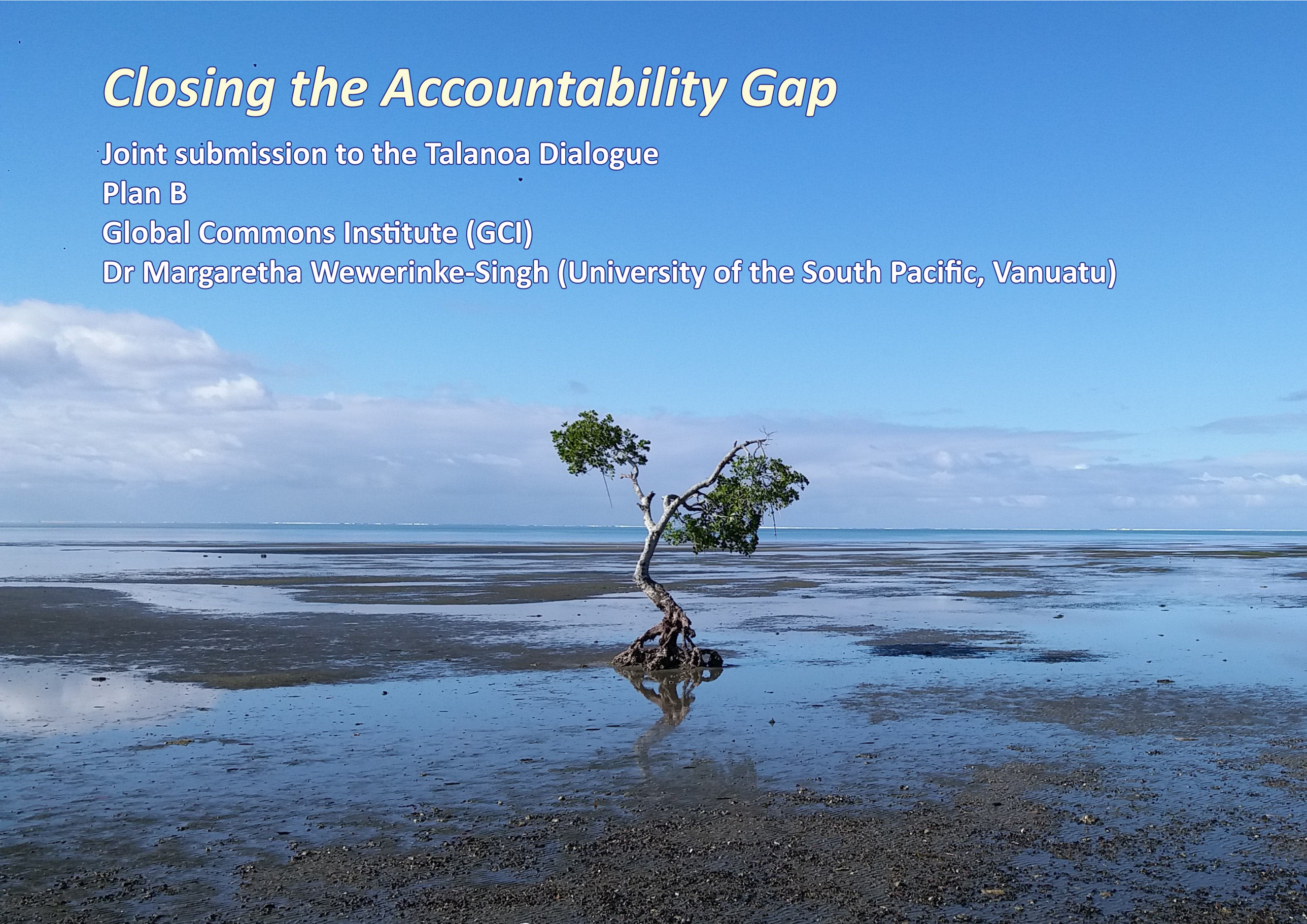
Closing the Accountability Gap

Joint submission to the Talanoa Dialogue

Plan B
Global Commons Institute (GCI)
Dr Margaretha Wewerinke-Singh (University of the South Pacific, Vanuatu)



Joint submission to the Talanoa Dialogue from Plan B, the Global Commons Institute (GCI) & Dr Margaretha Wewerinke-Singh (University of the South Pacific, Vanuatu)

Introduction

This submission combines the Paris Agreement (2015) temperature goal with IPCC AR5 (2014) 'carbon budgets' to provide an integrated assessment of:

1. Where we are now
2. Where we want to go
3. How we get there

We therefore respectfully request that it is published on the Talanoa Dialogue Portal under all three Topics.
In the alternative, if that is not considered appropriate, we suggest that it is published under Topic 3: *"How we get there"*.

In brief, the submission advances a peer-reviewed framework to assist all Party and non-Party stakeholders in:

- Visualising where we are now and where we want to go
- Interrogating the adequacy and equity of NDCs according to clear and consistent principles
- Quantifying financial obligations and entitlements (in terms of both support for mitigation efforts and apportionment of responsibility for the costs of adaptation and loss and damage).

Contact Author: Tim Crosland, tim@planb.earth

1 & 2: Where we are now and where we want to go

All Parties to the UNFCCC recognise the substantial gap between current emissions commitments and goals, and the urgency of closing it:

> *'Emphasising with serious concern the urgent need to address the significant gap between the aggregate effect of Parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels …'.*
> *(Preamble, Paris Decision, 2015).*

Likewise they recognize the existence of a 'finance gap':

> *'Recognising the urgent need to enhance the provision of finance, technology and capacity-building support by developed country Parties, in a predictable manner, to enable enhanced pre-2020 action by developing country Parties …'*
> *(Preamble, Paris Decision, 2015).*

The technical complexity of the subject makes it difficult for policy-makers and civil society to understand the relationship between these global gaps and individual country contributions. Working in co-operation, Plan B, The Global Commons Institute (responsible for the development of Contraction & Convergence), and a legal scholar from the University of the South Pacific have developed a framework, called "The Paris Agreement Implementation Blueprint" ('the Blueprint'), designed to provide all stakeholders with a clear and accessible cognitive map to inform the preparation and evaluation of national commitments.

The Blueprint combines data from the Carbon Dioxide Information Analysis Center (CDIAC) on historic emissions of CO2 with the IPCC Table of 'carbon budgets' below, previously presented in the Synthesis Report of AR5 (Figure 1), and combines it with the widely accepted standard of equal per capita emissions. Figure 2 (page 4 below) sets the global challenge in historic perspective.

