

Demilitarization for Deep Decarbonization:

Reducing Militarism and Military Expenditures to Invest in the UN Green Climate Fund
and to Create Low-Carbon Economies and Resilient Communities

Tamara Lorincz

DRAFT WORKING PAPER



September 2014

General Inquiries: mailbox@ipb.org

International Peace Bureau

41 rue de Zurich
1201 Geneva
Switzerland
Tel : +41 22 731 64 29



Disclaimer: This is a draft working paper containing preliminary research, analysis, and recommendations. It is prepared in order to stimulate discussion and critical feedback on the nexus of climate change, militarism and peace. It will be published in a final form in a few weeks, and the content may be revised.

Dedication: To Seymour Melman (December 30, 1917 – December 16, 2004), Professor Emeritus of industrial engineering at Columbia University (NY) who, for fifty years, advocated for disarmament, economic conversion and a peace economy.

Table of Contents

| | |
|---|----|
| List of Figures and Tables..... | 4 |
| List of Acronyms..... | 5 |
| Executive Summary..... | 6 |
| 1.0 Introduction..... | 9 |
| 2.0 Climate Change and the Need for Deep Decarbonization..... | 12 |
| 2.1 Latest Assessments on Climate Change | 12 |
| 2.2 The Carbon Budget 2050: We Cannot Waste it on Military Consumption | 15 |
| 2.3 Emerging Issues from the United Nations Environment Programme | 15 |
| 2.4 Upcoming United Nations Climate Summit and Conferences of the Parties | 16 |
| 2.5 United Nations Decade of Sustainable Energy for All 2014-2024 | 17 |
| 2.6 Deep Decarbonization Pathways Project | 17 |
| 3.0 Impacts by the Military on the Environment and Climate Change..... | 18 |
| 3.1 Environmental Impacts of Militarism | 18 |
| 3.2 Fossil Fuel Use by the Military | 20 |
| 3.3 Military Exemptions and the Kyoto Protocol | 22 |
| 3.4 Measuring and Making Sense of Greenhouse Gas Emissions of the Military | 23 |
| 4.0 Financing to Protect the Climate or Prepare for War?..... | 25 |
| 4.1 Costs of Climate Mitigation and Adaptation and the Costs of Inaction | 26 |
| 4.2 Climate Financing | 27 |
| 4.3 The Green Climate Fund | 27 |
| 4.4 The Problem of Global Military Spending and the Prioritization of Warfighting | 28 |
| 5.0 Linking Environment, Peace, Militarism and the Climate Crisis..... | 33 |
| 5.1 Peace, Development and Environmental Protection are Interdependent and Indivisible | 33 |
| 5.2 The Earth Charter, 2000 | 34 |
| 5.3 People's Agreement on Climate Change and the Rights of Mother Earth, 2010 | 35 |
| 5.4 Militarism/War: Elephant in the Living Room Resolution, 2010 | 35 |
| 5.4 Stop the Wars, Stop the Warming Appeal, 2014 | 36 |
| 6.0 Peace and Disarmament Pathways for Deep Decarbonization..... | 36 |
| 6.1 Disarm and Demilitarize for Climate Justice and Sustainable Development | 37 |
| 6.2 Reduce and Re-Direct Military Spending to Climate Finance and Research, Development, Demonstration and Deployment (RDD&D) | 38 |
| 6.3 Mitigate and Adapt, Stop the Industrialization and Militarization of the Arctic | 39 |
| 6.4 Convert Defence Industries to Civilian and Create Green Jobs in Low-Carbon Economies | 40 |
| 6.5 Abolish Nuclear Weapons and Phase Out Nuclear Energy | 41 |

| | |
|---|----|
| 6.6 Integrate Cooperation, Peacebuilding and Nonviolence for Climate-Resilient Communities | 42 |
| 7.0 Uniting the Movements to Amplify the Message..... | 44 |
| 7.1 Join the Global Day of Action and Campaign on Military Spending | 44 |
| 7.2 Reject Weapons Manufacturers’ Greenwash and the Military’s Green Warfighting | 45 |
| 8.0 Recommendations..... | 46 |
| 9.0 Conclusion..... | 47 |
| Annex 1: IPB’s Letter to the Deep Decarbonization Pathways Project, 2014..... | 49 |
| Annex 2: The Earth Charter, 2000..... | 52 |
| Annex 3: Excerpts of The People’s Agreement on Climate Change and the Rights of Mother Earth, 2010... | 57 |
| Annex 4: Militarism/War: Elephant in the Room Resolution, 2010..... | 62 |
| Annex 5: Stop the Wars, Stop the Warming Appeal, 2014..... | 64 |
| References..... | 67 |
| Relevant IPB Publications | 67 |
| Books and Publications | 67 |
| Newspaper Articles and News Sites | 75 |
| Web Sites | 77 |
| About the International Peace Bureau..... | 79 |
| About the Author..... | 79 |

List of Figures and Tables

Figure 1: IPCC, Global Mean Temperatures from 1850-2012

Figure 2: SIPRI, World military expenditures from 1988-2013

Figure 3: IPCC, Working Group III, Figure 4(1) from *Climate Change 2014, Mitigation of Climate Change*

Figure 4: SIPRI, Share of the world military expenditures of the 15 states with the highest spending, 2013

Figure 5: Public Accounts, National Defence Spending v. Environment Canada from 1997-2013.

Table 1: U.S. Military Oil Consumption and Estimated CO₂ emissions, 2012

Table 2: Military Spending by Top 16 Countries, Share of Arms Exports and CO₂ per capita, 2013

Table 3: List of Countries Possessing Nuclear Weapons, Number of Weapons & Expenditures, 2010

List of Acronyms

| | |
|---------------------|---|
| AR5 | Fifth Assessment Report |
| CO ₂ | Carbon Dioxide |
| CO ₂ -eq | Carbon Dioxide equivalent |
| COP | Conference of the Parties |
| DELC | UNEP's Division of Environmental Law & Conventions |
| DDP | Deep Decarbonization Pathway |
| DDPP | Deep Decarbonization Pathways Project |
| DoD | U.S. Department of Defense (or DOD) |
| ENVSEC | Environment and Security Initiative |
| GDAMS | Global Day of Action on Military Spending |
| GCF | Green Climate Fund |
| GEI | Green Economy Initiative |
| GEF | Global Environment Facility |
| Gt | Gigatonne |
| IDDRI | Institute for Sustainable Development and International Relations |
| IEA | International Energy Agency |
| IPCC | Intergovernmental Panel on Climate Change |
| IPB | International Peace Bureau |
| IPS | Institute for Policy Studies |
| MDG | Millennium Development Goal(s) |
| NAPA | National Adaptation Programmes of Action |
| NATO | North Atlantic Treaty Organization |
| OECD | Organization for Economic Co-operation and Development |
| ODA | Official Development Assistance |
| RCP | Representative Concentration Pathways |
| SDSN | Sustainable Development Solutions Network |
| UN | United Nations |
| UNCLOS | United Nations Convention on the Law of the Seas |
| UNEP | United Nations Environment Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNGA | United Nations General Assembly |
| UNODA | Office for Disarmament Affairs |
| UNSG | United Nations Secretary General |
| R&D | Research and Development |
| RDD&D | Research, Development, Demonstration and Deployment |
| SE4ALL | UN Decade of Sustainable Energy for All |
| SIPRI | Stockholm International Peace Research Institute |
| WG1 | IPCC Working Group I |
| WG2 | IPCC Working Group II |
| WG3 | IPCC Working Group III |
| WMO | World Meteorological Organization |

Executive Summary

We are on a path toward dangerous climate change without a radical restructuring of our economy and energy systems. That is the stark scenario presented in the latest working group reports of the Intergovernmental Panel on Climate Change (IPCC). Over the past decade, almost ten gigatonnes of carbon dioxide equivalent has been released into the atmosphere. In 2000, anthropogenic greenhouse gases (GHG) were estimated at 40 GtCO₂-eq and by 2010 they rose to 49 GtCO₂-eq, which is a 25% increase over the period.¹ Carbon dioxide is produced from the burning of fossil fuels for industry, transportation and buildings and is directly linked to the rise in global mean surface temperature. Since the pre-industrial age, the temperature has increased 0.8°C. Last year for the first time, CO₂ was recorded at over 400 parts per million in volume in the atmosphere. In its latest statement on the status of the global climate, the World Meteorological Organization (WMO) explained that thirteen of the fourteen warmest years have all occurred in the 21st century since recordkeeping began in 1850. The WMO also observed that natural disasters have increased fivefold since the 1970s, with more frequent and intense heat waves, droughts, hurricanes and flooding. The WMO added, “Each of the past three decades has been warmer than the last, culminating with 2001-2010 as the warmest decade on record.”²

Not only have carbon emissions increased for the past ten years, so too have military expenditures to a record high. The Stockholm International Peace Research Institute estimated that global military spending was \$839 billion in 2001 and rose to \$1.6 trillion in 2011 – a 92% increase.³ The United States and its allies have spent trillions of dollars financing their deadly and destructive wars in Iraq and Afghanistan. These wars have had terrible social, economic and environmental costs and have made global warming much worse. Expensive weapons systems such as fighter jets, destroyers, and tanks are extremely energy inefficient and emit highly toxic, carbon-intense emissions. *Oil Change International* estimated that the U.S. military emitted 100 million metric tonnes of CO₂ in fuelling its war in Iraq in five years.⁴ The U.S. Department of Defense is the largest industrial consumer of fossil fuels in the world.⁵ It is also the top arms exporter and military spender at \$640 billion, which accounts for 37% of the total. Other western countries that are top military spenders like the United Kingdom, Australia and Canada, have high carbon emissions per capita.

Military expenditures are depriving the international community of the funds desperately needed to mitigate and adapt to the climate crisis. Over the past two decades, the developed countries have provided a paltry \$12.5 billion for the Global Environmental Facility, one of the first funding mechanisms under the United Nations Framework Convention on Climate (UNFCCC). In ten years, the Adaptation Fund has only disbursed \$150 million to help developing countries, which are the most vulnerable and least responsible for climate change. In 2009 at the UNFCCC 15th Conference of the Parties (COP) in Copenhagen, developed countries made a commitment to raise \$100 billion annually by 2020 for the Green Climate Fund to finance the national adaptation plans for developing countries. This is less than 1% of global annual military expenditures. Yet, wealthy, industrialized countries have failed to make adequate pledges to pay their climate debt.

At COP15, the developed countries also committed to limit the increase of the global mean temperature to less than 2°C to prevent unabated, catastrophic climate change. Despite the Copenhagen accord,

¹ IPCC (2013) *Summary for Policymakers*. In: *Climate Change 2013: The Physical Science Basis*. [Online] Available at: http://www.climate2013.org/images/report/WG1AR5_SPM_FINAL.pdf

² World Meteorological Organization (2014) *WMO statement on the status of the global climate in 2013*, [Online] Available at: http://library.wmo.int/opac/index.php?lvl=notice_display&id=15957#.VAC9GvRDvuF

³ See the *Stockholm International Peace Research Institute* Yearbooks from 1994-2013 here: <http://www.sipri.org/>

⁴ Oil Change International (2008) *A Climate of War: Behind the Numbers*. Advance Edition report, [Online] Available at: [http://priceofoil.org/content/uploads/2008/03/A%20Climate%20of%20War%20FINAL%20\(March%2017%202008\).pdf](http://priceofoil.org/content/uploads/2008/03/A%20Climate%20of%20War%20FINAL%20(March%2017%202008).pdf)

⁵ Schwartz, M. et al. (2012) *Department of Defense Energy Initiatives: Background and Issues for Congress*. Congressional Research Service, [Online] Available at: <http://fas.org/sgp/crs/natsec/R42558.pdf>

greenhouse gas emissions continue to rise. Based on its latest observations and modelling, the IPCC determined that GHG emissions need to decrease to net zero by 2050 and that we must stay within a global carbon budget of approximately 825 GtCO₂, to keep the temperature increase within the 2°C limit. To limit greenhouse gas emissions and stay within a carbon budget, a rapid decarbonization of the energy system is required.

To help countries chart a path to low-carbon energy systems and economies, the UN launched the Deep Decarbonization Pathways Project (DDPP). The DDPP recently released its interim report with assessments for fifteen countries accounting for 70% of the GHG emissions.⁶ The report shows the different pathways that countries can take to reach net zero emissions with a mixed renewable energy system. However, the IPCC and the DDPP failed to include the fuel consumption and carbon emissions for the military in their calculations and analysis. According to the UNFCCC reporting guidelines, most of the military sector's fuel consumption and emissions are excluded from national greenhouse gas inventories. While the military's domestic fuel use is reported, international marine and aviation bunker fuels used on naval vessels and fighter aircraft outside national borders are not included in a country's fuel and GHG total. The exemption of the military sector in calculations and reporting is because of the intense lobbying by the United States during the Kyoto Protocol negotiations in the mid-1990s. Since then, the military's carbon "bootprint" has been ignored. There is no mention of the military sector's emissions in the fifth and latest IPCC assessment report. Without complete and transparent information about the emissions and impacts in the military sector, it will not be possible to develop and implement the mitigation and adaptation strategies needed to stabilize the climate. Though, the IPCC and DDPP have argued for decarbonization that supports sustainable development, they overlook one of the most carbon-intensive and environmentally-destructive sectors.

The problem of military expenditures and emissions must be confronted not only by the IPCC and the DDPP, but the entire international community. We need to answer some basic questions: Why is spending for the military prioritized over spending on the climate and the environment? How much of the global carbon budget, if any amount, should be allocated to the military? And should the limited supply of fossil fuels be burned to build new weapons, drop bigger bombs, and fight more wars? **In our new report, *Demilitarization for Deep Decarbonization*, the International Peace Bureau argues that war must stop for global warming to slow down. Military expenditures must be reduced and re-directed for climate finance to create low carbon economies and climate-resilient communities. Disarmament must take place alongside mitigation and adaptation. The military is the problem, not the solution to the climate crisis.** This report provides an environmental perspective to the IPB's dedicated work on disarmament for development. It also builds on the analysis in our previous publications including *Warfare or Welfare? Disarmament for Development in the 21st Century* released in 2005 and *Opportunity Costs: Military Spending and the UN's Development Agenda* published in 2012. The IPB argued that military spending should be decreased for human security and meeting the Millennium Development Goals.

In this report, we begin with the latest findings of the IPCC and the emerging environmental issues in the new yearbook of the UN Environment Programme. Part 2 reveals the many ways our fossil-fuel based economy is destabilizing the climate and degrading the natural environment. In Part 3, we examine some of the impacts on the environment and the climate by the military. In Part 4, we compare climate financing and military expenditures. We also look at how exemptions for the military were negotiated at the time of the Kyoto Protocol and how military emissions are measured. Part 5 presents steps taken by civil society to raise awareness about the impacts of the military on the environment and climate and their calls for a reduction of military expenditures including *The Earth Charter* in 2000, the *People's Agreement on Climate Change and the Rights of Mother Earth* in 2010 and the new *Peace Appeal: Stop the Wars, Stop the Warming* launched this year. In Part 6, we propose six peace and disarmament pathways to decarbonize the planet and achieve sustainable development.

⁶ Sustainable Development Solutions Network and Institute for Sustainable Development and International Relations (2014) *Pathways to Deep Decarbonization Interim 2014 Report*, [Online] Available at: http://unsdsn.org/wp-content/uploads/2014/07/DDPP_interim_2014_report.pdf

1. Disarm and demilitarize for climate justice and sustainable development.

In 2004, a UN Group of Governmental Experts released a report, *The Relationship between Disarmament and Development in the Current International Context*, and advocated for the mainstreaming of the disarmament-development relationship. Thus, an integrated parallel process of disarmament and demilitarization must be pursued alongside climate mitigation and adaptation and the post-2015 development agenda.

2. Reduce and re-direct military spending to climate finance and research, development, demonstration and deployment (RDD&D). The International Energy Agency (IEA) calculated that the total additional investment needs for mitigation for the period 2010-2050 are US \$45 trillion. The IEA also estimated that funding for climate RDD&D requires a two to five fold increase to \$40-90 billion annually. Combined, this is approximately \$1 trillion a year for mitigation and research for the next forty years and roughly equivalent to annual military expenditures.

3. Mitigate and adapt to prevent the drastic impacts of climate change in the Arctic, stop its industrialization and militarization. Countries, such as Russia, the United States, and Canada have plans for increased natural resource development and shipping in the Arctic. These countries are also modernizing their navies for the Arctic environment. Yet to protect this fragile ecosystem and stay within the carbon budget, oil and gas should stay under the ice. The region should be demilitarized, declared a nuclear-weapons free zone and a zone of peace.

4. Convert defence industries into civilian, green industries to create a low-carbon economy. The UN Group of Governmental Experts' 2004 report, recommended that conversion should be encouraged for disarmament and development. To tackle the climate crisis, a conversion plan would help lay the foundation for building a green economy. A University of Massachusetts report found that more jobs could be created with \$1 billion in government expenditures in health care, education, and construction than in the military.