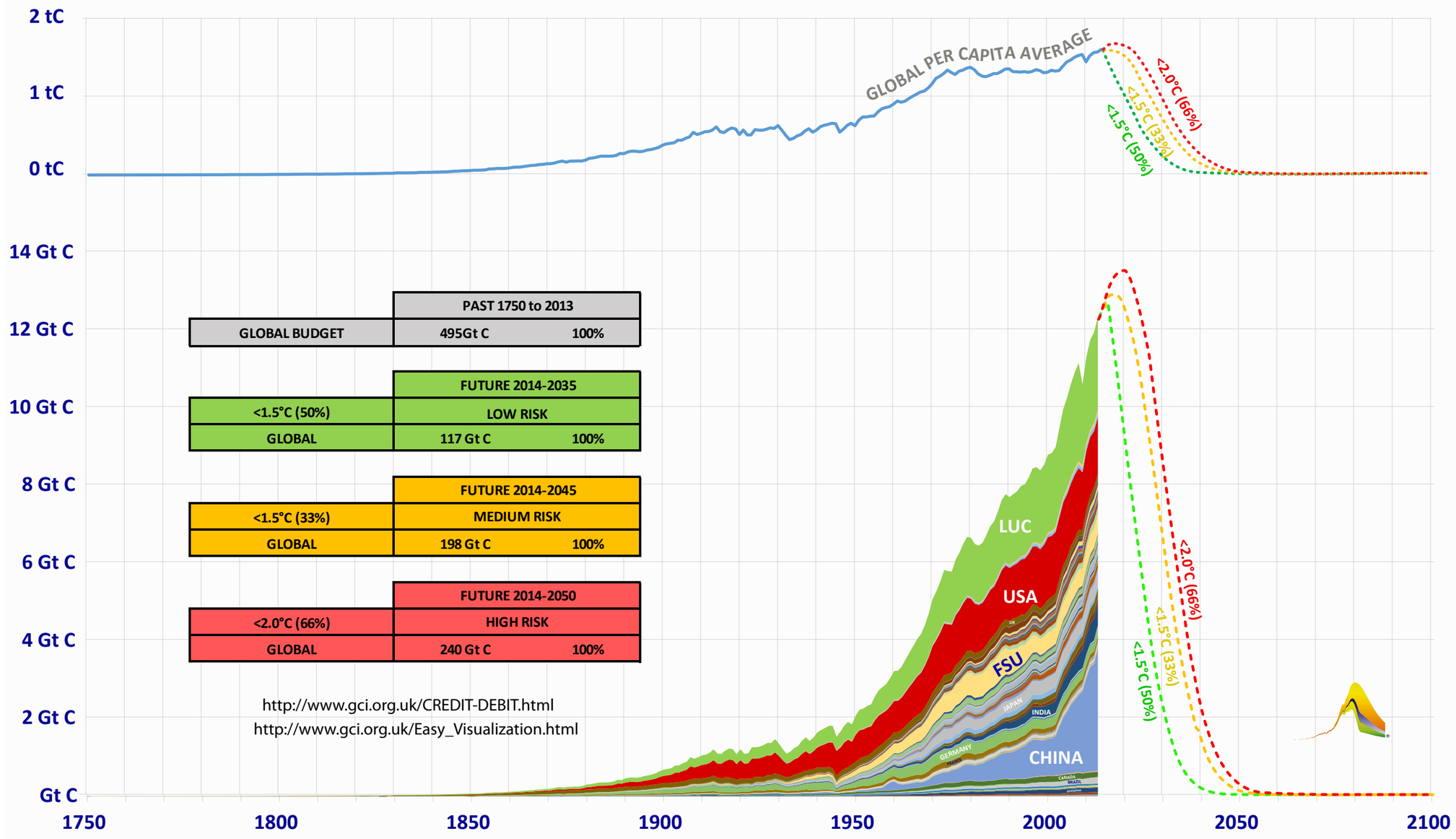
Figure 1

Table 2.2 | Cumulative carbon dioxide (CO_2) emission consistent with limiting warming to less than stated temperature limits at different levels of probability, based on different lines of evidence. *{WGI 12.5.4, WGIII 6}*

Cumulative CO_2 emissions from 1870 in $GtCO_2$									
Net anthropogenic warming [a]	<1.5˚C			<2˚C			<3˚C		
Fraction of simulations meeting goal [b]	66%	50%	33%	66%	50%	33%	66%	50%	33%
Complex models, RCP scenarios only [c]	2250	2250	2550	2900	3000	3300	4200	4500	4850
Simple model, WGIII scenarios [d]	No data	2300 to 2350	2400 to 2950	2550 to 3150	2900 to 3200	2950 to 3800	n.a. [e]	4150 to 5750	5250 to 6000
Cumulative CO_2 emissions from 2011 in $GtCO_2$									
Complex models, RCP scenarios only [c]	400	550	850	1000	1300	1500	2400	2800	3250
Simple model, WGIII scenarios [d]	No data	550 to 600	600 to 1150	750 to 1400	1150 to 1400	1150 to 2050	n.a. [e]	2350 to 4000	3500 to 4250
Total fossil carbon available in 2011 [f]: 3670 to 7100 $GtCO_2$ (reserves) and 31300 to 50050 $GtCO_2$ (resources)									

Figure 2

All countries fossil fuel emissions with global Land Use Change (LUC) 1750-2013 & 3 global carbon contraction rates for 1.5° & 2.0°C (IPCC AR5) 2014-2050



The chart presented in Figure 2 above contextualises the IPCC carbon for:

- 50% probability of <1.5˚C
- 33% probability of <1.5˚C
- 66% probability of <2˚C

The green dotted line represents the IPCC's budget for a 50% probability of <1.5˚C (which the authors consider to be Paris Agreement compliant); the red dotted line, the budget for 66% probability <2˚C (which the authors do not consider compliant). Since the IPCC budgets are expressed in terms of carbon dioxide as from 2011, the following principles of conversion have been applied:

- IPCC budgets CO_2 budgets are converted into carbon only by dividing by 3.664 (ie the standard conversion formula for carbon to carbon dioxide)
- 11 GtC have been deducted for each of the years 2011, 2012 and 2013 (i.e. 33 Gt C in total), representing actual emissions during those years.

For example, the IPCC 'complex models' CO_2 budget for 50% probability <1.5˚C is 550 Gt CO_2, dividing 550 Gt CO_2 by 3.664 produces 150 Gt Carbon only. Subtracting 33 Gt C leaves 117 Gt C. That is the represented by the area under the green dotted line shown in the chart.

The charts do not account for 'negative emission technologies'. That is because:

1. Negative emission technologies remain speculative and contentious
2. Their development at scale depends on human investment, research and development
3. They can not, therefore, simply be assumed as scientific fact.

In simple, visual terms, the chart quickly communicates:

1. Where we are now (i.e. the left hand side of the graphic)
2. Where we want to go (i.e. the right hand side of the graphic).

It should be immediately apparent that Paris Compliance requires urgent and radical emissions reductions, reversing the trend of post-industrial history.

3. How do we get there?

The Paris Agreement adopts a 'bottom up' approach to the realisation of its objectives, in particular by relying on the national contributions of Parties to meeting:

1. The collective temperature goal of limiting warming to a 1.5˚C increase and 'well below' 2˚C, and
2. The collective financial commitment to raise a minimum of $100 billion per annum (understood as a 'floor' rather than a 'threshold')

In order for that approach to succeed, all Parties and civil society need a framework for assessing the adequacy of individual Party commitments to the common goals, according to objective, evidence-based criteria.

Using the internationally recognised standard of equal per capita emissions over time, the Global Commons Institute and Plan B have prepared charts for all Parties (and non-Parties) which may be used to inform the assessment of:

- equitable shares of the remaining carbon budget consistent with the Paris Agreement, contingent on the provision of finance contributions to reflect historic over-use;
- historic 'carbon debits' which may be used to inform the assessment of fair financial contributions to mitigation as well as adaptation costs;
- historic 'carbon credits' which may be used to inform the assessment of entitlement to financial support for mitigation as well as adaptation costs.

Crucially the framework provides a strong and practical incentive to raise climate action ambition: high emissions indicate increased financial obligations; low emissions imply greater financial entitlements.