5. Abolish nuclear weapons and avoid nuclear energy. Due to the inherent link with nuclear weapons, nuclear power as a pathway to a low-carbon future should be avoided by the DDPP. Nuclear power risks cost-overruns and accidents. In its report, *Nuclear Weapons Cost Study*, Global Zero estimated that world spending to date on nuclear weapons exceeded one trillion dollars per decade and predicted that another trillion dollars will be spent over the next decade as countries modernize their arsenals.

6. Integrate cooperation, peacebuilding and nonviolence for climate-resilient communities. Cooperation is necessary to stay within the carbon budget in an equitable and just way. The UNFCCC has established the cooperative architecture of diplomacy and the rule of law to peacefully resolve climate conflict. At the local level, peacebuilding and nonviolent conflict resolution help to ensure climate resiliency in communities. Climate change must not be securitized as a threat multiplier that requires a robust military response.

We conclude our report by urging civil society to join our global day of action and campaign on military spending and to challenge the greenwash by weapons manufacturers and green warfighting by the military. We also offer several specific steps that UN agencies, international organizations and national governments can take to untangle this Gordian knot of militarism and the climate crisis. This year is the UN *Year for Climate Action* and the start of the UN *Decade of Sustainable Energy for All* to 2024. Next year, the 21st COP will be held in Paris, France and it is the crucial meeting to decide a new, legally binding mitigation agreement to replace the Kyoto Protocol and to finance the GCF. There must be a groundswell of concerned citizens and international civil society to demand a reduction of militarism and military emissions and expenditures to stabilize the climate and ensure sustainable development. In their article, *Paying for the Climate Change Pivot*, authors Emily Schwartz Greco and John Feffer wrote, "Unless every nation ramps down military spending, we'll all lose the next big war over the fate of the Earth without even firing a shot."⁷

⁷ Schwartz Greco, E. and Feffer, J. (2014) "Paying for the Climate Pivot," *Truthout*, [Online] Available at: <http://truth-out.org/opinion/item/23322-paying-for-the-climate-change-pivot>

1.0 Introduction

Over the past decade, greenhouse gas emissions have increased to the highest level in human history, so too has military spending. For the first time in human history, carbon dioxide (CO₂), the main heat trapping gas, was recorded over 400 parts per million in volume (ppmv) in the atmosphere last year.⁸ The global mean surface temperature of the earth is now at the highest since recordkeeping began in 1850 as shown in Figure 1.⁹ Last year, the Stockholm International Peace Research Institute (SIPRI) estimated that global military spending is now over \$1.7 trillion dollars.¹⁰ Figure 2 shows the rise of military spending over the last two decades. The rise of carbon emissions and military expenditures reflects an undeniable connection between war and global warming. Militaries consume a tremendous amount of oil to fuel inefficient, expensive bombers, combat vessels and armoured vehicles for training and warfighting. The United States Department of Defense (DoD) is the largest institutional consumer of petroleum products in the world and just led coalition forces in two of its longest wars in Iraq and Afghanistan this past decade. The carbon emissions from those wars are excluded in national inventory reports required by the United Nations Framework Convention on Climate Change. There is no mention of CO₂ emissions by the military in the fifth and latest IPCC assessment report. Excessive military expenditures are ignored as a source of funding for climate mitigation and adaption and of capitalization of the United Nations (UN) Green Climate Fund (GCF). The UN Deep Decarbonization Pathways Project that was established to find ways countries could reduce greenhouse gas (GHG) emissions to net zero by 2050 and stay within the 2°C limit did not study the fuel use of the military sector.

In this report, the International Peace Bureau (IPB) argues that without the demilitarization of the economy, deep decarbonization cannot be achieved. Without reducing and redirecting military spending to climate financing, the UN Green Climate Fund will not be adequately capitalized. Without peace and disarmament, sustainable development cannot be realized. Our report begins by presenting some of the most significant findings from the IPCC and the emerging environmental issues from the UN Environment Programme. We discuss the UN Year for Climate Action, the new UN Decade of Sustainable Energy for All to 2024 and the 21st Conference of the Parties (COP21) under the UN Framework for Convention of Climate Change (UNFCCC) in Paris, France next year. COP21 is the crucial meeting to decide a new mitigation agreement to replace the Kyoto Protocol and to raise \$100 billion for the GCF. Then, we explore some of the impacts of the military on the climate and the environment. We also describe the problem of military expenditures and the costs of climate action and inaction. Next, we share some significant steps taken by civil society to raise awareness about links between militarism and climate change, such as the *People's Agreement on Climate Change and the Rights of Mother Earth* in 2010 and the new *Peace Appeal: Stop the Wars, Stop the Warming* launched this year. Militarism can be understood as the complex social, cultural and discursive phenomenon responsible for directing people's and organizations' responses towards violent pathways, particularly by the military, as explained by Marty Branagan in his new book *Global Warming, Militarism and Nonviolence: The Art of Active Resistance*.¹¹ We propose six peace and disarmament pathways for deep decarbonisation: from demilitarization to conversion of defence industries, to the abolition of nuclear weapons. Next, we encourage civil society to join our global campaign on military spending and to challenge the greenwash by weapons manufacturers and green warfighting by the military. We conclude with several specific recommendations to UN agencies, international organizations and national governments to confront these challenges. *Demilitarization for Deep Decarbonization* provides an environmental perspective to the IPB's work on Development for Disarmament. This new report also builds on the previous publications of the IPB including *Warfare or Welfare? Disarmament for Development in the 21st Century* released in 2005 and *Opportunity Costs: Military Spending and the UN's Development Agenda*

⁸ See "Trends in Atmospheric Carbon Dioxide" from the National Oceanic & Atmospheric Administration, Earth System Research Laboratory, Global Monitoring Division here: <http://www.esrl.noaa.gov/gmd/ccgg/trends/weekly.html>

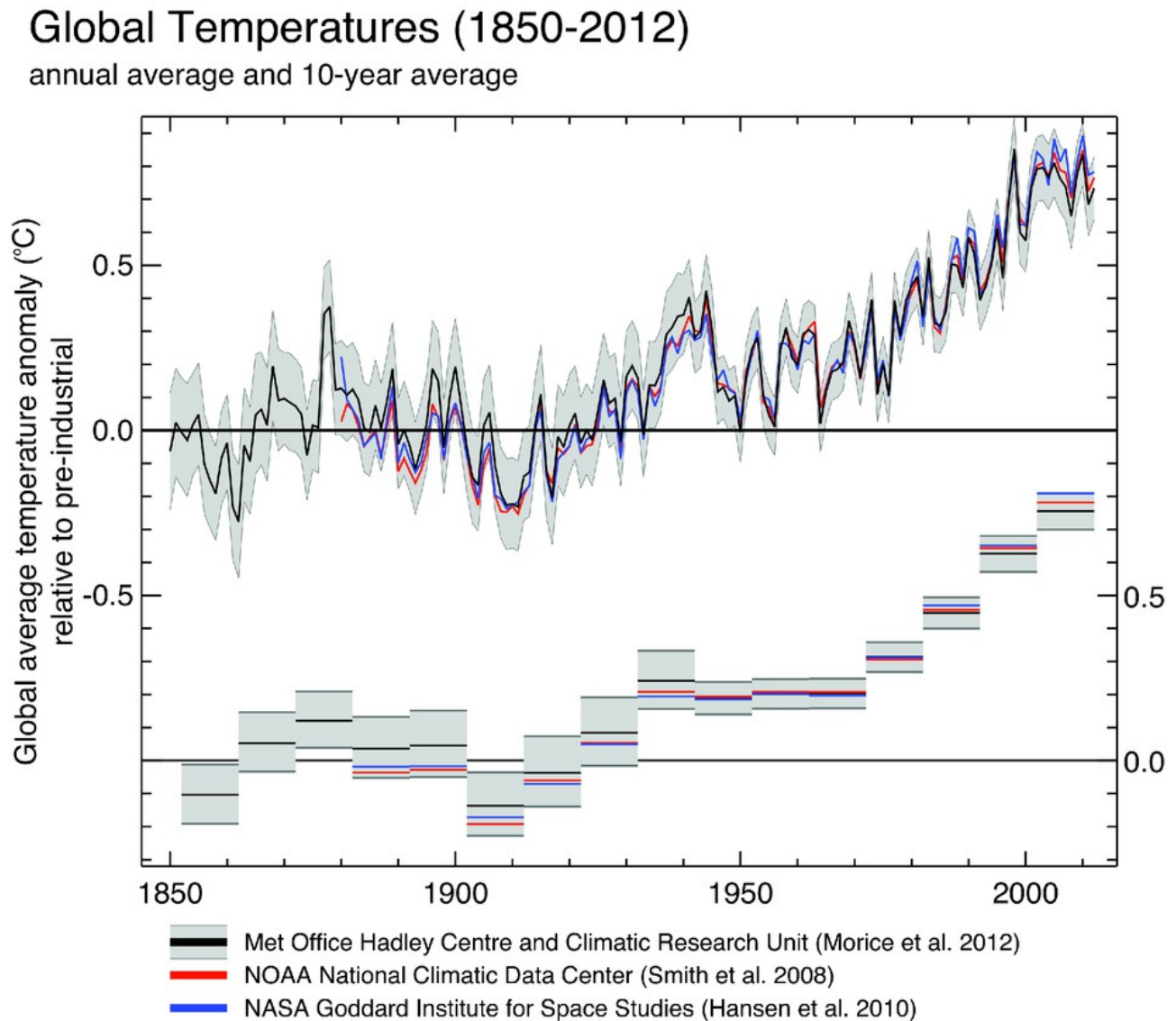
⁹ *Ibid.*

¹⁰ Stockholm International Peace Research Institute (2013) *SIPRI Yearbook 2013: Armaments, Disarmament and International Security*. London: Oxford University Press, 2013.

¹¹ Branagan, M. (2013) *Global Warming, Militarism and Nonviolent: The Art of Active Resistance*. New York, NY: Palgrave Macmillan.

published in 2012.¹² In these reports, the IPB argued that military spending should be decreased to achieve human security and meet the Millennium Development Goals. With the urgency and severity of climate change, we appeal to national governments to shift their budgets and priorities from planning warfare to protecting the planet.

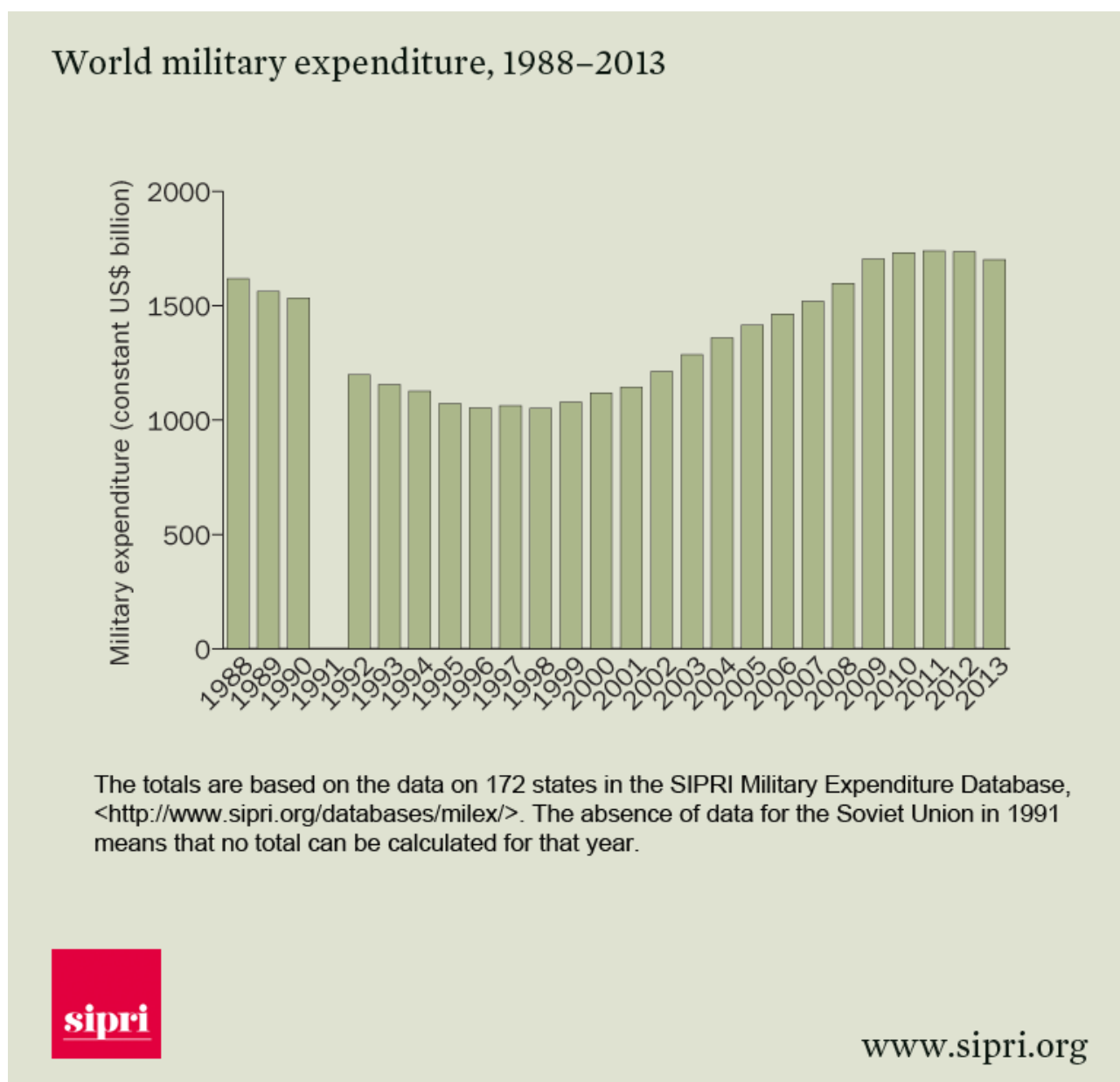
Figure 1: IPCC, Global Mean Temperatures from 1850-2012



Source: IPCC (2013) Summary for Policymakers. In: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA [Online] Available at: http://www.climate2013.org/images/report/WG1AR5_SPM_FINAL.pdf

¹² See "Resources" on the International Peace Bureau web site here: www.ipb.org

Figure 2: SIPRI, World military expenditures from 1988-2013



Source: Stockholm International Peace Research Institute (2013) *SIPRI Yearbook 2013: Armaments, Disarmament and International Security*. London: Oxford University Press, 2013.

2.0 Climate Change and the Need for Deep Decarbonization

2.1 Latest Assessments on Climate Change

The most recent observations and findings of the Intergovernmental Panel on Climate Change (IPCC) are bleak. The IPCC was established by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) in 1988 and is the agency that provides the scientific, technical and socio-economic research for the United Nations Framework Convention on Climate Change (UNFCCC). The IPCC is finalizing its Fifth Assessment Report (AR5). AR5 is being released in four parts between September 2013 and November 2014. It is the most comprehensive assessment of scientific knowledge on climate change since 2007 when the Fourth Assessment Report was released. The findings of these reports are rated on a confidence scale from very low to very high. Over the past two decades, the research and modelling have improved the confidence rating and the analysis. The latest findings announced from the AR5 are intended to provide the scientific information to policy-makers to take action on the climate crisis.