The methodology has been subject to peer review and can be freely accessed here: The Paris Agreement Implementation Blueprint: a practical guide to bridging the gap between actions and goal and closing the accountability deficit (Part 1), published in Environmental Liability, Law, Policy and Practice, Vol 24, Issue 3, 2016. http://www.lawtext.com/pdfs/sampleArticles/EL243Crosland.pdf

To view a comparison of example countries Debits/Credits,
alongside national shares of emissions within IPCC global carbon budgets,
see below:

Country examples	Carbon **Debit/Credit** according to variance with equal per capita shares of historic emissions 1753-2013	Share of 50% / 1.5˚C 2013-2050	Share of 33% / 1.5˚C 2013-2050	Share of 66% / 2˚C 2013-2060
China	**65.8 Gt C**	22.2 Gt C	37.6 Gt C	45.5 Gt C
Fiji	**40.92 Mt C**	14.37 Mt C	24.31 Mt C	29.4 Mt C
Germany	**15.0 Gt C**	1.33 Gt C	2.3 Gt C	2.7 Gt C
India	**66.32 Gt C**	19.92 Gt C	33.71 Gt C	40.76 Gt C
Norway	**235.0 Mt C**	82.89 Mt C	140.25 Mt C	169.60 Mt C
UK	**15 Gt C**	1.05 Gt C	1.77 Gt C	2.14 Gt C
USA	**78.7 Gt C**	5.04 Gt C	8.5 Gt C	10.3 Gt C
Vanuatu	**11.81 Mt C**	4.13 Mt C	6.99 Mt C	8.54 Mt C

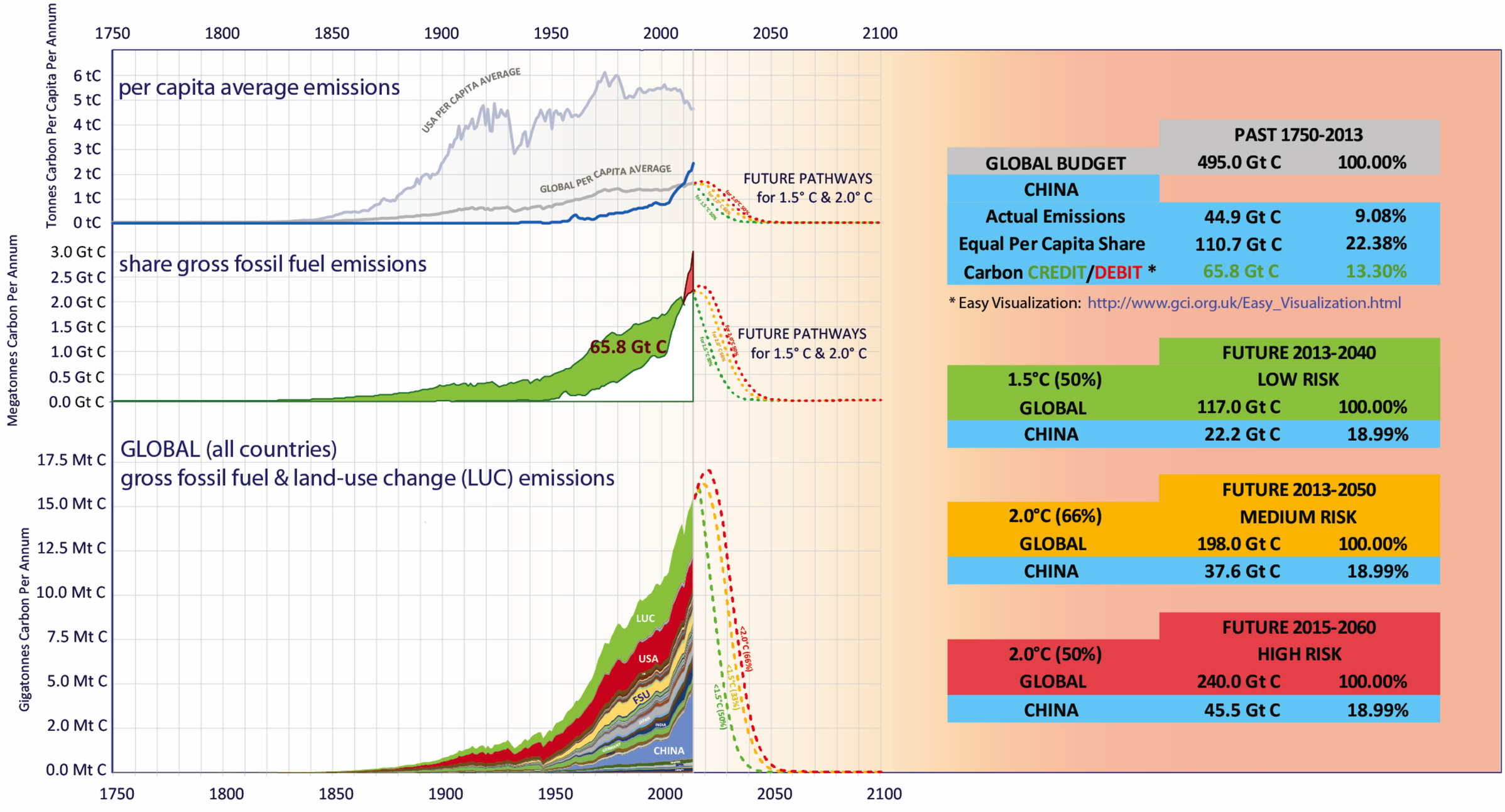
For the individual country charts see pages 8-16 below

CHINA GLOBAL CO_2 EMISSIONS

Per Capita & Gross Emissions over time compared to global average.

Carbon **Credit**/**Debit** accumulated 1750-2013 in Gigatonnes of Carbon (Gt C).

Shares of budgets for 1.5°C & 2.0°C 2014-2050 & INDC.



	PAST 1750-2013	
GLOBAL BUDGET	**495.0 Gt C**	**100.00%**
CHINA		
Actual Emissions	**44.9 Gt C**	**9.08%**
Equal Per Capita Share	**110.7 Gt C**	**22.38%**
Carbon CREDIT/DEBIT *	**65.8 Gt C**	**13.30%**