The first volume of AR5, *Climate Change 2013: The Physical Science Basis*, was prepared by almost 900 scientists and experts of Working Group I (WG1) and published last year. Some of the serious observations from this volume are:

- Warming of the climate system is unequivocal and human influence on the climate system is clear
- The atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have increased to levels unprecedented in at least the last 800,000 years
- Carbon dioxide (CO₂) concentrations have increased by 40% since pre-industrial times, primarily from fossil fuel emissions and secondarily from net land use change emissions
- CO₂ is the most abundant greenhouse gas and is the product of burning fossil fuels
- The burning of fossil fuels comes from human activities like energy use, transportation, cement production, waste management, and buildings
- Ocean warming dominates the increase in energy stored in the climate system, accounting for more than 90% of the energy accumulated between 1971 and 2010
- The ocean has absorbed about 30% of the emitted anthropogenic carbon dioxide, causing ocean acidification
- Over the last two decades, the Greenland and Antarctic ice sheets have been losing mass, glaciers have continued to shrink almost worldwide, and Arctic sea ice and Northern Hemisphere spring snow cover have continued to decrease, matching the extent of the rise in sea levels, and the increase in greenhouse gas concentrations
- Over the period 1901 to 2010, global mean sea level rose by 0.19 m
- Stabilizing the atmospheric concentration of greenhouse gases at below 450 parts per million (ppm) of carbon-dioxide equivalent (CO₂-eq) is consistent with a near 50% chance of achieving the 2°C target and that this would help avoid the worst impacts of climate change¹³

With this physical science knowledge, WG1 declared, “Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.”¹⁴

Earlier this year, Working Group II (WG2) released its report *Climate Change 2014: Impacts, Adaptation and Vulnerability*. WG2 explained that as a result of climate change there will be more frequent, deadly and costly natural disasters, such as hurricanes, flooding, and heat waves. Moreover, WG2 warned that the

¹³ IPCC (2013) *Summary for Policymakers*. In: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, [Online] Available at: http://www.climate2013.org/images/report/WG1AR5_SPM_FINAL.pdf

¹⁴ *Ibid.*

greater magnitudes of global warming will “increase the likelihood of severe, pervasive, and irreversible impacts.” The following stark findings were made:

- Adaptation and mitigation choices in the near term will affect the risks of climate change throughout the 21st century
- In many regions, changing precipitation or melting snow and glacier ice are altering hydrological systems, affecting water resources in terms of quantity and quality
- Based on many studies covering a wide range of regions and crops, negative impacts of climate change on crop yields have been more common than positive impacts
- Impacts from recent climate-related extremes, such as heat waves, droughts, floods, cyclones, and wildfires, reveal significant vulnerability
- Climate-related hazards exacerbate other stressors, often with negative outcomes for livelihoods, especially for people living in poverty
- Violent conflict increases vulnerability to climate change
- Large-scale violent conflict harms assets that facilitate adaptation, including infrastructure, institutions, natural resources, social capital, and livelihood opportunities
- Climate change can indirectly increase risks of violent conflicts in the form of civil war and inter-group violence by amplifying well-documented drivers of these conflicts such as poverty and economic shocks¹⁵

To reduce vulnerabilities, WG2 recommended climate adaptation pathways for climate-resilient and sustainable development, such as national governments coordinating the development and implementation of adaptation strategies to reduce risk and vulnerabilities across all sectors of the economy.

Working Group III (WG3) has also released its report *Climate Change 2014: Mitigation*. Mitigation is a human intervention to reduce the sources or enhance the sinks of greenhouse gases.¹⁶ WG3 discussed long-term mitigation measures for the sectors of energy supply, energy end use, agriculture, land use, human settlements and infrastructure. WG3 stressed,

Without additional efforts to reduce GHG emissions beyond those in place today, emissions growth is expected to persist driven by growth in global population and economic activities. Baseline scenarios, those without additional mitigation, result in global mean surface temperature increases in 2100 from 3.7° C to 4.8° C compared to pre-industrial levels.¹⁷

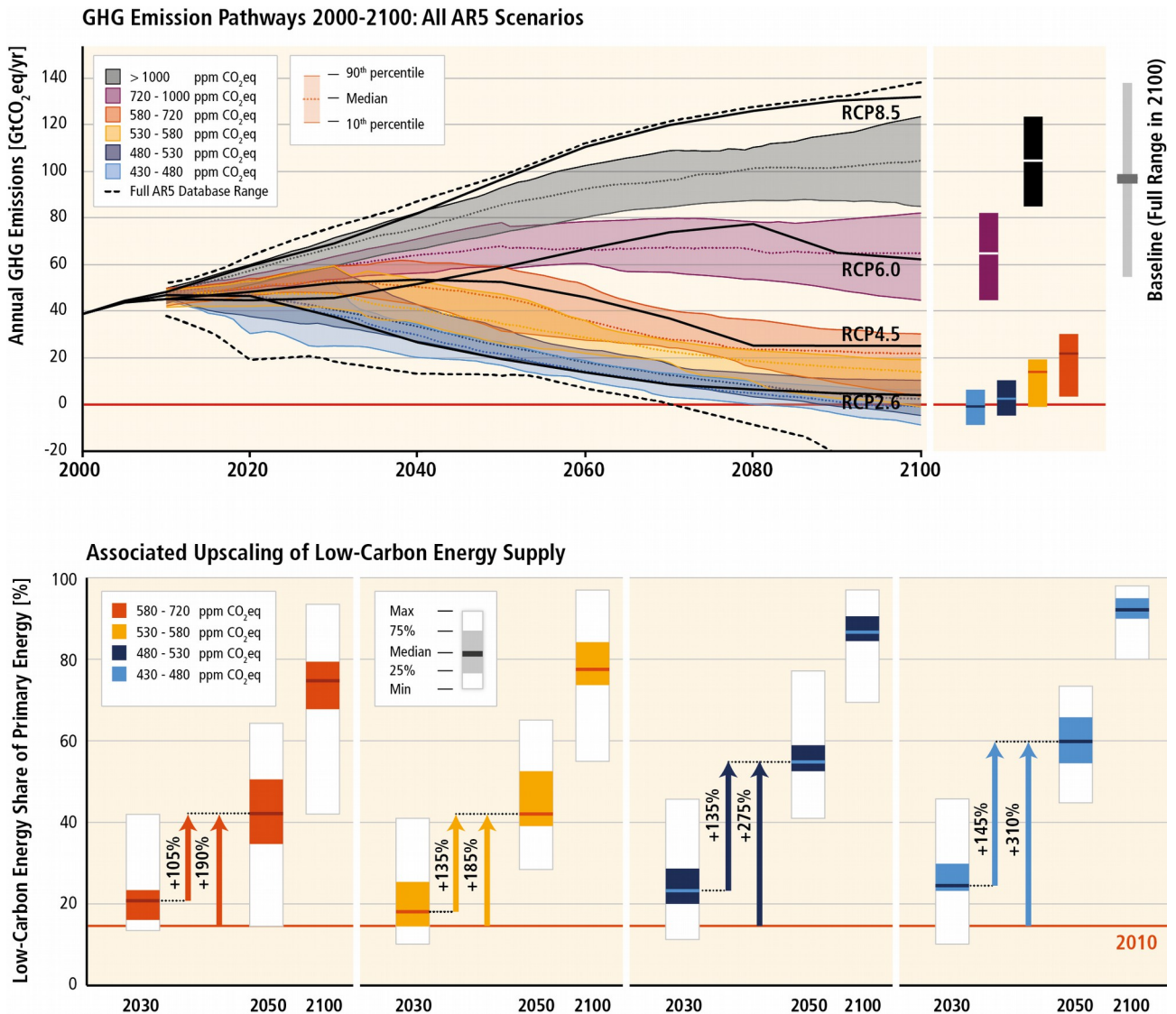
As stated earlier, the baseline trajectory is also referred to as Business-As-Usual (BAU) and it overshoots the 2°C limit and leads to dangerous climate change. The BAU is the trajectory we are currently on and is reflected in the range between Representative Concentration Pathways (RCP) 6.0 and RCP 8.5 (See Figure 3). Figure 3 shows that on the RCP 6.0 and RCP 8.5 pathways there will be a continued increase in annual GHG emissions rising to 720 to 1000 parts per million volume (ppmv) of CO₂-eq until 2100. From this increase in GHG emissions, the DDPP explains that the risk of a 4°C increase is potentially catastrophic and threatens all aspects of society and the economy including food production and human health. The safest pathway is RCP 2.6, the bottom line, which shows a deep and immediate reduction of GHG emissions until mid-century. To achieve RCP 2.6 (the most climate safe path) there needs to be an associated upscaling of low-carbon energy shown in the bottom part of Figure 3. WG3 also emphasized that any effective mitigation and adaption programs must be based on the principles of equity, justice and fairness. Let us pause here to ask: Is it equitable, just and fair for the military sector to consume fuel without scrutiny, emit carbon-intensive and highly toxic emissions without limit, divert financial resources needed for communities to cope, and to continue unchecked, taking us on a path toward catastrophic climate change?

¹⁵ IPCC (2014) *Summary for policymakers*. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. [Online] Available at: http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf

¹⁶ IPCC (2014) *Summary for Policymakers*, In: *Climate Change 2014, Mitigation of Climate Change*. [Online] Available at: http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf

¹⁷ *Ibid.*

Figure 3: IPCC, Working Group III, Figure 4(1) from *Climate Change 2014, Mitigation of Climate Change*



Source: IPCC (2014) Summary for Policymakers, In: *Climate Change 2014, Mitigation of Climate Change*. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. [Online] Available at: http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf

2.2 The Carbon Budget 2050: We Cannot Waste it on Military Consumption

With the IPCC figures, a carbon budget can be estimated for 2050 that will keep us on a climate safe trajectory until 2100. The budget is based on CO₂, the largest single source of GHG emissions, at 78% of total emissions. The DDPP explains that the carbon budget is determined by the following numbers and parameters:

- Since the industrial age, global mean surface temperature has risen 0.8°C (1.4 °F) and the adverse implications of this warming are more serious than expected by the IPCC
- International consensus is to limit to less than 2°C the increase of global temperature to prevent dangerous, unabated climate change
- The level of cumulative CO₂ emissions for the period of 2011-2100 should be within the range of 630-1180 gigatons of CO₂ (GtCO₂)
- The bulk of the emission reductions must take place within the next forty years between 2011-2050 because of impacts of accumulation and carbon or radiative forcing
- Global net emissions of GHG must approach zero by the second half of the century to stay within the 2°C limit
- The CO₂ budget for the 2011-2050 period is 825 GtCO₂
- There is approximately 2,795 GtCO₂ in proven oil and gas reserves , so most of it must be kept in the ground¹⁸

In a related study, *Busting the Carbon Budget: Low Carbon Economy Index*, PricewaterhouseCoopers determined that “the required decarbonisation rate is higher than ever before at 6% per annum between now and 2100. The technological shifts that need to happen have not materialized. The window to act is shorter, and the scale of the challenge is larger... Crucial is the will to act.”¹⁹ We must also decide how that carbon budget will be allocated. The current global population is 7.2 billion and is expected to rise to 9.6 billion by 2050, based on an average fertility rate.²⁰ The international community has made a commitment to energy security for all, so that requires a fair distribution of the fossil fuels humanity can burn in the carbon budget. With the limited fossil fuels that are permitted in the budget, it is irresponsible to use it for the military’s tanks, destroyers and fighter jets and not for transitioning to a low-carbon economy?

2.3 Emerging Issues from the United Nations Environment Programme

Along with global warming, there is worsening environmental degradation. For the past ten years, the United Nations Environment Programme (UNEP) has released a yearbook of emerging environmental issues. UNEP’s *2014 Year Book* examined expanding coastal dead zones due to excess nitrogen in the environment, deteriorating air pollution, increasing plastic debris in the ocean, and rapid changes in the Arctic.²¹ There are now 500 known coastal dead zones from severe eutrophication caused by an overload of nitrogen in the marine environment.²² Nitrogen emissions to the atmosphere contribute to climate change.

¹⁸ National Aeronautics and Space Administration (2014) *Global Climate Change: Vital Signs, Key Indicators* [Online] Available at: http://climate.nasa.gov/key_indicators/#co2 and McKibben, B. (2012) “Global Warming’s Terrifying Math,” *Rolling Stone Magazine*, [Online] Available at: <http://www.rollingstone.com/politics/news/global-warmings-terrifying-new-math-20120719?page=3>

¹⁹ PriceWaterhouseCoopers (2013) *Busting the carbon budget: Low Carbon Economy Index*. Report for PWC, [Online] Available at: http://www.pwc.co.uk/en_UK/uk/assets/pdf/climate-change-in-aerospace-defence.pdf

²⁰ United Nations (2013) *World Populations Prospects: The 2012 Revision, Highlights*, Volume I Comprehensive Tables, [Online] Available at: http://esa.un.org/wpp/Documentation/pdf/WPP2012_HIGHLIGHTS.pdf

²¹ See UNEP Year Book 2014 here: <http://www.unep.org/yearbook/2014/>

²² *Ibid.*

In 2012, seven million premature deaths were caused by air pollution.²³ In urban areas, the widespread combustion of diesel fuel creates dense and deadly smog from fine particulates and contributes to climate change. Plastic, a petroleum product, is damaging critical habitat, like coral reefs, and killing marine life, like turtles, dolphins and whales. UNEP explains, "Our economies are still largely fossil-fuel based, with the environmental, economic and health costs largely hidden."²⁴ The yearbook is an annual call for international, coordinated action on severe, trans-boundary environmental problems. Though UNEP does not quantify the projected costs of remediation, they are no doubt in the billions of dollars. Cleaning up and protecting the natural environment – our life support system - should be national and international priorities matched by adequate funding, but they are not. Climate change is compounded by intensifying pollution, biodiversity loss and resource scarcity. Political action and funding to date have been inadequate to reverse these negative environmental trends.

2.4 Upcoming United Nations Climate Summit and Conferences of the Parties

The UN Secretary-General Ban Ki-moon has invited government, business and civil society leaders to a Climate Summit in New York in September. The Summit is not part of formal negotiations of the United Nations Framework Convention for Climate Change. However, the Secretary General wants to bring leaders together to generate momentum for greater emission reductions and climate financing pledges in advance of the 21st Conference of the Parties meeting in Paris next year. Participation in the Summit is limited to UN members and by invitation to corporate and community leaders. The UN held a worldwide nomination process to find 38 passionate community leaders to participate. From the 500 applications received, the UN selected Kathy Jetnil-Kijiner, a young teacher and spoken word artist from the Marshall Islands to address the opening plenary of the Summit. In a UN press statement, Jetnil-Kijiner said her poetry focuses on "nuclear testing conducted in our islands, militarism, the rising sea level as a result of climate change, forced migration, adaptation and racism in America."²⁵ Jetnil-Kijiner recognizes the link between climate change and militarism. Earlier this year, the IPB awarded the Sean MacBride Prize to the people and the government of the Republic of the Marshall Islands for taking the nine nuclear weapons-possessing countries to the International Court of Justice to enforce compliance with the Non-Proliferation Treaty and international customary law. The Marshall Islands were used by the U.S. as a nuclear weapons testing ground for 70 nuclear tests from 1946 to 1958 that caused devastating health and environmental impacts from the radiation.²⁶ Along with a tragic, toxic military legacy, the Marshall Islands is a low-lying, developing state that is suffering the effects of climate change from sea level rise.²⁷ The vulnerability of developing countries to climate change is also the vulnerability faced by all global youth whose futures are threatened.

The full IPCC Fifth Assessment Report (AR5) will be completed in time for the UNFCCC COP 20 and the 10th Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 10) in Lima, Peru this November. At this meeting, it is hoped that states will prepare a draft agreement and make commitments for the initial capitalization of the UN Green Climate Fund. The Lima meeting is an important step toward COP 21 and CMP 11 in Paris next year hosted by the French government. It is hoped that a new, universal, legally binding treaty on climate change will be the outcome of the meeting in Paris in 2015. Parties must agree to mandatory greenhouse gas reductions that will keep the global temperature to below 2°C. Earlier this year, in a joint opinion piece published in the Washington Post and Le Monde, the French President François Holland and U.S. President Barack Obama wrote that they will pursue "an ambitious and inclusive global agreement that reduces greenhouse gas emissions through concrete actions" at the COP 21

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ See the UN announcement "Climate Summit to hear from Marshall Islands poet" here:

<http://www.un.org/climatechange/summit/2014/08/climate-summit-hear-marshall-islands-poet/>

²⁶ See the IPB press release "IPB to award MacBride Peace Prize to the people and government of the Republic of the Marshall Islands for their courageous initiative to rid the world of nuclear arms" here:

http://ipb.org/uploads/documents/other_docs/Marshall_Islands.pdf

²⁷ See Press Conference on Impact of Climate Change on Marshall Islands before the UN Security Council on February 13, 2013 here: http://www.un.org/News/briefings/docs/2013/130215_MI.doc.htm

meeting.²⁸ In their piece, the leaders also recognized that by reducing carbon emissions, new domestic jobs and international clean energy partnerships could be created for low-carbon economic growth. Obama and Hollands' sincerity is questioned as they both continue to peddle their gas-guzzling fighter jets, the French Rafale combat plane and the American F-35 stealth fighter respectively, to developing countries around the world.²⁹ Last month, it was reported that President Obama would push for a voluntary, not a mandatory agreement at COP21 and that there was no expectation that the U.S. Congress would ever ratify it.³⁰ As well, the COP21 host, France, is the 5th highest military spender at \$61 billion, the 5th biggest exporter of arms in the world, and possesses approximately 300 nuclear weapons that are costly to store and maintain.³¹ For France to show real climate leadership, it should reduce and re-direct its military spending to green jobs and climate financing and it should stop selling arms to poor countries and instead fund clean energy partnerships.

2.5 United Nations Decade of Sustainable Energy for All 2014-2024

This year the UN launched the Decade of Sustainable Energy for All (SE4ALL). SE4ALL is a ten-year plan to spur a global energy transformation and to achieve three goals by 2030: universal energy access, renewable energy, and energy efficiency.³² The decade will address energy poverty and climate change and advance energy security and renewable energy. The UN convened its first SE4ALL forum in June and the Secretary-General called on states to make country-level commitments and to invest more in innovative financing. The UN estimates that it will cost within the range of \$500 to \$1200 billion of additional capital per year to achieve the SE4ALL commitments.³³ Of concern, however, is Bank of America's involvement in the fundraising of private capital for green bonds for SE4ALL.³⁴ This year, Bank of America settled the largest civil suit in U.S. history for mortgage-related fraud that caused thousands of poor Americans to lose their homes.³⁵ International civil society must remain wary of private investment in SE4ALL and other environmental and climate financing to ensure public transparency and accountability. The IPB recommends that public tax dollars going into military budgets be redirected to achieve the SE4ALL commitments in an accountable and transparent way.

2.6 Deep Decarbonization Pathways Project

Under the Cancun Agreement, countries made a commitment to stay within the global temperature limit of 2°C increase by mid-century, yet they have not determined how they will do it. In 2012, the UN established the Sustainable Development Solutions Network (SDSN) to bring technical and scientific experts together to help find practical solutions to sustainability challenges like climate change. The SDSN partnered with the Institute for Sustainable Development and International Relations (IDDRI) and launched the Deep Decarbonization Pathways Project (DDPP). The project is helping countries find zero CO₂ emission pathways

²⁸ Obama, B. and Hollande, F. (2014) "France and the U.S. enjoy a renewed alliance," *The Washington Post*, http://www.washingtonpost.com/opinions/obama-and-hollande-france-and-the-us-enjoy-a-renewed-alliance/2014/02/09/039ffd34-91af-11e3-b46a-5a3d0d2130da_story.html

²⁹ See Bipindra, N.C. (2014) "India Said to Target Signing Rafale Fighter Jet Deal by End 2014," Bloomberg, [Online] Available at: <http://www.bloomberg.com/news/2014-08-20/india-said-to-target-signing-rafale-fighter-jet-deal-by-end-2014.html> and See F-35A Conventional Takeoff and Landing Variant on the Lockheed Martin web site here: <http://www.lockheedmartin.com/us/products/f35/f-35a-ctol-variant.html>

³⁰ Davenport, C. (2014) "Obama Pursuing Climate Accord in Lieu of Treaty," *The New York Times*, [Online] Available at: http://www.nytimes.com/2014/08/27/us/politics/obama-pursuing-climate-accord-in-lieu-of-treaty.html?_r=0

³¹ Stockholm International Peace Research Institute (2014) *Trends in World Military Expenditure, 2013*. SIPRI Fact Sheet, [Online] Available at: http://books.sipri.org/product_info?c_product_id=476

³² See SE4ALL here: <http://www.se4all.org/>

³³ See SE4ALL Innovative Finance here <http://www.se4all.org/hio/innovative-finance/>

³⁴ See SE4ALL Results And Deliverables: Partners Making Progress 2 here: http://www.se4all.org/wp-content/uploads/2014/04/SE4ALL_Partners_Progress-2.pdf

³⁵ McLaughlin, D. et al. (2014) "BoFA to Pay \$16.7 Billion to End U.S. Mortgage Probes," Bloomberg, [Online] Available at: <http://www.bloomberg.com/news/2014-08-21/bofa-agrees-to-pay-16-65-billion-to-end-u-s-mortgage-probes.html>

by 2050 to get on a safe climate trajectory and to stay within a carbon budget. The DDPP explains that “deep decarbonization” is a profound transformation of energy systems through steep declines in carbon intensity in all sectors of the economy, necessarily required in every country.³⁶ The DDPP is currently comprised of 15 country teams composed of researchers and institutions from countries representing 70% of global GHG emissions and at different stages of development: Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Japan, Mexico, Russia, South Africa, South Korea, the UK, and the US. Independent of governments, the country research teams have mapped out pathways to decarbonization for these fifteen countries.³⁷ Their interim report was released in July 2014 and the final, full report will be presented to the French government in advance of COP21 in 2015. Unfortunately, the decarbonization pathways developed do not include for GHG emission reductions by the military sector and does not account for the highly militarized nature of the economies of the U.S., Russia, China and the UK. In response to a call for comments on the interim DDPP report, the IPB submitted a letter expressing our concern about the exclusion of military fuel consumption and CO₂ emissions in their analyses (See Annex 1). We also objected to nuclear energy included in the primary energy mix in some of the country scenarios, such as for France and the United States, because of the concern of nuclear weapons proliferation and waste storage.

The DDPP is one of twelve thematic groups of the Sustainable Development Solutions Network (SDSN). The SDSN secretariat is based at Columbia University and is headed by Jeffrey Sachs, Professor of Economics and Director of the Earth Institute. Among the other eleven thematic groups is “Reducing Poverty and Building Peace in Fragile Regions” (Thematic Group 2), the IPB notes that the target of this group is on peacebuilding for poor developing countries and that there are no representatives of peace organizations in the executive membership.³⁸ Peacebuilding is necessary in all countries and the thematic group executive should include a civil society representative with expertise in peace and disarmament. Practical peacebuilding and disarmament plans should be developed for all countries, especially wealthy developed countries that are the main arms exporters and top military spenders.

3.0 Impacts by the Military on the Environment and Climate Change

3.1 Environmental Impacts of Militarism

The United Nations Environment Programme (UNEP) acknowledges that there has been insufficient oversight and scant research at the international and national level on the military’s impacts on the natural environment and climate change.³⁹ This is confirmed in a 2004 report commissioned by Physicians for Global Survival on the direct and indirect efforts of the military on the natural environment. In *The Impact of Military on the Environment*, author Abeer Majeed states, “The contribution of military activities to the unprecedented series of environmental crises facing the world today has been largely overlooked and, to an extent, wilfully ignored.”⁴⁰ The IPB explored some of the impacts of weapons on development in our 2005 publication *Warfare or Welfare?*

Many studies on the environmental impacts of armed conflict show the terrible ecological effects from wetland degradation, water pollution, deforestation, and weapons, contaminating agricultural land.⁴¹

³⁶ Sustainable Development Solutions Network and Institute for Sustainable Development and International Relations (2014) *Pathways to Deep Decarbonization Interim 2014 Report*, [Online] Available at: http://unsdsn.org/wp-content/uploads/2014/07/DDPP_interim_2014_report.pdf

³⁷ *Ibid.*

³⁸ See UN Sustainable Development Solutions Network, Thematic Group 2, here: <http://unsdsn.org/what-we-do/thematic-groups/reducing-poverty-and-building-peace-in-fragile-regions/>

³⁹ See UNEP, Division of Environmental Law and Conventions, Preventing Military Impacts on Environments, here: <http://www.unep.org/delc/MilitaryActivities/tabid/78544/Default.aspx>

⁴⁰ Majeed, A. (2004) *The Impact of Militarism on the Environment: An Overview of Direct & Indirect Effects*. Report for Physicians for Global Survival (Canada). [Online] Available at: http://pgs.ca/wp-content/uploads/2007/11/militarism_environment_web.pdf

In 2009, American professor Barry Sanders published a book, *The Green Zone: The Environmental Costs of Militarism*. He studied the environmental impacts of U.S. weapons systems and the extensive environmental damage from U.S. wars in Vietnam, Iraq and Afghanistan and at domestic and international American military bases. Sanders compiled research on the incidences and impacts of various toxic chemicals and depleted uranium (DU) by the military. The U.S. military has left a trail of environmental destruction from its military bases and operations in Guam and Puerto Rico due to exploded ordinances; in the Marshall Islands from nuclear weapons testing; the Philippines from heavy metals, fuel and asbestos, and lastly, in Iraq and the former Yugoslavia from DU.⁴² One highly toxic chemical, perchlorate, which is an explosive propellant for rockets and missiles, has caused widespread water and soil contamination in the U.S.⁴³ Exposure to perchlorate has adverse impacts on the thyroid and respiratory system. Many of the most contaminated sites in the U.S. are military facilities and are listed on the Environmental Protection Agency's National Priority Super Fund list.⁴⁴ Moreover, Sanders explains that the DoD has also secured voluntary status or exemptions to the adherence of national and international environmental norms and laws. Sanders findings are also identified by the *Costs of War Project*, an excellent resource that tracks the environmental costs of war along with the economic, social, and human costs.⁴⁵

Though there are many arms control treaties, there are few international norms or laws that enforce compliance and accountability of the military for its damage of the environment. For example, in Agenda 21, Chapter 20, *Environmentally Sound Management of Hazardous Wastes*, there is a clause that states that governments should ensure that their militaries conform to their national environmental norms in the treatment and disposal of hazardous wastes.⁴⁶ However, there is no public transparency and third-party verification. To overcome this deficiency, the Division of Environmental Law & Conventions (DELIC) in UNEP has made "Military and the Environment" a programme area. DELIC is responsible for the development and facilitation of international environmental law, governance and policy. Its current ten-year mandate commenced in 2010 is guided by the 4th Montevideo Programme for the Development and Periodic Review of Environmental Law that was adopted by the UNEP Governing Council in 2009. Under this mandate, one area of focus is "Environment and the Military" and the objective is "to reduce or mitigate the potentially harmful effects of military activities on the environment and to encourage a positive role for the military sector in environmental protection."⁴⁷ The accompanying DELIC action and strategy do not explicitly mention the climate impacts of the military. UNEP has conducted only two preliminary meetings related to the subject area of military and the environment: in Kenya in 2007 and in Switzerland in 2009. The intended outcomes were to: develop national environmental policies for the military sector; encourage the military sector to assist in the achievement of sustainable development; and assess the damage to the environment caused by military activities and the need for and feasibility of clean up and restoration in such areas where damage has occurred. There are no UNEP outcome documents or reports related to these meetings or to this DELIC programme of work available online. Further, there appears to be no progress made since 2009. DELIC should advance its work on the legal aspects of the military and environment and include an analysis of the norms and laws that apply to the military and its impacts on the climate. Though UNEP does do post-crisis environmental assessments and post-conflict environmental recovery reports such as ones for Iraq, Afghanistan, Sudan, and the Democratic Republic of Congo, there is limited capacity, remediation and assigning accountability to intervening countries by UNEP.⁴⁸ The UN must do more to confront and hold accountable states for the adverse impacts of their militaries on the environment and the climate.

⁴¹ Conca, K. and Wallace, J. (2013) "Environment and Peacebuilding in war-torn societies: Lessons from the UN Environment Programme's experience with post-conflict assessment," in Jensen, D. and Lonergan, S. (eds.) *Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding*, London: Earthscan, pp. 69 and 70.

⁴² Sanders, B. (2009) *The Green Zone: The Environmental Costs of Militarism*. Oakland: AK Press, Chapter 4.

⁴³ *Ibid*, pp. 83-106.

⁴⁴ See the U.S. Environmental Protection Agency's Superfund List here: <http://www.epa.gov/superfund/sites/npl/>

⁴⁵ See *Costs of War Project* here: <http://costsofwar.org/article/environmental-costs>

⁴⁶ See clause 20 (h) in the United Nations (1992) *Agenda 21*, [Online] Available at:

<http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>

⁴⁷ <http://www.unep.org/delc/Portals/119/MontevideoIV.pdf>

⁴⁸ See Country Reports under *Post Crisis Environmental Assessments* and *Post Crisis Environmental Recovery* in UNEP Disasters and Conflict here: <http://www.unep.org/disastersandconflicts/>

3.2 Fossil Fuel Use by the Military

With his research on military emissions, Barry Sanders, author of *The Green Zone* stated, “People need to recognize that severe and serious reductions must take place in that one sector – the military – that is responsible for bringing the world to the brink of extinction faster than any other.”⁴⁹ The U.S. Department of Defense (DoD) is the largest consumer of oil in the U.S. and the largest industrial consumer of oil in the world.⁵⁰ According to a 2012 Congressional report, *Department of Defense Energy Initiatives*, approximately 75% of DoD’s energy is for operational use that includes training, moving and sustaining military forces and weapon platforms for military operations; 25% is for installations including facilities and non-tactical vehicles.⁵¹ The report stated that the DoD consumed approximately 117 million barrels of oil per year at a cost of \$17.3 billion. Table 1 presents the breakdown of fuel consumption and cost by the U.S. Air Force, Navy and Army in 2012.

Table 1: U.S. Military Oil Consumption and Estimated CO₂ emissions, 2012

| U.S. Military | Number of barrels/year | Number of gallons/year | Percentage of total DoD consumption | Fuel Cost (in US \$) | CO ₂ or equivalent (metric tonnes) |
|------------------|------------------------|------------------------|-------------------------------------|----------------------|---|
| Air Force | 62 million | 3 billion | 53% | \$9 billion | 26 million |
| Navy | 33 million | 1 billion | 28% | \$5 billion | 14 million |
| Army | 21 million | 900 million | 19% | \$3 billion | 9 million |
| | 117 million | 5 billion | 100% | \$17 billion | 49 million |

Source: Schwartz, M. et al. (2012) *Department of Defense Energy Initiatives: Background and Issues for Congress*. Congressional Research Service, [Online] Available at: <http://fas.org/sgp/crs/natsec/R42558.pdf>
Calculations of CO₂ is from the U.S. Energy Information Administration:
<http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=10>

Based on this level of annual fuel consumption, the DoD emits approximately 49 million metric tonnes of CO₂ into the atmosphere every year, which is roughly equivalent to annual greenhouse gas emissions from 10 million passenger vehicles or 4 million homes.⁵² The military’s carbon “footprint” would be much higher if the petroleum consumption and cement production by its private contractors and on its overseas military bases were included in the calculations.⁵³ Our report *Warfare of Welfare?* describes some of the environmental and social damage caused to local communities by foreign military bases.⁵⁴

A retired professor of environmental health from the Boston University School of Public Health looked into greenhouse gas emissions and environmental impacts of the U.S. military. In her article, *The Military Assault on Global Climate*, H. Patricia Hynes stated, “Militarism is the most oil-exhaustive activity on the planet, growing more so with faster, bigger, more fuel-guzzling planes, tanks and naval vessels employed in

⁴⁹ Sanders, B. (2009) *The Green Zone: The Environmental Costs of Militarism*. Oakland: AK Press, p. 161.

⁵⁰ Schwartz, M. et al. (2012) *Department of Defense Energy Initiatives: Background and Issues for Congress*. Congressional Research Service, [Online] Available at: <http://fas.org/sgp/crs/natsec/R42558.pdf>

⁵¹ *Ibid.*

⁵² U.S. Environmental Protection Agency, *Greenhouse gas equivalencies calculator*, [Online] Available at: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html> Note: About 19.64 pounds of carbon dioxide (CO₂) are produced from burning a gallon of gasoline that does not contain ethanol. About 22.38 pounds of CO₂ are produced by burning a gallon of diesel fuel.

⁵³ See 3.8 of United States (2014) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*, U.S.

Environmental Protection Agency, National Inventory Report, [Online] Available at:

https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php

⁵⁴ Archer, C. and Hay-Edie, D. (2005) *Warfare or Welfare? Disarmament for Development in the 21st Century*. Geneva: International Peace Bureau.

more intensive air and ground wars.”⁵⁵ Consider the fuel use by the following weapons systems and vehicles as cited by the *Costs of War Project* and in the book, *The Environmental Costs of Militarism*:

- Apache helicopters get .5 miles to the gallon (or it used approximately 300 gallons during eight hours of operation)
- M1 Abrams tank gets .2 miles to the gallon (compare this with a fuel efficient car like the Toyota Prius that gets 51 mpg)
- Bradley Fighting Vehicles get 1 mile to the gallon
- Battleships consume 68 barrels (2856 gallons) per hour
- Non-nuclear aircraft carriers burn approximately 134 barrels (5628 gallons) per hour
- Arleigh Burke-class destroyer typically burns 23 barrels (1,000 gallons) of petroleum fuel an hour
- B-52 long-range bomber burns 80 barrels (3,334 gallons) per hour
- F-15 fighter jet burns 342 barrels (14,400 gallons) per hour⁵⁶

Tanks, destroyers and fighters jets are highly energy inefficient, toxic and disproportionately contribute to climate change. In addition, the cumulative, life-cycle emissions and environmental impacts of these weapon systems are not known. Let’s not forget the purpose of these weapons systems; they are designed to injure and kill people and destroy infrastructure.