* Easy Visualization: http://www.gci.org.uk/Easy_Visualization.html

	FUTURE 2013-2040 LOW RISK	
1.5°C (50%)		
GLOBAL	**117.0 Gt C**	**100.00%**
CHINA	**22.2 Gt C**	**18.99%**

	FUTURE 2013-2050 MEDIUM RISK	
2.0°C (66%)		
GLOBAL	**198.0 Gt C**	**100.00%**
CHINA	**37.6 Gt C**	**18.99%**

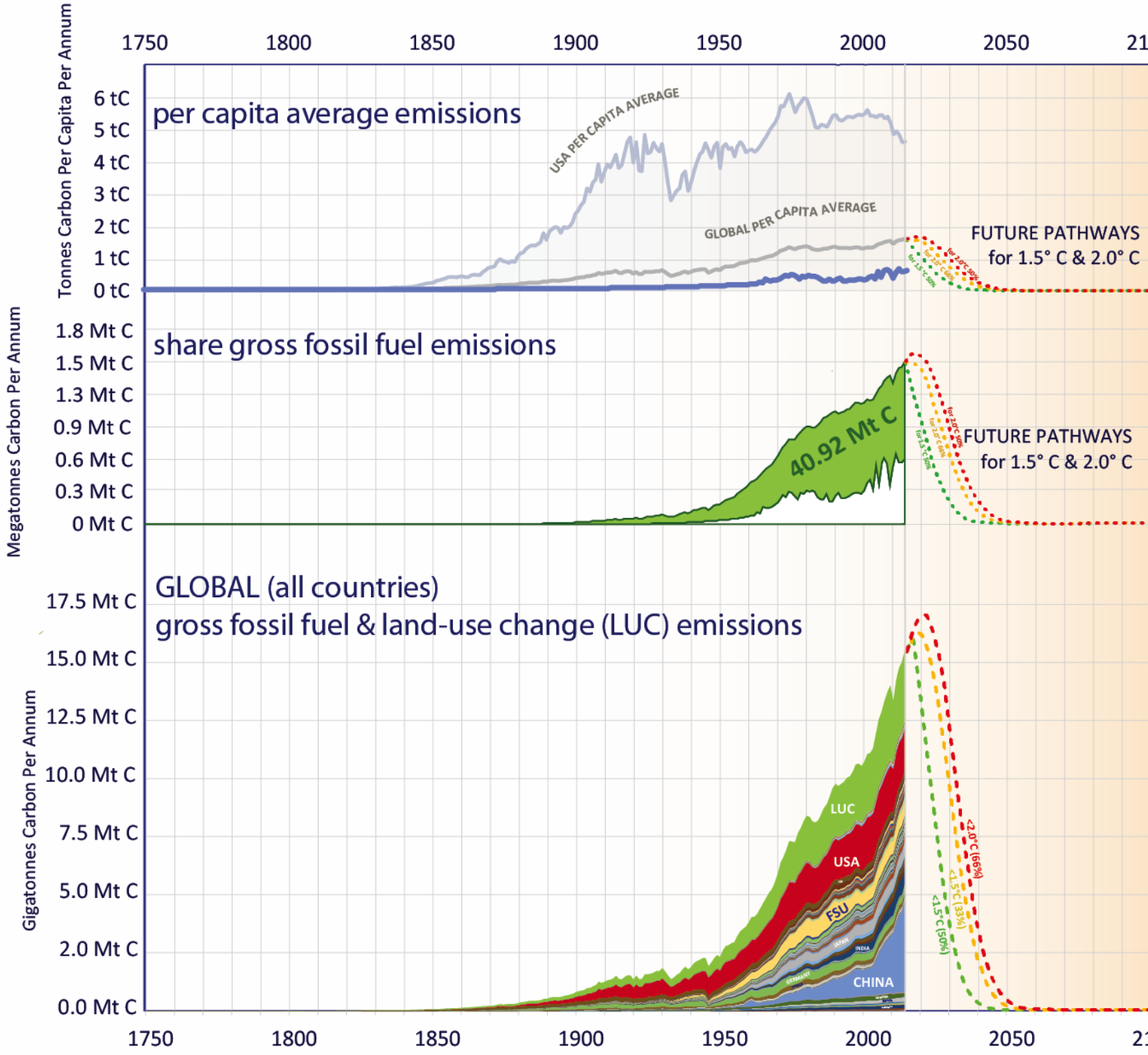
	FUTURE 2015-2060 HIGH RISK	
2.0°C (50%)		
GLOBAL	**240.0 Gt C**	**100.00%**
CHINA	**45.5 Gt C**	**18.99%**

FIJI GLOBAL CO_2 EMISSIONS

Per Capita & Gross Emissions over time compared to global average.

Carbon **Credit**/**Debit** accumulated 1750-2013 in Gigatonnes of Carbon (Gt C).

Shares of budgets for 1.5°C & 2.0°C 2014-2050 & INDC.



	PAST 1750-2013	
GLOBAL BUDGET	**495.0 Gt C**	**100.00%**
FIJI		
Actual Emissions	**17.94 Mt C**	**0.00%**
Equal Per Capita Share	**58.85 Mt C**	**0.01%**
Carbon CREDIT/DEBIT *	**40.92 Mt C**	**0.01%**

* Easy Visualization: http://www.gci.org.uk/Easy_Visualization.html

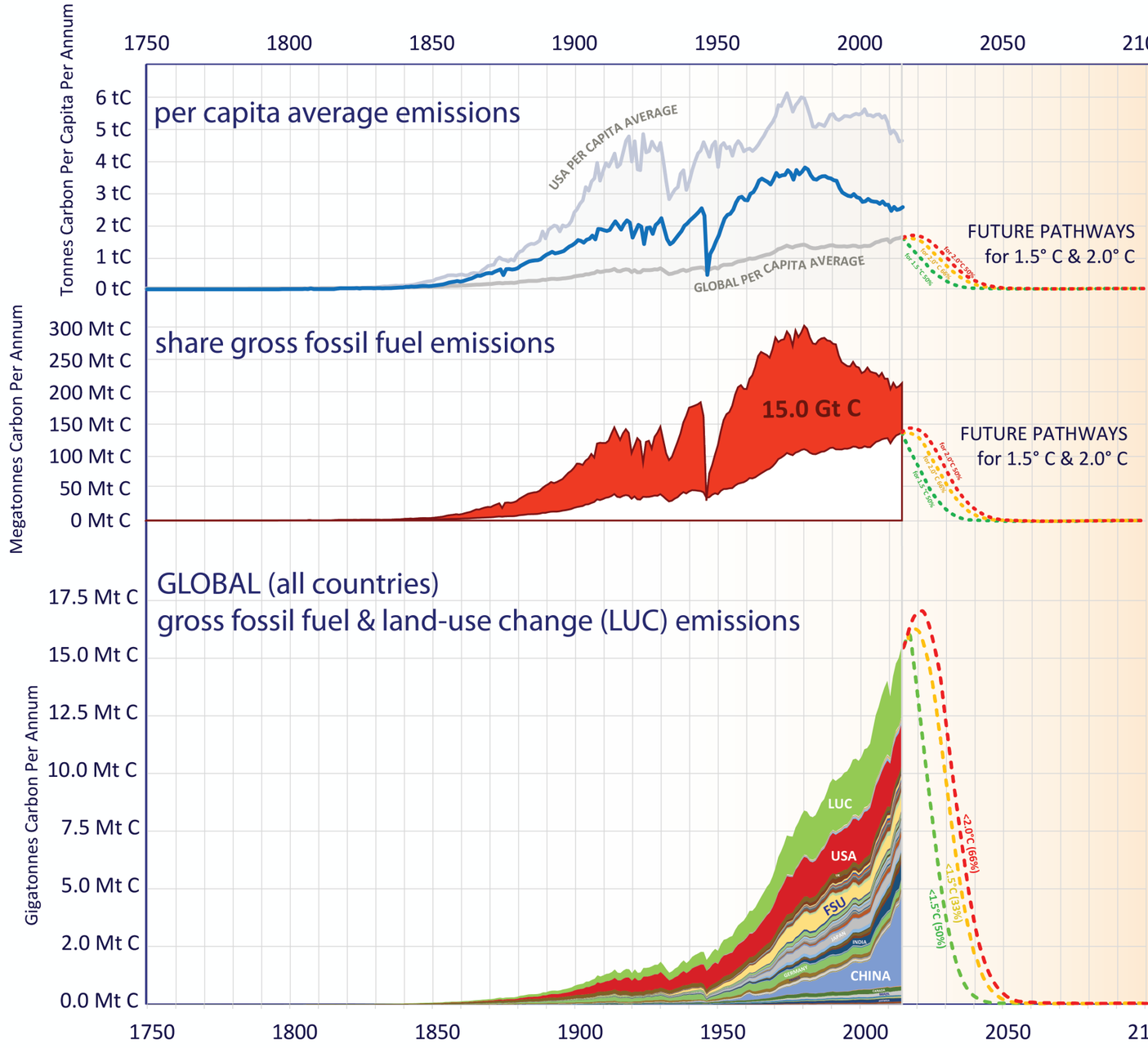
	FUTURE 2013-2040 LOW RISK	
1.5°C (50%)		
GLOBAL	**117.0 Gt C**	**100.00%**
FIJI	**14.37 Mt C**	**0.01%**