Recall that the Air Force is the largest consumer of petroleum products in the military. Aircraft fuel is kerosene turbine fuel, also known as JP-8. It is the most carbon intensive and emits the highest CO₂ because of its additives and radiative forcing in the atmosphere.⁵⁷ Fighter jets also cause severe noise pollution from sonic booms and release toxic air pollutants, including cancer-causing benzene and polycyclic aromatic hydrocarbons.⁵⁸ Having studied the environmental and climate impacts of the military, Sanders concluded that the only way to reduce the greenhouse gases to zero is to end war; the IPB agrees.⁵⁹

[PROFILE]: The most expensive weapons system in history is the Lockheed Martin F-35 Joint Strike Fighter that is estimated to cost over \$1 trillion including the production, operation and maintenance.⁶⁰ In a Congressional report this March, the U.S. Government Accountability Office estimates that it will cost approximately \$13 billion annually until 2037 for the F-35 program and the latest unit cost is \$137 million per plane.⁶¹ The GAO expressed concerns about the rising costs and technical problems with the plane. The F-35 is a fifth-generation stealth fighter with a single-seat and a single-engine that has an internal fuel capacity of 18,200 with a combat radius of less than 590 nautical air miles.⁶² It is highly inefficient at 31 pounds of fuel needed per nautical mile. The jet fuel it burns, JP-8, is carbon-intensive with added nitrous oxide, sulphur dioxide, soot and particles that make it especially harmful to the climate.⁶³ The F-35 is not only destroying the atmosphere, it is designed to drop bombs. Its weapons payload includes cannons, air-to-air missiles, and guided bombs.⁶⁴ The U.S. government has plans to buy 2,457 aircraft. There are twelve other countries also planning to buy the aircraft: Australia, Canada, Denmark, Italy, Israel, Japan,

⁵⁵ Hynes, P.H. (2011) “*The Military Assault on Global Climate*,” *Truthout*, [Online] Available at:<http://www.truth-out.org/news/item/3181:the-military-assault-on-global-climate>

⁵⁶ Sanders, B. (2009) *The Green Zone: The Environmental Costs of Militarism*. Oakland: AK Press, pp. 58-67 and see “Environmental Costs” at the *Costs of War*: <http://costsofwar.org/>

⁵⁷ *Ibid*, p. 72.

⁵⁸ United States Air Force (2011) *F-35 Force Development Evaluation and Weapons School Beddown Environmental Impact Statement*, Report of the Air Combat Command, [Online] Available at: <http://www.nellis.af.mil/shared/media/document/AFD-080404-038.pdf>

⁵⁹ Sanders, B. (2009), p. 115.

⁶⁰ United States Government Accountability Office (2014) *F-35 Joint Strike Fighter Problems Completing Software Testing May Hinder Delivery of Expected Warfighting Capabilities*, Report to Congressional Committees, [Online] Available at: <http://www.gao.gov/assets/670/661842.pdf>

⁶¹ *Ibid*.

⁶² See F-35A Conventional Takeoff and Landing Variant on the Lockheed Martin web site here: <http://www.lockheedmartin.com/us/products/f35/f-35a-ctol-variant.html>

⁶³ Sanders, B. (2009) *The Green Zone: The Environmental Costs of Militarism*. Oakland: AK Press.

Netherlands, Norway, Turkey, and the United Kingdom. Countries hope to use this energy inefficient, carbon-emitting plane over the coming decades. This represents the problem of the “lock-in” effect, whereby highly energy-inefficient products, such as this fighter jet, are used for a long-time and have protracted adverse climate and environmental impacts.]

3.3 Military Exemptions and the Kyoto Protocol

In 2009, American journalist Sarah Flounders released a story, “Add Climate Havoc to War Crimes: Pentagon’s Role in Global Catastrophe,” about the DoD’s climate impacts. She questioned the absence of military emissions on the UNFCCC agenda at the COP 15 negotiations in Copenhagen.⁶⁵ Her story along with many others that year about the military’s impact on the climate were ignored by mainstream media but given the top award by Project Censored in 2010, “US Department of Defense is the Worst Polluter on the Planet.”⁶⁶ Flounders wrote, “By every measure, the Pentagon is the largest institutional user of petroleum products and energy in general. Yet the Pentagon has a blanket exemption in all international climate agreements.”

In 1997 in Japan, under the UNFCCC, the international community negotiated the Kyoto Protocol, a legally binding treaty with targets for greenhouse gas emission reductions for 38 of the most industrialized countries, which are the countries the most responsible for global warming. The then U.S. Vice-President Al Gore joined the American negotiating team in Kyoto and that year U.S. President Bill Clinton signed the treaty. The protocol requires states to publish reports on the mitigation of emissions from the energy, transport and industry sectors, such as agriculture, forestry and waste management.⁶⁷ However, the American negotiating team was able to secure exemptions to reduce greenhouse gases for the military sector. This was confirmed by the U.S. Under Secretary for Economic, Business, and Agricultural Affairs, Stuart Eizenstat, who led the American negotiating team in Japan. On February 11, 1998, Eizenstat appeared before the U.S. Senate’s Committee on Foreign Relations in a hearing on *Implications of The Kyoto Protocol on Climate Change* and discussed the negotiations:

We took special pains, working with the Defense Department and with our uniformed military, both before and in Kyoto, to fully protect the unique position of the United States as the world’s only super power with global military responsibilities. We achieved everything they outlined as necessary to protect military operations and our national security. At Kyoto, the parties, for example, took a decision to exempt key overseas military activities from any emissions targets, including exemptions for bunker fuels used in international aviation and maritime transport and from emissions resulting from multilateral operations.⁶⁸

The U.S. Secretary of Defense at the time was Republican William Cohen who was appointed to the post by President Clinton. Cohen warned the White House that “We must not sacrifice our national security... to achieve reductions in greenhouse gas emissions.”⁶⁹ He was supported by an ad hoc group called the Committee to Preserve Security and Sovereignty (COMPASS), which was comprised of former government officials and foreign policy analysts. COMPASS mobilized to ensure that the military was exempted from any

⁶⁴ See F-35A Conventional Takeoff and Landing Variant on the Lockheed Martin web site here:

<http://www.lockheedmartin.com/us/products/f35/f-35a-ctol-variant.html>

⁶⁵ United States Air Force (2011).

⁶⁶ Project Censored (2010) *US Department of Defense is the Worst Polluter on the Planet*, [Online] Available at: <http://www.projectcensored.org/2-us-department-of-defense-is-the-worst-polluter-on-the-planet/>

⁶⁷ United Nations (1998) *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, [Online] Available at: <http://unfccc.int/resource/docs/convkp/kpeng.pdf>

⁶⁸ United States (1998) *Implications of The Kyoto Protocol on Climate Change Hearing*, Committee On Foreign Relations United States Senate, One Hundred Fifth Congress, Second Session, February 11, 1998, [Online] Available at: <http://www.gpo.gov/fdsys/pkg/CHRG-105shrg46812/pdf/CHRG-105shrg46812.pdf> P. 46

⁶⁹ Greenpeace USA (1998) *Why Do Foreign Policy Experts Say Kyoto is Bad for America?* Documents related to COMPASS, [Online] Available at: <http://research.greenpeaceusa.org/?a=download&d=4196>

emission targets during the negotiations and lobbied the Senate not to ratify the Kyoto Protocol. A COMPASS letter to the White House warning that the Kyoto Protocol threatened to limit American military power was co-signed by Jeane Kirkpatrick, the former U.S. Ambassador to the United Nations, Richard Burt, the former U.S. Chief Arms Control negotiator, and Dick Cheney, the former Secretary of Defense, among others.⁷⁰ In 1997, by a vote of 95-0, the Senate passed the Byrd-Hagel resolution to prevent the ratification of the Kyoto Protocol.⁷¹ It was then Republican Senator Chuck Hagel, now the U.S. Secretary of Defense, who co-led with Democratic Senator Robert Byrd the campaign against the Kyoto Protocol in Congress. The following year, it passed the *National Defense Authorization Act* that expressly exempted the U.S. military from the climate treaty. Clause 1210 stated,

Notwithstanding any other provision of law, no provision of the Kyoto Protocol to the United Nations Framework Convention on Climate Change, or any regulation issued pursuant to such protocol, shall restrict the procurement, training, or operation and maintenance of the United States Armed Forces.⁷²

Though the U.S. never ratified the Kyoto Protocol, its ability to negotiate military exemptions allowed exemptions to apply to the militaries of all countries. Today, the U.S. Energy Information Administration is explicit about military exemptions. In its latest report, *Emissions of Greenhouse Gases*, the EIA states:

UNFCCC definition of energy consumption excludes international bunker fuels, emissions from international bunker fuels are subtracted from the U.S. total. Similarly, emissions from military bunker fuels are also subtracted from the U.S. total.⁷³

As well, in its latest *World Energy Statistics* the International Energy Agency confirms that the military is excluded from the fuel accounting in the categories for international marine bunkers and transport for all countries.⁷⁴

3.4 Measuring and Making Sense of Greenhouse Gas Emissions of the Military

There is no definitive, comprehensive data on greenhouse gas emissions from the military sector because of exemptions and confidentiality. Nevertheless, under the UNFCCC, Annex 1 countries are required to submit annual greenhouse gas inventories to the Secretariat in Bonn, Germany. Since a 2003 agreement at the 8th Conference of the Parties in New Delhi, India, these submissions have been available on the web and include the following:

- Common reporting format (CRF) – a series of standardized data tables containing mainly numerical information and submitted electronically; and
- National Inventory Report (NIR) – a comprehensive description of the methodologies used in compiling the inventory, the data sources, the institutional structures and quality assurance and control procedures.⁷⁵

⁷⁰ Greenpeace USA (1998) *Why Do Foreign Policy Experts Say Kyoto is Bad for America?* Documents related to COMPASS, [Online] Available at: <http://research.greenpeaceusa.org/?a=download&d=4196>

⁷¹ See U.S. Senate Resolution 98, 105th Congress, 1st Session, here: <http://www.gpo.gov/fdsys/pkg/BILLS-105sres98ats/pdf/BILLS-105sres98ats.pdf>

⁷² United States (1999) *National Defense Authorization Act*, that prohibited the US military from being bound by the Kyoto Protocol H.R. 3616, [Online] Available at: <http://www.gpo.gov/fdsys/pkg/BILLS-105hr3616pcs/pdf/BILLS-105hr3616pcs.pdf>

⁷³ United States (2009) *Emissions of Greenhouse Gases in the United States 2009*, U.S. Energy Information Administration Report, [Online] Available at: [http://www.eia.gov/environment/emissions/ghg_report/pdf/0573\(2009\).pdf](http://www.eia.gov/environment/emissions/ghg_report/pdf/0573(2009).pdf)

⁷⁴ International Energy Agency (2013) *Key World Energy Statistics*. [Online] Available at: <http://www.iea.org/publications/freepublications/publication/KeyWorld2013.pdf> p. 62 and 65

⁷⁵ National Inventory Submissions: https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php

According to the UNFCCC *Reporting Guidelines on Annual Inventories*, reporting should be transparent, consistent, comparable, complete and accurate. However, clause 27 states, “Emissions and removals should be reported at the most disaggregated level of each source/sink category, taking into account that a minimum level of aggregation may be required to protect confidential business and military information (emphasis added).”⁷⁶ This is the confidentiality clause that the military can use to not report emissions.

For National Inventory Report (NIR) accounting, there is some reporting of military fuel consumption and emissions. This can be found by looking at the NIR submitted by a country, for example Norway. In its NIR, there is a table labelled “Table 1.A, Sectoral Background Data for Energy”, where it lists domestic military fuels in the row labelled “Other” (1.A.5b) and sub-divided into the category “Military-Stationary” (1.A.5a) and “Military-Mobile” (1.A.5b) and these figures are used to determine the Norwegian military’s CO₂ emissions.⁷⁷ However, this amount refers to domestic military transportation in or from the country. It does not include the amount purchased and used overseas. There is a separate row for estimating international bunker fuels, which include the military, but those amounts are not used to calculate a country’s total fuel use or emissions and may not be reported. The U.S. Energy Information confirms that emissions from military bunker oil is excluded from the U.S. NIR total.⁷⁸ The U.S. government also admits this in its NIR,

Uncertainties exist with regard to the total fuel used by military aircraft and ships, and in the activity data on military operations and training that were used to estimate percentages of total fuel use reported as bunker fuel emissions. Total aircraft and ship fuel use estimates were developed from DoD records, which document fuel sold to the Navy and Air Force from the Defense Logistics Agency. These data may slightly over or under estimate actual total fuel use in aircraft and ships because each Service may have procured fuel from, and/or may have sold to, traded with, and/or given fuel to other ships, aircraft, governments, or other entities.⁷⁹

The incompleteness and uncertainty of the accuracy of the military fuel consumption reveals the weaknesses of the IPCC reporting guidelines. In addition, the problem with the IPCC reporting is evident by how the U.S. reports its energy consumption by fuel and vehicle type in its latest NIR. In its report, there is a table titled “Table A-90” in which there is a category “Jet Fuel” that is further sub-divided into “Military Aircraft.”⁸⁰ For military aircraft fuel consumption, the U.S. estimated that 2,167 million gallons of oil were used in 2000. Yet, the amount dropped to 1,860 million gallons at the height of the war in Iraq and declined more to only 1,074 million gallons during the bombing of Libya. It is hard to believe that while fighting two wars and bombing another country simultaneously, that military aircraft fuel consumption over the past decade has gone down as the U.S. claims in its NIR. Worse, the U.S. Energy Information Administration projects that oil consumption for the military will increase from 2011 to 2040 with an annual growth rate of 0.3%.⁸¹ How will this impact the carbon budget?

⁷⁶ United Nations (2006) *Updated UNFCCC reporting guidelines on annual inventories following incorporation of the provisions of decision 14/CP.11*, United Nations Framework Convention on Climate Change [Online] Available at: <http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf>

⁷⁷ To see how military fuel use and GHG emissions are presented in a National Inventory Report, please view Norway’s submission, which can be downloaded here:

https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php and viewed here: <http://www.miljodirektoratet.no/Documents/publikasjoner/M138/M138.pdf>, look at the U.S. NIR too.

⁷⁸ United States (2009) *Emissions of Greenhouse Gases in the United States 2009*, U.S. Energy Information Administration Report, [Online] Available at:

[http://www.eia.gov/environment/emissions/ghg_report/pdf/0573\(2009\).pdf](http://www.eia.gov/environment/emissions/ghg_report/pdf/0573(2009).pdf)

⁷⁹ United States (2014) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*, U.S. Environmental Protection Agency, National Inventory Report, [Online] Available at:

https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php

⁸⁰ *Ibid.*

⁸¹ United States (2014) *Annual Energy Outlook 2014 with Projections to 2040*. U.S. Energy Information Administration, [Online] Available at: [http://www.eia.gov/forecasts/aeo/pdf/0383\(2014\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2014).pdf), see Table A7.

In addition, Liska and Perrin argue in their article, *Securing Foreign Oil*, that military activities related to the protection and acquisition of crude oil from abroad be included in carbon emission reporting and climate policy. They explain, “Life cycle GHG emissions calculations associated with U.S. gasoline production and use have included emissions from the extraction and shipping of oil as well as combustion, but related military security emissions have been omitted as direct components of the production life cycle.”⁸² This shows the problem with IPCC reporting because international bunker fuels are not included in national reporting and the military is given a confidentiality cover. The full carbon and environmental impacts of the military’s operations should be known.

4.0 Financing to Protect the Climate or Prepare for War?

The World Meteorological Organization and the United Nations Environment Programme established the IPCC in 1988. At that time, working groups were established to develop the foundation for a treaty on greenhouse gas reductions. The Response Strategies Working Group (Working Group III) was tasked to develop principles, such as “common but differentiated responsibilities,” mitigation strategies, such as emission reduction scenarios, and implementation methods, such as technology transfer, economic measures and financial mechanisms to achieve those reductions.⁸³ In their 1990 report, *Climate Change: The IPCC Response Strategies*, under Chapter 10 “Financial Mechanisms,” the working group considered various financial mechanisms to pay for mitigation and noted,

A number of possible sources for generating financial resources were considered... Creative suggestions include using official resources, which might result from savings on government energy bills and lower levels of military expenditures...⁸⁴

In 1990, military expenditures were US \$1.5 trillion in constant dollars (adjusted for inflation based on 2011 US currency value). The Soviet Union had collapsed and the Cold War had ended, it was hoped that military spending would be reduced and the “peace dividend” would be invested in sustainable development programs. Instead the U.S. led a coalition of countries to start the First Gulf War against Iraq and secure its access to one of the largest reserves of oil in the Middle East. For the past two decades, the international community has struggled to fund mitigation and adaption to the climate crisis, yet it has had no difficulty in paying for war. Since that 1990 IPCC report, there does not appear to be another reference to military spending reductions to pay for climate mitigation and adaption in a formal report by an IPCC working group. However, in 2011, the Executive Secretary of the UNFCCC, Christiana Figueres, said in a speech to the Congress of Deputies of Spain,

Decisions on future defence spending are intricately linked to decisions on immediate climate investment through the different future risk assessments. What will be better? To continue to support a traditional global military budget that has risen 50 percent in real terms from 2000 to 2009 and continues to increase? Or to increase a preventive military budget investing into adaptation and low-carbon growth and avoid climate chaos that would demand a defence response that makes even today’s spending burden look light? Even under current trends, the rate of defence spending growth could account for a major part of the money needed to cut global emissions and to help the vulnerable, often in the most unstable areas of the world, to protect their societies from crumbling under climate pressures.⁸⁵

⁸² Liska, A. and Perrin, R. (2010) “Securing Foreign Oil: A Case for Including Military Operations in the Climate Change Impact of Fuels,” *Environment*, July-August, [Online] Available at:

<http://www.environmentmagazine.org/Archives/Back%20Issues/July-August%202010/securing-foreign-oil-full.html>

⁸³ IPCC (1990) *Climate Change: The IPCC Response Strategies*. Report prepared for Intergovernmental Panel on Climate Change by Working Group III, [Online] Available at:

https://www.ipcc.ch/publications_and_data/publications_ipcc_first_assessment_1990_wg3.shtml

⁸⁴ *Ibid.*

⁸⁵ Figueres, C. (2011) *Address by Christiana Figueres, Executive Secretary United Nations Framework Convention on Climate Change to the Congress of Deputies of Spain*, [Online] Available at:

The UNFCCC's Executive Secretary words must be remembered and repeated at upcoming COP meetings to remind countries of how the costs of climate mitigation and adaption can be covered.