	FUTURE 2013-2050 MEDIUM RISK	
2.0°C (66%)		
GLOBAL	**198.0 Gt C**	**100.00%**
FIJI	**24.31 Mt C**	**0.01%**

	FUTURE 2015-2060 HIGH RISK	
2.0°C (50%)		
GLOBAL	**240.0 Gt C**	**100.00%**
FIJI	**29.40 Mt C**	**0.01%**

GERMANY GLOBAL CO_2 EMISSIONS

Per Capita & Gross Emissions over time compared to global average.
Carbon **Credit**/**Debit** accumulated 1750-2013 in Gigatonnes of Carbon (Gt C).
Shares of budgets for 1.5°C & 2.0°C 2014-2050 & INDC.



	PAST 1750-2013	
GLOBAL BUDGET	**495.0 Gt C**	**100.00%**
GERMANY		
Actual Emissions	**23.6 Gt C**	**4.76%**
Equal Per Capita Share	**9.0 Gt C**	**1.83%**
Carbon CREDIT/DEBIT *	**15.0 Gt C**	**2.94%**

* Easy Visualization: http://www.gci.org.uk/Easy_Visualization.html

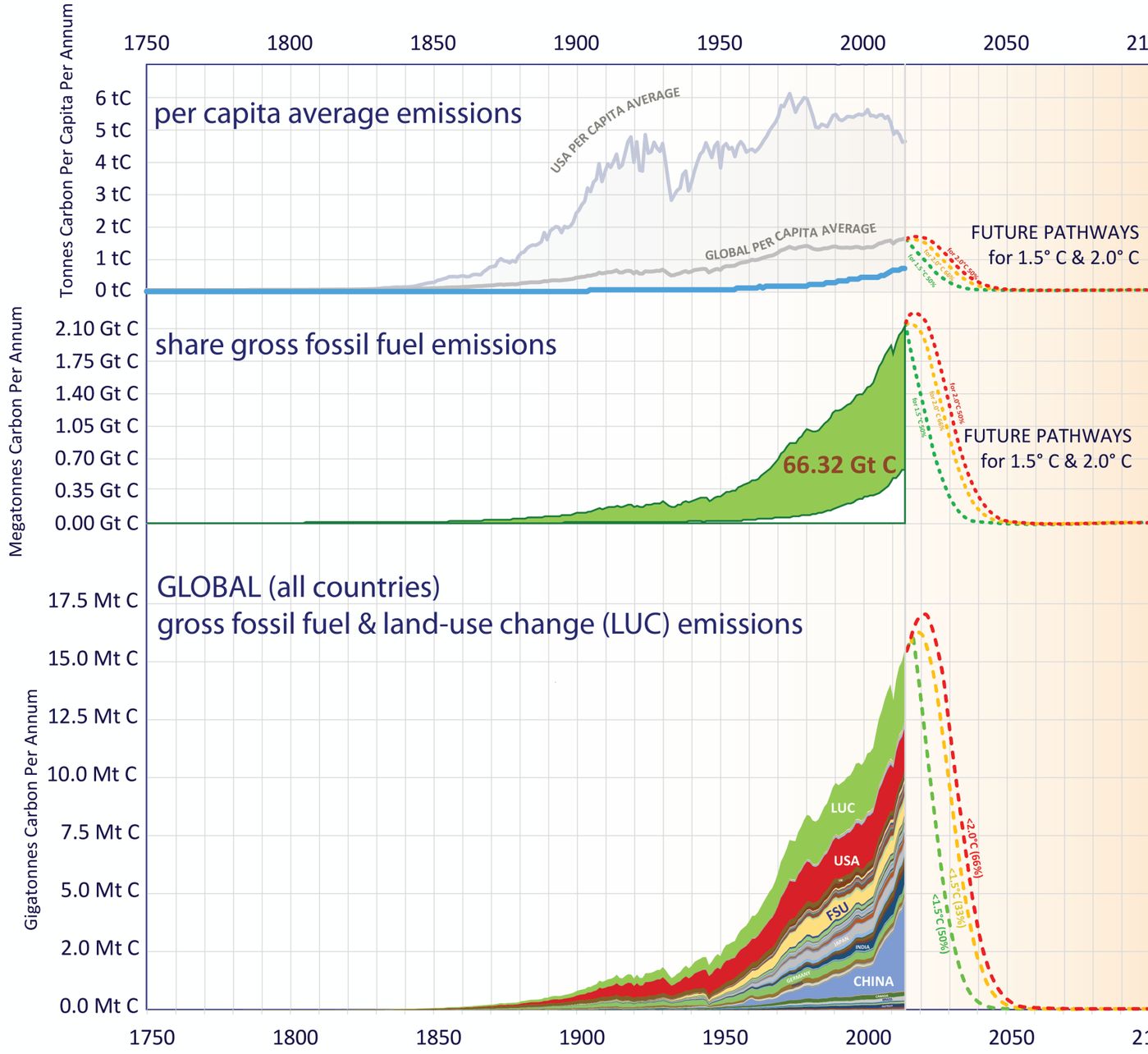
	FUTURE 2013-2040 LOW RISK	
1.5°C (50%)		
GLOBAL	**117.0 Gt C**	**100.00%**
GERMANY	**1.33 Gt C**	**1.14%**

	FUTURE 2013-2050 MEDIUM RISK	
2.0°C (66%)		
GLOBAL	**198.0 Gt C**	**100.00%**
GERMANY	**2.3 Gt C**	**1.14%**

	FUTURE 2015-2060 HIGH RISK	
2.0°C (50%)		
GLOBAL	**240.0 Gt C**	**100.00%**
GERMANY	**2.7 Gt C**	**1.14%**

INDIA GLOBAL CO_2 EMISSIONS

Per Capita & Gross Emissions over time compared to global average.
Carbon **Credit**/**Debit** accumulated 1750-2013 in Gigatonnes of Carbon (Gt C).
Shares of budgets for 1.5°C & 2.0°C 2014-2050 & INDC.



	PAST 1750-2013	
GLOBAL BUDGET	**495.0 Gt C**	**100.00%**
INDIA		
Actual Emissions	**10.87 Gt C**	**2.20%**
Equal Per Capita Share	**77.19 Gt C**	**15.60%**
Carbon CREDIT/DEBIT *	**66.32 Gt C**	**13.41%**

* Easy Visualization: http://www.gci.org.uk/Easy_Visualization.html

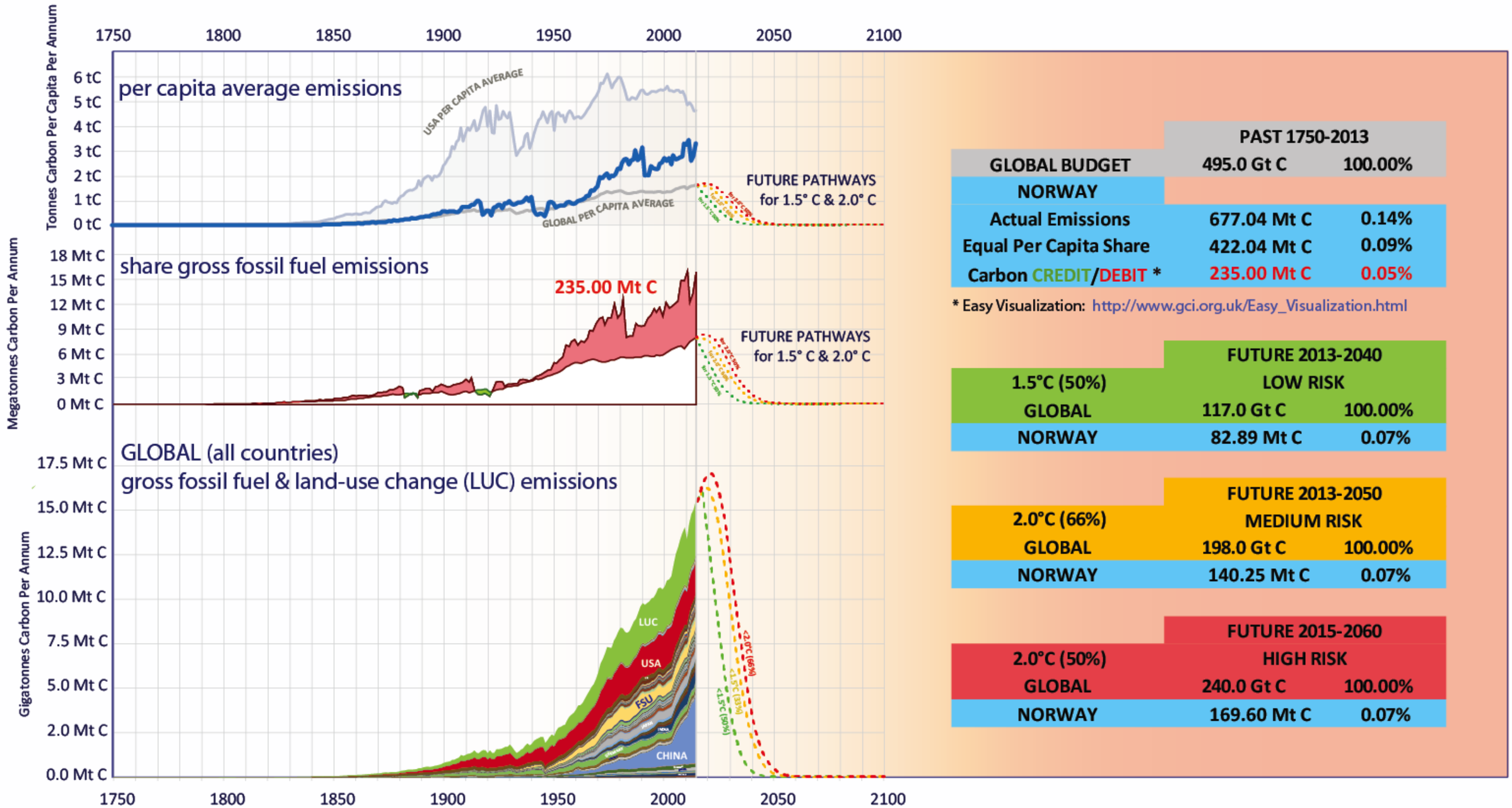
	FUTURE 2013-2040 LOW RISK	
1.5°C (50%)		
GLOBAL	**117.0 Gt C**	**100.00%**
INDIA	**19.92 Gt C**	**17.02%**

	FUTURE 2013-2050 MEDIUM RISK	
2.0°C (66%)		
GLOBAL	**198.0 Gt C**	**100.00%**
INDIA	**33.71 Gt C**	**17.02%**

	FUTURE 2015-2060 HIGH RISK	
2.0°C (50%)		
GLOBAL	**240.0 Gt C**	**100.00%**
INDIA	**40.76 Gt C**	**17.02%**

NORWAY GLOBAL CO_2 EMISSIONS

Per Capita & Gross Emissions over time compared to global average.
Carbon **Credit**/**Debit** accumulated 1750-2013 in Gigatonnes of Carbon (Gt C).
Shares of budgets for 1.5°C & 2.0°C 2014-2050 & INDC.



	PAST 1750-2013	
GLOBAL BUDGET	495.0 Gt C	100.00%
NORWAY		
Actual Emissions	677.04 Mt C	0.14%
Equal Per Capita Share	422.04 Mt C	0.09%
Carbon CREDIT/DEBIT *	235.00 Mt C	0.05%

* Easy Visualization: http://www.gci.org.uk/Easy_Visualization.html

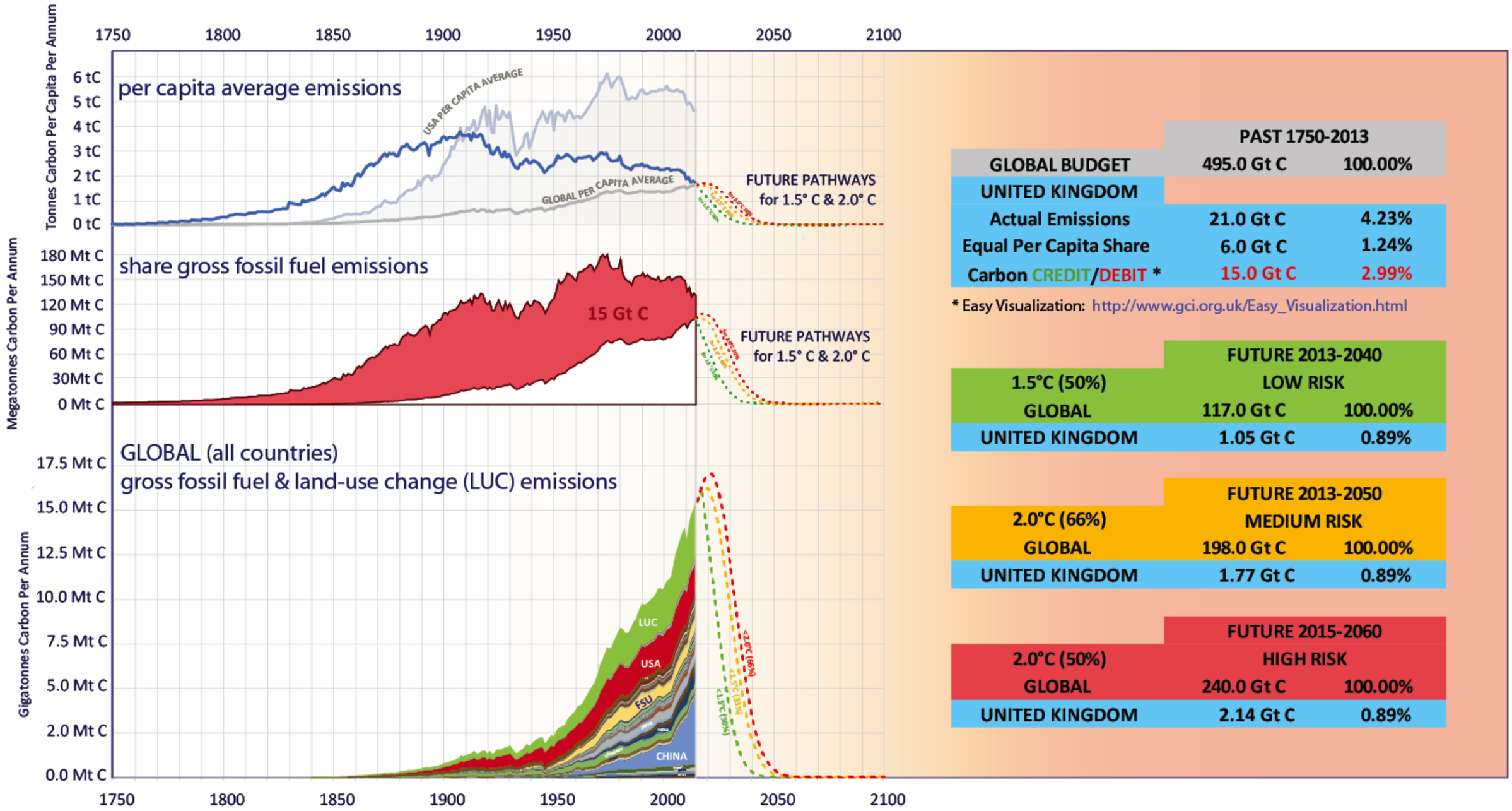
	FUTURE 2013-2040 LOW RISK	
1.5°C (50%) GLOBAL	117.0 Gt C	100.00%
NORWAY	82.89 Mt C	0.07%