4.1 Costs of Climate Mitigation and Adaptation and the Costs of Inaction

Countries are faced with huge financial costs for climate action or inaction. Though there are different estimates about the financial costs required for mitigating and adapting to climate change over the coming years, they all show massive investments in the billions of dollars. The International Energy Agency (IEA) calculated total additional investment needs for the period 2010-2050 are USD \$45 trillion for transforming to a low-carbon energy system.⁸⁶ This is approximately \$1 trillion a year for the next forty years and roughly equivalent to annual military expenditures, in order to halve greenhouse gases and stabilize the climate. In its 2014 IPCC assessment, WG2 highlighted the gap between global adaptation needs and the funding available for meeting those needs, such as infrastructure to prepare for sea-level rise, increase in public transportation, retrofitting and weathering homes and buildings.⁸⁷ For the upscaling of renewable energy, the International Renewable Energy Agency (IRENA) explained in its recent report, *REmap 2030: A Renewable Energy Roadmap*, that incremental energy system costs and investments that were needed are at least \$398 billion annually to 2030.⁸⁸ If mitigation and adaption are delayed or avoided, countries face severe adverse impacts on the economy and society, as confirmed by the IPCC, the IEA and the newly released White House report.⁸⁹ The socioeconomic costs of inaction are revealed by the billions of dollars of property damage and the thousands of people who lost their lives or livelihoods in Hurricane Katrina in 2005 and Super storm Sandy in 2012 in the United States; the heat wave across Europe in 2006; Typhoon Haiyan in the Philippines in 2013, and the massive flooding in England and Serbia this year. As well, this June, co-chairman of the U.S. Council on Foreign Relations and former U.S. Treasury Secretary Robert Rubin, published an article, *How Ignoring Climate Change could sink the U.S. Economy*, in the Washington Post. He cited the new web site and report called *Risky Business* that warns of the economic costs of climate change from increased extreme weather events.⁹⁰ The costs of inaction are not only economic, but social and environmental as climate change threatens the well-being of communities and the biosphere, the zone of life on earth.

4.2 Climate Financing

At the World Economic Forum in Davos, Switzerland this January, the UN Secretary-General Ban Ki-moon said, "To achieve the large-scale transformation necessary to stabilize the climate, countries not only need to send the right policy signals and meet their climate finance commitments but also set much bolder targets. Climate finance is an investment in the future. It must not be taken hostage by short-term budget considerations."⁹¹ Developing countries have called on wealthy nations to commit to 0.5 to 1% their gross domestic products (GDP) to climate finance, a sum that would add up to US \$200-400 billion transferred

http://unfccc.int/files/press/statements/application/pdf/speech_seguridad_20110215.pdf

⁸⁶ International Energy Agency (2008) *Energy Technology Perspectives 2008*, Fact Sheet – The Blue Scenario. [Online] Available at: http://www.iea.org/techno/etp/fact_sheet_ETP2008.pdf

⁸⁷ IPCC (2014) *Summary for policymakers*. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. [Online] Available at: http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf *Ibid*, p. 28

⁸⁸ IRENA (2014) *REmap 2030: A Renewable Energy Roadmap*, June 2014. IRENA, Abu Dhabi. [Online] Available at: www.irena.org/remap

⁸⁹ United States (2014) *The Cost of Delaying Action to Stem Climate Change*, Office of the President, , [Online] Available at:

http://www.whitehouse.gov/sites/default/files/docs/the_cost_of_delaying_action_to_stem_climate_change.pdf

⁹⁰ Rubin, R. (2014) "How Ignoring Climate Change could sink the U.S. Economy," *The Washington Post*, [Online] Available at: http://www.washingtonpost.com/opinions/robert-rubin-how-ignoring-climate-change-could-sink-the-us-economy/2014/07/24/b7b4c00c-0df6-11e4-8341-b8072b1e7348_story.html?utm_content=buffera0d48&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

⁹¹ See "Big Idea 2014: The Year for Climate Action by Ban Ki-moon" here:

<http://www.un.org/climatechange/summit/2013/12/big-idea-2014-the-year-for-climate-action-by-ban-ki-moon/>

every year.⁹² This is equivalent to 15-25% of global military expenditures. By contrast, the North American Treaty Alliance (NATO) pushes countries to invest 2% of GDP in their military budgets and many countries exceed that target. This year, the U.S. pressed NATO members to increase military spending to respond to the crisis in Ukraine.⁹³ As countries are increasing their military budgets, they are stalling their climate finance commitments. The Institute for Environment and Development determined that from 2002 to 2008, over \$18 billion was pledged by developed countries to developing countries for climate change mitigation and adaptation, but only \$1 billion was disbursed.⁹⁴ Climate finance is a matter of justice, as countries that have emitted the most to achieve their state of development owe a debt to pay for the historic damage and to help poor, developing countries that are most at risk to climate change to cope and develop in a low-carbon way. Due to the inadequate and voluntary nature of climate financing since the Kyoto Protocol came into force, parties negotiated to improve the funding mechanism and established the UN Green Climate Fund.

4.3 The Green Climate Fund

In 2010, under the UNFCCC Cancun Agreement, *Financial, Technology and Capacity-building support*, the developed countries made a commitment to invest \$100 billion annually by 2020 for a Green Climate Fund.⁹⁵ The fund is a financial mechanism to support mitigation and adaptation programmes and policies in developing countries. They need predictable and stable financial assistance to confront the challenges of climate change for which they are not responsible.⁹⁶ The GCF is an economic obligation of wealthy, industrialized countries to poor, developing countries to help them move towards low-emission and climate-resilient development pathways. GCF is a climate debt of the developed countries to the developing countries. They have a right to sustainable development that requires both climate financing and a continuation of overseas development assistance (ODA). ODA is still required by developing countries to fund a post-2015 development plan. Many poor countries worry that the GCF will displace ODA and this must not be permitted. In a speech, the UN Secretary-General declared, "The new Green Climate Fund has been built to be a key global channel for funding. It is essential that it is well capitalized."⁹⁷ However, developed countries have pledged very little to meet the GCF target. Germany recently announced \$1 billion in funding but the European Commission has refused to contribute.⁹⁸ Yet the amount needed for the GCF is less than 10% of annual military expenditures.

In 2010, the UN Secretary-General appointed an expert group to determine how to raise capital for the climate crisis. The *High-Level Advisory Group on Climate Change Financing* determined that putting a price on carbon and making direct budget contributions were two key funding sources but also emphasized the role of private investment. Developing countries have criticized any reliance on the private sector to help capitalize the new climate fund. The group did not consider a reduction of military expenditures for climate financing. The co-chair of the *High-Level Advisory Group* at the time was Jens Stoltenberg, the then Prime Minister of Norway. Two years before his appointment to head the advisory group, Stoltenberg signed a controversial deal to buy the carbon-intensive Lockheed Martin F-35 Stealth Fighters. Norway is spending \$10 billion to purchase 52 F-35s by 2027, these are fighter jets that wreck the climate and this is money that

⁹² International Institute for Environment and Development (2009) *Billions at stake in climate finance: four key lessons*. Briefing for the International Institute for Environment and Development, [Online] Available at: <http://pubs.iied.org/17075IIED.html>

⁹³ MacAskill, E. (2014) "US presses Nato members to increase defence spending," *The Guardian*, [Online] Available at: <http://www.theguardian.com/world/2014/jun/23/us-nato-members-increase-defence-spending>

⁹⁴ International Institute for Environment and Development (2009).

⁹⁵ See Cancun Agreements for *Financial, Technology and Capacity-building support* here: <http://cancun.unfccc.int/financial-technology-and-capacity-building-support/new-long-term-funding-arrangements/>

⁹⁶ International Institute for Environment and Development (2009).

⁹⁷ Ki-Moon, B. (2014) Speech of the Secretary-General, Addressing the European Forum, SG/SM/15748 [Online] Available at: <http://www.un.org/News/Press/docs/2014/sgsm15748.doc.htm>

⁹⁸ Morales, A. and Parkin (2014) "Germany Pledges \$1 Billion to UN Green Climate Fund," *Bloomberg*, [Online] Available at: <http://www.bloomberg.com/news/2014-07-16/germany-pledges-1-billion-to-un-green-climate-fund.html>

could be spent on sustainable development for poor countries.⁹⁹ Not surprisingly, earlier this year, Stoltenberg was appointed NATO's new Secretary-General.¹⁰⁰ According to the Stockholm International Peace Research Institute (SIPRI), Norway's military expenditure is the highest in Europe steadily rising to a high of \$US7 billion and according to the OECD, Norway has one of the highest carbon emissions per capita in Europe.¹⁰¹ Strangely, Stoltenberg was also selected by the UN Secretary-General to be new UN Special Envoy for Climate Change.¹⁰²

4.4 The Problem of Global Military Spending and the Prioritization of Warfighting

Last year, countries spent a combined \$1.7 trillion on military expenditures as calculated and defined by SIPRI.¹⁰³ Table 2 shows the top 16 countries that spent the most on their militaries, the percentage of GDP, their share of the arms trade, and their per capita carbon dioxide. By contrast, for the same year, the Organisation for Economic Co-operation and Development (OECD) estimated that donor countries gave \$126 billion for ODA, which is less than 10% of the global military budget.¹⁰⁴ This contrast represents the problem of military spending: prioritizing warfighting and not human welfare. At the IPB seminar for the Global Day of Action on Military Spending at the United Nations in Geneva this year, the UN Under-Secretary-General Michael Møller said in his speech,

Excessive military spending has vast hidden human costs. It saps away the resources required to better address global challenges such as climate change, food security, and global epidemics. It obstructs resources to flow towards eradicating poverty, providing basic health care, sanitation, education and infrastructure.¹⁰⁵

The problem of military spending has been raised with many different UN agencies: the United Nations Office for Disarmament Affairs, the United Nations Human Rights Council, the UNFCCC, the IPCC, and UNEP, but the reductions that are needed for climate change and sustainable development have not materialized.

According to SIPRI, the U.S. spends the most on its military at \$640 billion, which accounts for 37% of the global total (Figure 4). China is second at approximately \$188 billion and accounts for 11% of global military spending. The U.S. spends more on its military than almost all other countries combined. As well, the U.S. spends more on the military than almost all other discretionary spending combined, including domestic food, housing, education, and transportation programs.¹⁰⁶ More troubling is the fact that the U.S. Government Accountability Office (GAO) has not been able to audit the DoD since 1995 and has deemed

⁹⁹ Agence France-Presse (2012) "Norway orders first two F-35 fighters as part of \$10bn deal," [Online] Available at: <http://www.defencetalk.com/norway-orders-first-two-f-35-fighters-as-part-of-10bn-deal-43225/>

¹⁰⁰ See NATO press release here: http://www.nato.int/cps/en/natohq/news_108390.htm and UN announcement here: <http://www.un.org/climatechange/blog/2013/12/secretary-general-appoints-special-envoys-on-climate-change-to-engage-global-leaders-ahead-of-2014-climate-summit/>

¹⁰¹ See the Stockholm International Peace Research Institute's Military Expenditure database here: <http://www.sipri.org/research/armaments/milex> and see OECD Statistics for Greenhouse Gas Emissions here: http://stats.oecd.org/Index.aspx?DataSetCode=AIR_GHG

¹⁰² See announcement by Norwegian government here "Jens Stoltenberg becomes UN special envoy on Climate Change" here: <http://www.norway-un.org/News/News-2013/Jens-Stoltenberg-becomes-UN-special-envoy-on-Climate-Change/#.VBTSLfRDvuE>

¹⁰³ Stockholm International Peace Research Institute (2014) *Trends in World Military Expenditure, 2013*. SIPRI Fact Sheet, [Online] Available at: http://books.sipri.org/product_info?c_product_id=476

¹⁰⁴ See Organisation for Economic Co-operation and Development (OECD) *Statistics*, under heading "Development Aid" here: <http://www.oecd.org/statistics/>

¹⁰⁵ Møller, M. (2014) "Military Expenditure and its Relationship to the Purposes of the United Nations," Speech by Michael Møller, United Nations Under-Secretary-General and Acting Director-General, United Nations Office at Geneva, [Online] Available at: [http://www.unog.ch/unog/website/dg.nsf/\(httpSpeechesByYear_en\)/CAFAC1EEC1BD96FDC1257CBC0025FAF9?OpenDocument](http://www.unog.ch/unog/website/dg.nsf/(httpSpeechesByYear_en)/CAFAC1EEC1BD96FDC1257CBC0025FAF9?OpenDocument)

¹⁰⁶ See "Discretionary Spending" at the *National Priorities Project* here: <https://www.nationalpriorities.org/>

the department to be of high risk for waste, fraud and abuse.¹⁰⁷ In its latest biennial report, the GAO, stated:

DOD is one of the few federal entities that cannot accurately account for its spending or assets and is one of three major impediments that prevent GAO from rendering an opinion on the annual consolidated financial statements of the federal government. Without accurate, timely, and useful financial information, DOD is severely hampered in making sound decisions affecting its operations.¹⁰⁸

Despite the GAO's inability to audit the books of the DoD, the U.S. Congress continues to increase the funding to the department and approve new defence procurement. As the DoD cannot properly prepare its financial books, it is hard to trust the department's climate and environmental reporting. Moreover, the U.S. military, like all militaries, is engaged in classified operations and the budget associated with covert actions or secret weapons programs are not publicly reported. The secretive nature of military operations and budgets make them undemocratic and problematic. Military spending's lack of transparency and undermining of democracy were raised in a recent report by Alfred de Zayas, the independent expert on the promotion of a democratic and equitable international order delivered to the United Nations Human Rights Council this month.¹⁰⁹ Zayas recommended that citizens should have more input in national priority-setting and budget-making and that military budgets be reduced to meet the most pressing societal and environmental needs.

From the latest assessment reports of the IPCC we know how grave climate change is, and yet countries are decreasing their environmental budgets and increasing their military budgets. This is revealed by comparing and contrasting how much countries give to their Ministries of Environment versus their Departments of Defence:

- In 2013, the United States spent \$640 billion on the Pentagon but only \$8.3 billion on the Environmental Protection Agency and \$27 billion on the Department of Energy that is responsible for renewable energy programs. Many parts of the U.S. are in severe, protracted drought, which have adversely affected water and agriculture.¹¹⁰
- Last year, the UK allocated £37 billion on the Ministry of Defence but only £1.2 for the Ministry of Energy & Climate Change and £1.9 for the Department of Environment, Food and Rural Affairs (Defra). The British Parliament web site states, "Defra is one of the smallest of Government Departments but it has faced among the most substantial budget cuts, which are set to continue up to 2016."¹¹¹ The UK was hit with one of its worst flash floods this year.
- In its latest audited accounts, the Canadian government gave CAD \$23 billion to National Defence but only CAD \$1.5 billion to Environment Canada, the lead agency on climate change.¹¹² Over the past fifteen years, the government has increased the budget for National Defence but has stalled the budget for Environment Canada (Figure 5:) In the latest departmental reports on plans and priorities, they show that the federal government is going to cut Environment Canada's budget by more than half within the next two years as it has been cutting environmental regulations to

¹⁰⁷ United States (2013) *High-Risk Series: An Update, Report to Congressional Committees*, Government Accountability Office (GAO) [Online] Available at: <http://www.gao.gov/assets/660/652133.pdf> p. 134

¹⁰⁸ *Ibid.*

¹⁰⁹ Zayas, A. (2014) Third Report to Human Rights Council, A/HRC/27/51, [Online] Available at: <http://www.ohchr.org/EN/Issues/IntOrder/Pages/IEInternationalorderIndex.aspx#sthash.p3TTfdWq.dpuf>

¹¹⁰ See SIPRI data for military spending in Table 2 and U.S. Office of Management and Budget here: http://www.whitehouse.gov/omb/factsheet_department_epa

¹¹¹ See SIPRI data for military spending in Table 2 and the UK DEFRA Annual Report here: <http://www.parliament.uk/business/committees/committees-a-z/commons-select/environment-food-and-rural-affairs-committee/news/publication-of-dar-report/>