	FUTURE 2013-2050 MEDIUM RISK	
2.0°C (66%) GLOBAL	198.0 Gt C	100.00%
NORWAY	140.25 Mt C	0.07%

	FUTURE 2015-2060 HIGH RISK	
2.0°C (50%) GLOBAL	240.0 Gt C	100.00%
NORWAY	169.60 Mt C	0.07%

UNITED KINGDOM GLOBAL CO_2 EMISSIONS

Per Capita & Gross Emissions over time compared to global average.
Carbon **Credit**/**Debit** accumulated 1750-2013 in Gigatonnes of Carbon (Gt C).
Shares of budgets for 1.5°C & 2.0°C 2014-2050 & INDC.



	PAST 1750-2013	
GLOBAL BUDGET	495.0 Gt C	100.00%
UNITED KINGDOM		
Actual Emissions	21.0 Gt C	4.23%
Equal Per Capita Share	6.0 Gt C	1.24%
Carbon CREDIT/DEBIT *	15.0 Gt C	2.99%

* Easy Visualization: http://www.gci.org.uk/Easy_Visualization.html

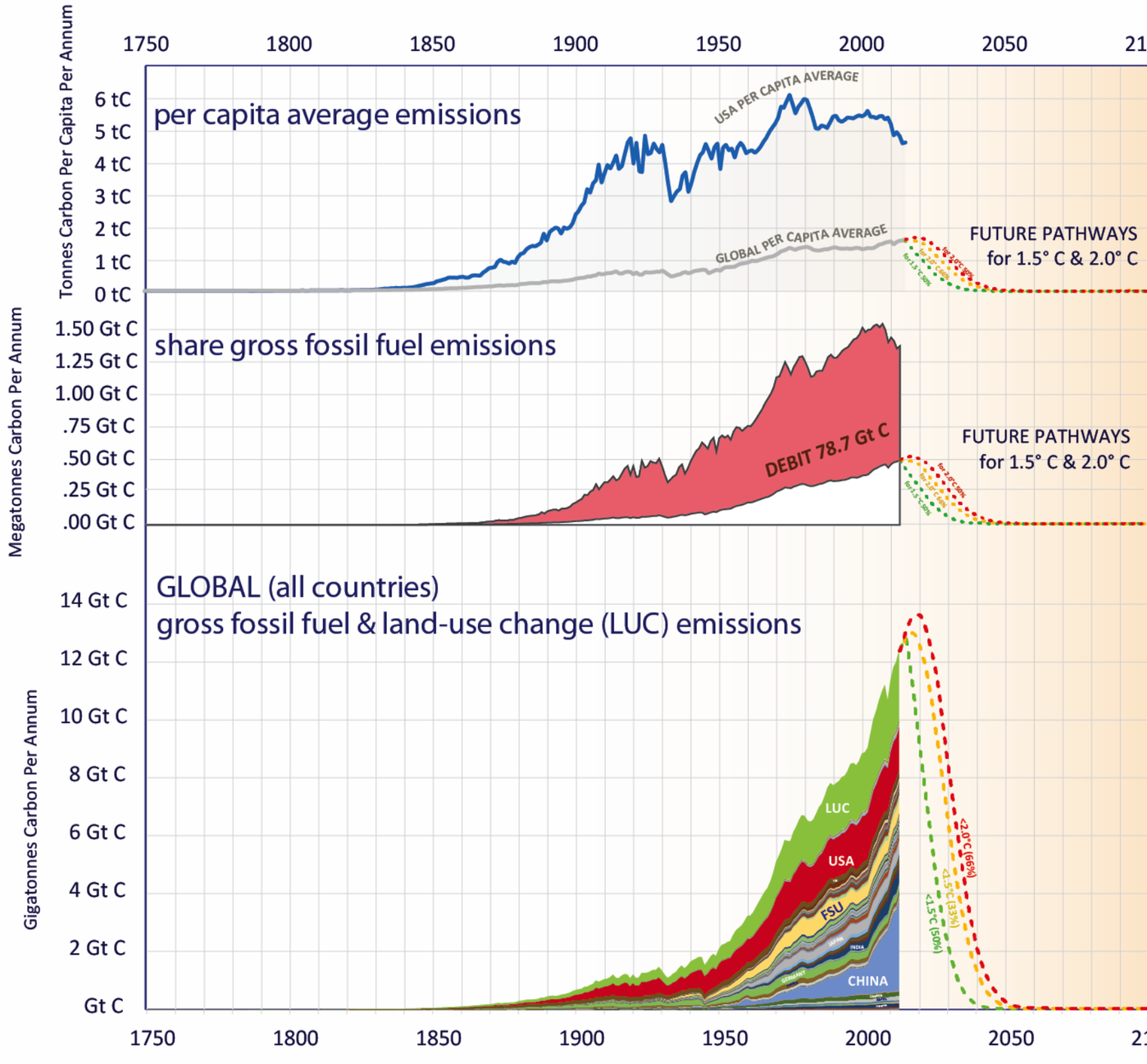
	FUTURE 2013-2040 LOW RISK	
1.5°C (50%) GLOBAL	117.0 Gt C	100.00%
UNITED KINGDOM	1.05 Gt C	0.89%

	FUTURE 2013-2050 MEDIUM RISK	
2.0°C (66%) GLOBAL	198.0 Gt C	100.00%
UNITED KINGDOM	1.77 Gt C	0.89%

	FUTURE 2015-2060 HIGH RISK	
2.0°C (50%) GLOBAL	240.0 Gt C	100.00%
UNITED KINGDOM	2.14 Gt C	0.89%

UNITED STATES & GLOBAL CO_2 EMISSIONS

Per Capita & Gross Emissions over time compared to global average.
Carbon **Credit**/**Debit** accumulated 1750-2013 in Gigatonnes of Carbon (Gt C).
Shares of budgets for 1.5°C & 2.0°C 2014-2050 & INDC.