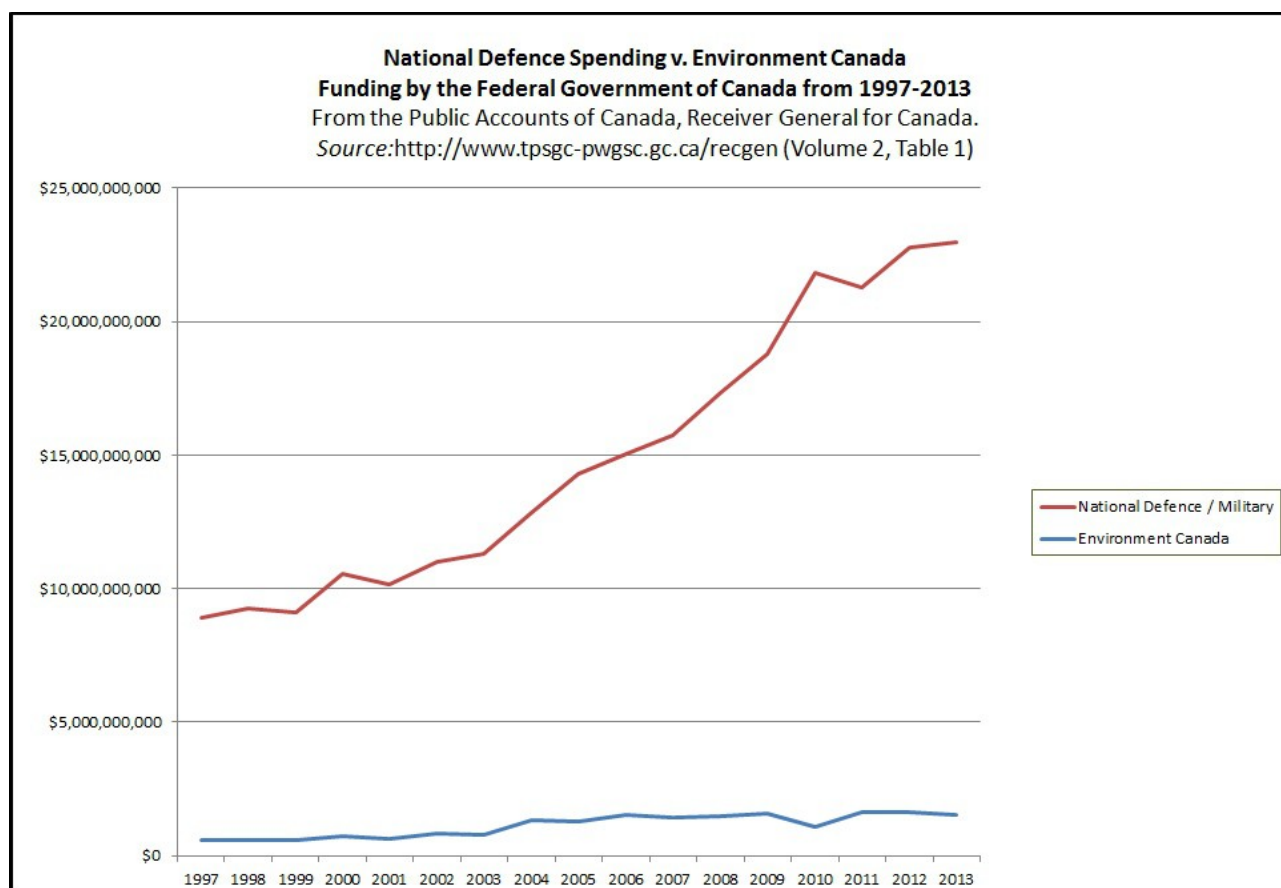
¹¹² See SIPRI data for military spending in Table 2 and Environment Canada's budget and planned cuts in its Plans & Priorities here: <https://www.ec.gc.ca/default.asp?lang=En&n=024B8406-1&offset=3&toc=show>

maintain the massive tar sands project in Alberta. Canada also abrogated from the Kyoto Protocol in 2011.

- Australia spent USD \$24 billion on its Department of Defence but only USD \$2.3 billion (=AUD \$2.6 billion) on its Sustainability, Environment, and Water Portfolio across many departments and agencies and recently repealed the carbon tax even though the country has experienced severe water shortages.¹¹³

This examination of military spending and national budgets reveals the fundamental problem: countries are prioritizing warfighting instead of protecting the climate.

Figure 5: Public Accounts, National Defence Spending v. Environment Canada from 1997-2013.



¹¹³ See SIPRI data for military spending in Table 2 and Australia Budget Statements For Sustainability, Environment, Water, Population And Communities Portfolio <http://www.environment.gov.au/system/files/resources/79729f3e-f830-4c8f-9e03-a712e276dd06/files/pbs-portfolio-budget-statements-2013-14.pdf>

Table 2: Military Spending by Top 16 Countries, Share of Arms Exports and CO₂ per capita

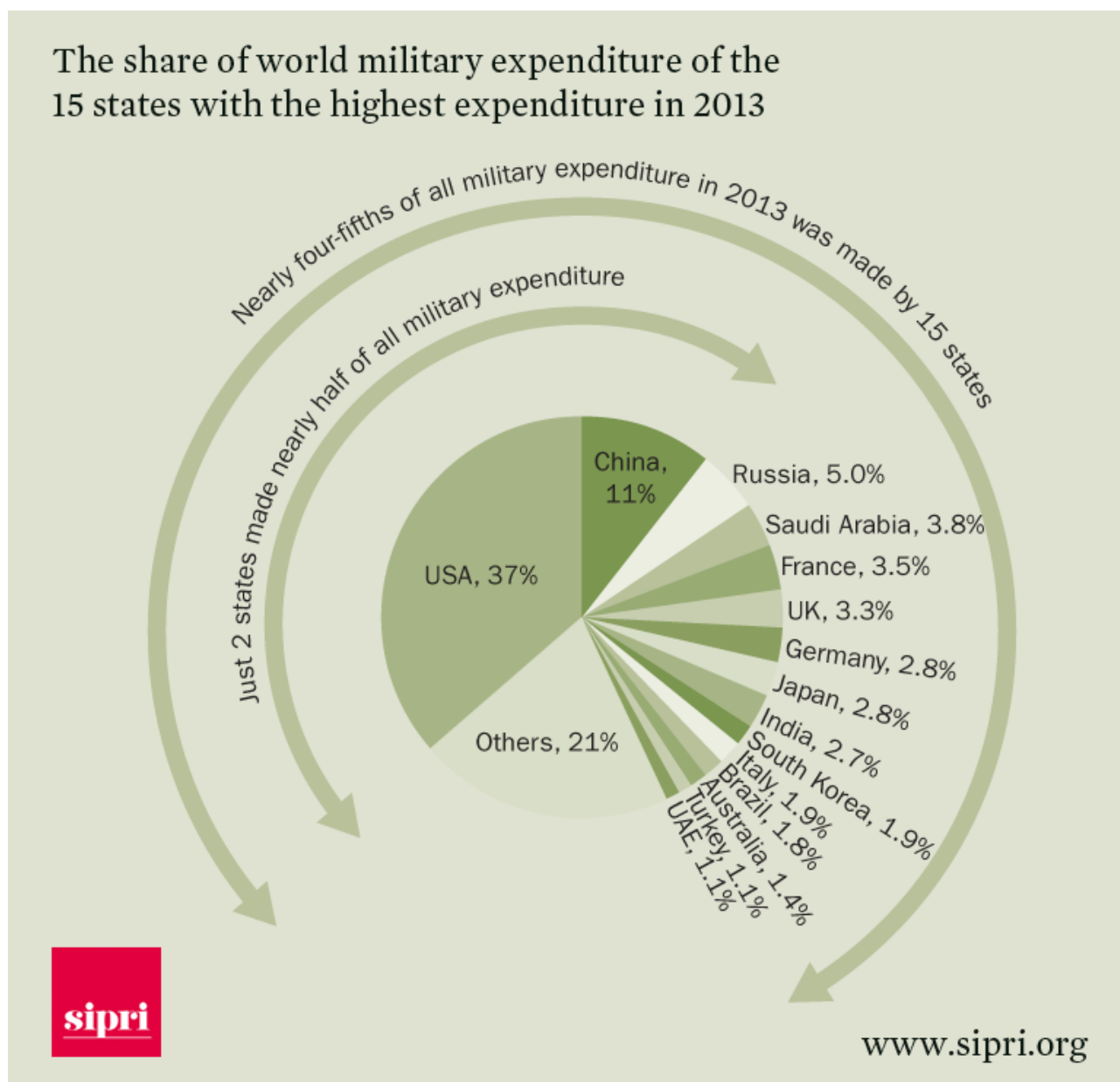
| Military Spending Ranking 2013 | Military Spending Ranking 2012 | Country | Military Spending 2013 (US\$ billion) | Military Spending as a share of GDP (%) | Share of international arms exports (%) 2009-13 | Carbon Dioxide per person (Metric tons) 2012 |
|--------------------------------------|--------------------------------|----------------------------|---------------------------------------|---|---|--|
| 1 | 1 | United States | 640 | 3.8 | 29 | 16.4 |
| 2 | 2 | China | [188] | [2.0] | 6 | 7.1 |
| 3 | 3 | Russia | [87.8] | [4.1] | 27 | 12.4 |
| 4 | 7 | Saudi Arabia | 67 | 9.3 | Note: 1 st main client importer of UK weapons (42%) | 16.2 |
| 5 | 4 | France | 61.2 | 2.2 | 5 | 5.8 |
| 6 | 6 | United Kingdom | 57.9 | 2.3 | 4 | 7.7 |
| 7 | 9 | Germany | 48.8 | 1.4 | 7 | 9.7 |
| 8 | 5 | Japan | 48.6 | 1.0 | <1 | 10.4 |
| 9 | 8 | India | 47.4 | 2.5 | Note: 1 st main client importer of weapons from Italy (10%) | 1.6 |
| 10 | 12 | South Korea | 33.9 | 2.8 | Note: 2 nd main client importer of U.S. weapons (10%) | 13.0 |
| 11 | 11 | Italy | 32.7 | 1.6 | 3 | 6.3 |
| 12 | 10 | Brazil | 31.5 | 1.4 | <1 | 2.3 |
| 13 | 13 | Australia | 24.0 | 1.6 | Note: 1 st main client importer of the US (10%) | 18.8 |
| 14 | 16 | Turkey | 19.1 | 2.3 | Note: 2 nd main client importer of weapons from Israel (10%) | 3 |
| 15 | 15 | United Arab Emirates (UAE) | [19.0] | 4.7 | Note: 2 nd main client importer of weapons from Italy (9%) | 19.9 |
| 16 | 14 | Canada | 18.4 | 1.0 | <1 | 16.0 |
| Total top 16 | | | 1 426 | Total top 16 | 82 | |
| World Total Military Spending | | | 1 747 | | | |

Source: Stockholm International Peace Research Institute (2014) *Trends in World Military Expenditure, 2013*. SIPRI Fact Sheet, [Online] Available at: http://books.sipri.org/product_info?c_product_id=476

Source: World Bank Carbon Emissions per capita 2010:

<http://data.worldbank.org/indicator/EN.ATM.CO2E.PC/countries>

Figure 4: SIPRI, Share of the world military expenditures of the 15 states with the highest spending, 2013



Source: Stockholm International Peace Research Institute (2013) *SIPRI Yearbook 2013: Armaments, Disarmament and International Security*. London: Oxford University Press, 2013.

5.0 Linking Environment, Peace, Militarism and the Climate Crisis

Over the past four decades, there have been many UN and civil society initiatives that have challenged military spending and militarism from an environmental perspective. These initiatives have promoted the connections between the environment and peace in the context of sustainable development. Over the past five years, there have been significant steps taken by civil society and activists to expose the self-reinforcing relationship between militarism and the climate crisis.

5.1 Peace, Development and Environmental Protection are Interdependent and Indivisible

Peace is integral to sustainable development. In 1983, the UN established the World Commission on Environment and Development. Four years later, the Commission released a ground-breaking report, *Our Common Future*, which defined sustainable development, identified international challenges, and provided cooperative solutions. In the report, the Commission recognized the need to shift military expenditures to meeting environmental and human needs. In Chapter 11 entitled “Peace, Security, Development and The Environment,” the Commission wrote:

The absence of war is not peace; nor does it necessarily provide the conditions for sustainable development. Competitive arms races breed insecurity among nations through spirals of reciprocal fears. Nations need to muster resources to combat environmental degradation and mass poverty. By misdirecting scarce resources, arms races contribute further to insecurity.¹¹⁴

Our Common Future influenced the concluding declaration of the Earth Summit in Rio de Janeiro, Brazil five years later. The *Rio Declaration on Environment and Development* is a list of principles for sustainable development that were agreed to by all the parties at the summit. The declaration states that war is inherently destructive of sustainable development (Principle 24) and calls on states to resolve all their environmental disputes peacefully (Principle 26). Principle 25 declares that “Peace, development and environmental protection are interdependent and indivisible.”¹¹⁵

The *Rio Declaration* accompanies *Agenda 21*, the comprehensive action plan created at the Earth Summit. *Agenda 21* is a voluntary, non-binding program for states to implement to help achieve sustainable development. In Chapter 33 under “Innovative Financing,” clause 16 notes, “New ways of generating new public and private financial resources should be explored, in particular: (e) The reallocation of resources at present committed to military purposes.”¹¹⁶ In 2000, the UNGA adopted the Millennium Declaration, which re-affirmed *Agenda 21* and established the basis for the Millennium Development Goals (MDGs). In our publication, *Opportunity Costs: Military Spending and the UN’s Development Agenda*, the IPB discussed the Millennium Declaration and argued that military spending should be reduced and re-directed to fund the MDGs. *Our Common Future*, the *Rio Declaration* and *Agenda 21* create an historical and environmental foundation upon which to challenge militarism and military spending. It is important to revisit these developments because the current discourse and research on sustainable development, such as by the IPCC and the DDPP, often overlook peace and disarmament.

5.2 The Earth Charter, 2000

After the Earth Summit, civil society organizations engaged in a six-year global dialogue and consultation to develop the shared values and vision for sustainable development. The drafting of *The Earth Charter* is considered the most comprehensive, inclusive and participatory process ever associated with the creation of an international declaration. *The Earth Charter* was finalized and presented at the Peace Palace in The Hague in the Netherlands in 2000 (Annex 2). It is the ethical framework for sustainable development and the foundation for “building a just, sustainable, and peaceful global society in the 21st century.”¹¹⁷ The Charter comprises 16 principles grouped into the following four categories:

I. Respect and Care for the Community of Life

¹¹⁴ United Nations (1987) “Chapter 11: Peace, Security, Development, and the Environment,” In: *Our Common Future: Report of the World Commission on Environment and Development*, [Online] Available at: <http://www.un-documents.net/ocf-11.htm>

¹¹⁵ See the *Rio Declaration on Environment and Development* here: <http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163>

¹¹⁶ United Nations (1992) *Agenda 21*, [Online] Available at: <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>

¹¹⁷ See *The Earth Charter* here: <http://www.earthcharterinaction.org>

- II. Ecological Integrity
- III. Social and Economic justice
- IV. Democracy, Nonviolence and Peace¹¹⁸

Under IV, it states that to promote a culture of tolerance, nonviolence, and peace, national security systems must be “demilitarize[d] to the level of a non-provocative defense posture, and convert military resources to peaceful purposes, including ecological restoration.”¹¹⁹ The *Earth Charter* has been adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Conservation Union (IUCN), but it has not yet been adopted by the UN General Assembly. It was also highlighted by the UN High-Level Panel on Global Sustainability in its 2012 report, *Resilient Planet, Resilient People: A Future Worth Choosing*, though it did not make any recommendations on peace and disarmament.¹²⁰ The demilitarization clause of the *Earth Charter* reflects the will of civil society and should be remembered. The Secretariat in Costa Rica encourages individuals and institutions to endorse and promote *The Earth Charter*.

5.3 People’s Agreement on Climate Change and the Rights of Mother Earth, 2010

In April 2010, Bolivia held the World People’s Conference on Climate Change and the Rights of Mother Earth in the city of Cochabamba. The event was held in response to the failure of the COP15 negotiations in Copenhagen in 2009 to negotiate a new framework for greenhouse gas mitigation to replace the Kyoto Protocol. Frustrated with the formal UNFCCC process, 30,000 civil society representatives and government officials from 100 countries attended the World People’s Conference. The meeting concluded with a *People’s Agreement on Climate Change and the Rights of Mother Earth*. Excerpts of the Agreement are found in Annex 3. It is a comprehensive set of demands to tackle climate change, environmental degradation, inequality and poverty. The Agreement is based on the principles of human rights, harmony, collective well-being, and peace. A significant point in the preamble states:

Capitalism requires a powerful military industry for its processes of accumulation and imposition of control over territories and natural resources, suppressing the resistance of the peoples. It is an imperialist system of colonization of the planet.¹²¹

In relation to climate financing and military spending, the Agreement states:

Current funding directed toward developing countries for climate change and the proposal of the Copenhagen Accord is insignificant. In addition to Official Development Assistance and public sources, developed countries must commit to a new annual funding of at least 6% of GDP to tackle climate change in developing countries. This is viable considering that a similar amount is spent on national defense.¹²²

The People’s Agreement received international media attention and broad civil society support. It is an aspirational and important reference document for global civil society to use to mobilize for COP21.