	PAST 1750 to 2013	
GLOBAL BUDGET	**495 Gt C**	**100%**
USA		
Actual Emissions	**102.7 Gt C**	**20.75%**
Equal Per Capita Share	**24.0 Gt C**	**4.84%**
Carbon CREDIT/DEBIT	**-78.7 Gt C**	**-15.91%**

CREDIT/DEBIT Calculation Method http://www.gci.org.uk/Easy_Visualization.html

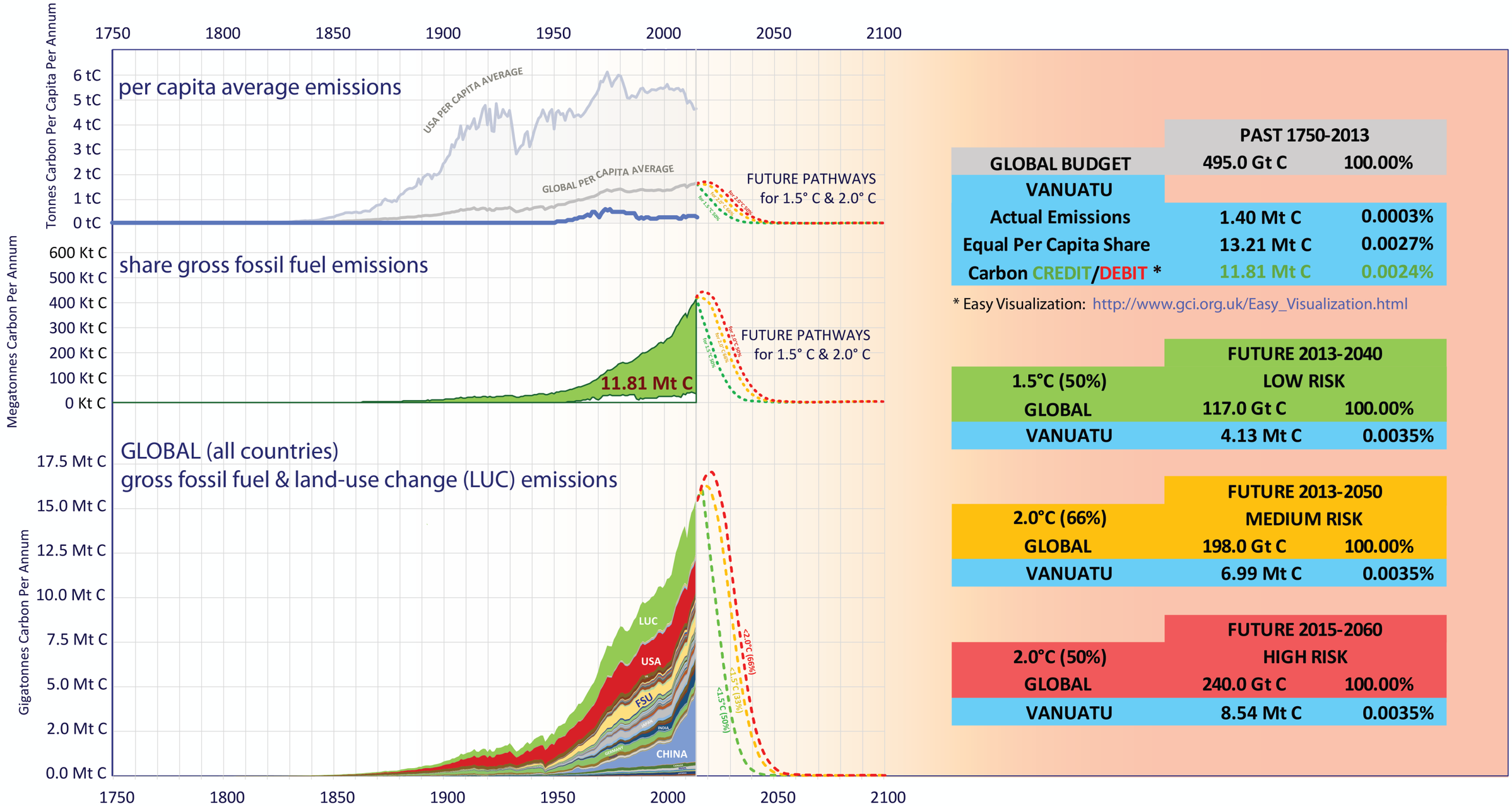
	FUTURE 2014-2040 LOW RISK	
<1.5°C (50%) GLOBAL	**117.1 Gt C**	**100%**
USA	**5.04 Gt C**	**4.30%**

	FUTURE 2014-2050 MEDIUM RISK	
<1.5°C (33%) GLOBAL	**198.1 Gt C**	**100%**
USA	**8.5 Gt C**	**4.30%**

	FUTURE 2014-2060 HIGH RISK	
<2.0°C (66%) GLOBAL	**239.6 Gt C**	**100%**
USA	**10.3 Gt C**	**4.30%**

VANUATU GLOBAL CO_2 EMISSIONS

Per Capita & Gross Emissions over time compared to global average.
Carbon **Credit**/**Debit** accumulated 1750-2013 in Gigatonnes of Carbon (Gt C).
Shares of budgets for 1.5°C & 2.0°C 2014-2050 & INDC.



	PAST 1750-2013	
GLOBAL BUDGET	**495.0 Gt C**	**100.00%**
VANUATU		
Actual Emissions	**1.40 Mt C**	**0.0003%**
Equal Per Capita Share	**13.21 Mt C**	**0.0027%**
Carbon CREDIT/DEBIT *	**11.81 Mt C**	**0.0024%**

* Easy Visualization: http://www.gci.org.uk/Easy_Visualization.html

	FUTURE 2013-2040 LOW RISK	
1.5°C (50%)		
GLOBAL	**117.0 Gt C**	**100.00%**
VANUATU	**4.13 Mt C**	**0.0035%**

	FUTURE 2013-2050 MEDIUM RISK	
2.0°C (66%)		
GLOBAL	**198.0 Gt C**	**100.00%**
VANUATU	**6.99 Mt C**	**0.0035%**

	FUTURE 2015-2060 HIGH RISK	
2.0°C (50%)		
GLOBAL	**240.0 Gt C**	**100.00%**
VANUATU	**8.54 Mt C**	**0.0035%**

Conclusion

The country charts are not intended to be prescriptive. Rather they aim to support a bottom-up approach to realisation of Paris Agreement objectives, by providing a clear and consistent framework for assessing the adequacy of national commitments in terms of the collective goal.

The framework supports one of the key elements of the agreement: the re-evaluation mechanism for increasing ambition. It also supports an integrated assessment of the three topics of the Talanoa Dialogue:

1. **'Where are we now'**: the left-hand side of the global graphic, which illustrates the historic trend of rising emissions
2. **'Where we want to go'**: the right-hand side of the global graphic, which illustrates the urgent and radical action necessary to realise the objectives of the Paris Agreement

3. **'How we get there'**: a clear and objective framework to assist Parties in determining the national contributions (in terms of both finance and emissions reductions), so as to bridge both the finance and the emissions gaps.

Charts for all countries can be accessed here: http://www.gci.org.uk/CREDIT-DEBIT.html

Plan B is a Charitable Incorporated Organisation (CIO), Registered Charity Number 1167953
www.planb.earth 62 Sutherland Square, London SE17 3EL