5.4 Militarism/War: Elephant in the Living Room Resolution, 2010

¹¹⁸ *Ibid.*

¹¹⁹ *Ibid.*, 16(c)

¹²⁰ United Nations (2012) *Resilient Planet, Resilient People: A Future Worth Choosing*, Secretary-General's High-level Panel on Global Sustainability, [Online] Available at: <http://sustainabledevelopment.un.org/index.php?page=view&nr=374&type=400&menu=35>

¹²¹ See *The People’s Agreement on Climate Change and the Rights of Mother Earth* here: <http://globalclimateconvergence.org/2014/08/peoples-agreement-cochabamba-world-peoples-conference-climate-change/>

¹²² *Ibid.*

At the COP16 meeting in Cancun, Mexico in November 2010, an American and Canadian environmental non-governmental organization, Climate SOS, promoted a resolution entitled *War/Militarism: Elephant in the Living Room*. The resolution arose from the Climate Justice Now Network and the United National Peace Conference in which almost a thousand peace activists attended in Albany, New York in July 2010. The resolution highlighted the fact that the U.S. military is the largest emitter of greenhouse gases. It also called for the “redirection of the vast majority of military funding to fund human services, ensure decent quality of life, payment of ecological and climate debt, and compensation to countries and peoples damaged by U.S. militarism” (See Annex 4).

At the Cancun meeting, the resolution was circulated to delegates, given to government officials, copied to the White House, and released to the media. Maggie Zhou, a biologist with Climate SOS and a delegate at the official meeting had her accreditation revoked for her promotion of the resolution. In an interview, Zhou said, “We must shine a spotlight on this issue of military spending.”¹²³ On the last day of COP16, International Human Rights Day, seventy environmental, peace and social justice organizations denounced Zhou’s accreditation revocation and called upon state parties to contend with the problem of militarism and greenhouse gas emissions, which they referred to as the “elephant in the living room,” or they warned that human rights and climate initiatives will fail.¹²⁴ This resolution reflects the attempts made by civil society, without success, to try to bring the concerns about military emissions and expenditures onto the agenda of the UNFCCC.

5.4 Stop the Wars, Stop the Warming Appeal, 2014

In July of this year, peace and justice groups in the United States released the *Peace Appeal: Stop the Wars, Stop the Warming* in advance of the People’s Climate March and UN Climate Summit in New York. The Appeal highlights the dangerous feedback loop of the U.S. military’s exorbitant use of oil for warfighting and its wars for oil and resources that release greenhouse gases and cause global warming. The Appeal declares, “We can’t effectively address climate change without ending war and militarism” (See Annex 5). American supporters are calling on the U.S. government to reduce military spending and shift it to financing a low-carbon economy, “The vast expenditures now consumed by military machines are the very resources needed for a crash program to rapidly create a renewable energy infrastructure and put millions of people to work in green jobs.” The Peace Appeal warns that to avoid worst-case climate disaster U.S. foreign policy must be demilitarized and calls for international cooperation to be strengthened. It has been widely circulated and has local, national and international support including from the IPB. This Appeal also serves an attempt to bring together more closely the peace and environmental movements. Many faith and labour organizations also support the Peace Appeal.

6.0 Peace and Disarmament Pathways for Deep Decarbonization

Pathways to deep decarbonization must incorporate peace and disarmament. The IPB offers six peace and disarmament pathways that will help reduce greenhouse gas emissions, generate financing for climate change mitigation and adaptation, create a green economy, and support climate-resilient communities. We emphasize that these pathways are premised on gender equality, racial and social justice, and respect for the rights of indigenous peoples. The IPB recognizes the powerful voice and position that women have on peace and security issues. The UN Security Council “Women, Peace and Security” suite of resolutions require that women have equal and full participation in the prevention and resolution of conflicts. This must apply to the challenge of climate change as women are disproportionately affected. In her article, *War, Climate Change and Women*, Maryam Roberts wrote:

¹²³ See interview with Dr. Maggie Zhou here on Climate Change TV on Youtube: <http://climatechange-tv.rtcc.org/2010/12/10/maggie-zhou-december-2010/>

¹²⁴ See *War/Militarism: Elephant in the Living Room* here: http://www.climatesos.org/wp-content/uploads/2010/12/Military_Climate_resolution_Dec10_2010_delivery.pdf

Every time war and climate change erode the lives and rights of women, they further damage the fabric of our families, our culture and our societies.¹²⁵

The IPB has outlined the importance of gender perspectives and human security in its 2005 publication, *Warfare or Welfare? Disarmament for Development in the 21st Century*. We also respect the leadership of indigenous people on environmental campaigns, such as the Rights of Nature and Rights of Mother Earth movements. We acknowledge that people in poor communities and developing countries have been subjected to environmental racism and harm and justice is central to solving the climate crisis.¹²⁶ The IPB's pathways of peace and disarmament uphold gender equality, social and racial justice, and the dignity of indigenous peoples.

6.1 Disarm and Demilitarize for Climate Justice and Sustainable Development

Disarmament and demilitarization are vital drivers to climate justice and sustainable development. A climate-focused roadmap for disarmament and demilitarization could be developed by a UN appointed Group of Governmental Experts. In 2002, the General Assembly passed a resolution requesting the UN Secretary General appoint a Group of Governmental Experts to report on the state of the relationship between disarmament and development. The group was mandated to explore progress on the implementation of the action plan developed at the 1987 *International Conference on the Relationship between Disarmament and Development*. The group was also tasked with considering disarmament in the context of the new security environment and the new development agenda, the Millennium Development Goals. Two years later in 2004, the group submitted its report, *The Relationship between Disarmament and Development in the Current International Context*, to the UN Office for Disarmament Affairs (UNODA). In the report, the group explained that disarmament and development are "two distinct, yet mutually reinforcing, processes that are linked by security in all its aspects."¹²⁷ The experts also affirmed that "disarmament and development are two of the international community's most important tools for building a world free from want and fear."¹²⁸ They made several key recommendations:

- Mainstreaming the disarmament-development relationship
- Raising awareness of this relationship in the international community
- Reducing military expenditures
- Engaging in a wide range of conflict-prevention measures
- Promoting security through greater openness, transparency and confidence
- Strengthening the role of the United Nations and other international institutions, including the donor community, towards the aforementioned ends¹²⁹

However, the report gives sparse acknowledgement of the environmental impacts of weapons and war and does not mention climate change. Ten years have passed since the report with climate change accelerating and environmental degradation worsening. An updated disarmament and development report is needed that integrates the climate change and environmental security. A new report would also address the changing international security context with an increasing population and social inequality, widespread use

¹²⁵ Roberts, M. (2009) "War, Climate Change, and Women," *Race, Poverty & the Environment*, Fall, [Online] Available at: <http://www.movementgeneration.org/wp-content/uploads/2009/02/Roberts.Climate.16-2-10.pdf>

¹²⁶ Cameron, E., Shine, T. and Bevins, W. (2013) *Climate Justice: Equity and Justice Informing a New Climate Agreement*. Working Paper. World Resources Institute and Mary Robinson Foundation – Climate Justice, [Online] Available at:

http://www.mrfcj.org/media/pdf/climate_justice_equity_and_justice_informing_a_new_climate_agreement.pdf

¹²⁷ United Nations (2004) *The relationship between disarmament and development in the current international context*. Report of the Secretary-General, Department for Disarmament Affairs, [Online] Available at:

http://www.un.org/disarmament/HomePage/ODAPublications/DisarmamentStudySeries/PDF/DSS_31.pdf

¹²⁸ *Ibid.*

¹²⁹ *Ibid.*

of unmanned aerial vehicles, the opening of the Arctic, and new civil conflicts and uprisings. It may also re-invigorate the UNODA Conference on Disarmament's programme of work. There should be a formal link between the UNODA and UNEP that can move forward a climate and peace agenda.

Most importantly, the militarization of the climate crisis must be challenged. The risks of natural disasters and mass displacement cannot be used as justifications for the maintenance and expansion of the military. The military's purpose is warfighting, not humanitarian aid and disaster relief, which will be what is needed to cope with climate change. *Our Common Future* clearly stated, "There are, of course, no military solutions to 'environmental insecurity'".¹³⁰ As well, the climate must not be another casualty of the U.S. military. The latest U.S. DoD *Quadrennial Defense Review* claims that the impacts of climate change will increase the frequency, intensity and complexity of its future missions, which the DoD prioritizes as warfighting and projecting power.¹³¹ In *Sustaining U.S. Global Leadership: Priorities for the 21st Century Defense*, President Obama and the DoD assured that funding to the military will be maintained so that it is "the best-equipped fighting force in history."¹³² Fighting is not the answer to the climate crisis. As Emily Gilbert in her article, *The Militarization of Climate Change*, explained:

As the militarization of climate change unfolds, it is this interpretation that needs to be disrupted, both with respect to martial approaches to the environment, and with respect to the troubling attempts to use the mobilization of climate change to re-moralize war and the military.¹³³

6.2 Reduce and Re-Direct Military Spending to Climate Finance and Research, Development, Demonstration and Deployment (RDD&D)

Kumi Naidoo, the Executive Director of Greenpeace International, denounced the billions of dollars spent for the military. In a 2012 opinion piece titled, *Two Bullets per Person: The Trillion Dollar Military Spending Club*, Naidoo wrote, "A lot of money is being spent on preparing for war, how much is being spent on preventing it? How much is being spent on mitigating the risks of climate change? Very little by comparison and nowhere near enough."¹³⁴ He recognized that less than 10% of military budgets is what is needed to invest in the UN Green Climate Fund. With Greenpeace International, the IPB calls for a reduction and redirection of military spending to finance urgent action for the climate.

Public funding needs to shift from military R&D to green research, development, demonstration and deployment (RDD&D). RDD&D is needed to advance the technological solutions for climate mitigation and adaption. The Director of the SDSN, Jeffrey Sachs, emphasized in a recent interview, "We are profoundly under investing in research and development of low carbon technology." That's confirmed in the report, *Military vs Climate Security: The 2011 Budgets Compared*, by the Institute for Policy Studies. The report found that the U.S. government spent \$77 billion on military R&D but only \$8 billion on climate R&D.¹³⁵ The IEA estimates that funding for climate RDD&D requires a two to five fold increase.¹³⁶ There needs to be more research into innovative renewable energy technologies and energy efficiency. However, there needs

¹³⁰ United Nations (1987) "Chapter 11: Peace, Security, Development, and the Environment," In: *Our Common Future: Report of the World Commission on Environment and Development*, [Online] Available at: <http://www.un-documents.net/ocf-11.htm>

¹³¹ United States (2014) *Quadrennial Defense Review*. Department of Defense [Online] Available at: http://www.defense.gov/pubs/2014_Quadrennial_Defense_Review.pdf

¹³² United States (2012) *Sustaining U.S. Global Leadership: Priorities for the 21st Century Defense*, Department of Defense report, [Online] Available at: http://www.defense.gov/news/defense_strategic_guidance.pdf

¹³³ Gilbert, E. (2012) "The Militarization of Climate Change," *ACME: An International E-Journal for Critical Geographies*, [Online] Available at: <http://www.acme-journal.org/vol11/Gilbert2012.pdf>

¹³⁴ Naidoo, K. (2012) "Two Bullets per Person: The Trillion Dollar Military Spending Club," *The Huffington Post*, [Online] Available at: http://www.huffingtonpost.com/kumi-naidoo/two-bullets-per-person-th_b_1431642.html

¹³⁵ Pemberton, M. (2011) *Military vs Climate Security: The 2011 Budgets Compared*. Foreign Policy in Focus of the Institute for Policy Studies, [Online] Available at: <http://fpif.org/wp-content/uploads/2010/10/mil-v-climate-2010.pdf>

to be more research into the military's carbon emissions and environmental impacts. In scanning the academic literature and the IPCC publications for this report, there is an obvious research gap in assessing the climate and environmental impacts of the military sector. Independent, publicly available scientific and technical research is needed on the fuel consumption, greenhouse gas emissions and environmental impacts of the military in every country. This information is vital for decision-making about deep decarbonization and sustainable pathways for the future.

6.3 Mitigate and Adapt, Stop the Industrialization and Militarization of the Arctic

The Arctic is a fragile ecosystem that is experiencing dramatic warming from melting glaciers and loss of sea ice. The opening of the Arctic Ocean is leading countries to pursue more industrialization and militarization in this highly sensitive area. A 2009 U.S. Geological Survey estimated that the Arctic holds 30% of the world's recoverable gas and over 10% of the world's remaining oil deposits.¹³⁷ However, natural resource development in this remote region is risky, because it is difficult to monitor and remediate. For instance, there still remains contamination from the 1989 Exxon Valdez oil spill in Alaska.¹³⁸ Greenpeace's concern led its Arctic 30 activists to try to stop further offshore development by protesting Russia's Gazprom oil rig.¹³⁹ Shell is exploring for oil and has plans for development. To stay within our carbon budget, Arctic oil should be left under the ice to prevent dangerous climate change. Yet, Russia, Canada, Norway and China are pursuing greater development and shipping that will further threaten the region. Last October, the first Norwegian marine bulk carrier picked up a load of coal from Canada's pacific coast, sailed across the Northwest Passage and made a delivery in Finland.

Countries are also militarizing the Arctic, modernizing their navies and steering toward conflict. Warships and naval activity pose a serious environmental risk to the Arctic. Naval sonar adversely affects marine life and the ocean floor is littered with exploded and unexploded ordinances. Walruses, seals, narwhals, whales and polar bears are some of the endangered species that will be more threatened by the industrialization and militarization of the Arctic. In his column, *Disarming Arctic Security*, Ernie Regehr reports that Russia is also modernizing its navy with new attack, intercontinental ballistic missile submarines.¹⁴⁰ The Canadian government is spending \$25 billion to build a new fleet of armed combat vessels. Last November, the U.S. christened the first of a new class of nuclear-powered aircraft carriers, the \$7 billion *USS Zumwalt*. The Royal Navy just unveiled the largest British warship in its history, the 65,000-tonne *HMS Queen Elizabeth* that cost £6.2 billion (along with its support ship). The amount spent for warships is more than these countries have spent to mitigate climate change and prevent its adverse effects in the Arctic. Sheila Watt-Cloutier, a Canadian Inuit activist who was co-nominated with Al Gore for the Nobel Peace Prize, has denounced the militarization of the Arctic.¹⁴¹

Instead of competition over resources and militarized conflict, maritime disputes can be settled more responsibly through international law, such as UN Convention on the Law of the Seas and diplomacy, such as the Arctic Council. Russia, China, Canada, the UK and 163 other countries have acceded or ratified the

¹³⁶ International Energy Agency (2010) *Energy Technology Perspectives: Scenarios & Strategies to 2050*. [Online] Available at: <http://www.iea.org/techno/etp/etp10/English.pdf>, p.7.

¹³⁷ United States (2009) *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle*, United States Department of the Interior, United States Geological Survey, [Online] Available at: <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>

¹³⁸ United States (2009) *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle*, United States Department of the Interior, United States Geological Survey, [Online] Available at: <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>

¹³⁹ See Greenpeace International's #SavetheArctic program here:

<http://www.greenpeace.org/international/en/campaigns/climate-change/arctic-impacts/>

¹⁴⁰ Regehr, E. (2013) *Disarming Arctic Security*, Occasional briefing paper, [Online] Available at: <http://www.thesimonsfoundation.ca/projects/disarming-arctic-security>

¹⁴¹ Speech at the 2030 North Conference in Ottawa, Canada in 2009: <http://arctic.blogs.panda.org/default/climate-change-is-changing-who-we-are/>

Convention on the Law of the Seas, which is a comprehensive legal framework with a binding dispute settlement system to ensure “the peaceful uses of the seas and oceans” (the U.S. has not ratified the treaty).¹⁴² IPB supports Greenpeace’s campaign to Save the Arctic and prevent offshore oil development. The IPB further calls for a global campaign to demand that the Arctic be demilitarized, declared a nuclear weapons-free zone and zone of peace.

6.4 Convert Defence Industries to Civilian and Create Green Jobs in Low-Carbon Economies

To achieve deep decarbonization, the carbon-intense, militarized economies of most Western countries can no longer be maintained. Countries must pursue conversion from defence industries to civilian industries to climate-proof the economy. Conversion of defence industries, also known as economic conversion, refers to the process of re-orienting a military or defence company, laboratory or base to a civilian purpose.¹⁴³ For five decades, American industrial engineering professor, Seymour Melman, extensively studied and advocated for conversion of the U.S. war economy but was ignored by the federal government. He and other academics and activists detailed comprehensive conversion plans of American defence industries as part of an integrated disarmament plan that were unfortunately shelved. In his 1988 book, *The Demilitarized Society: Disarmament & Conversion*, Melman wrote, “There is little chance for either life or social justice in a warfare state.”¹⁴⁴ Similarly, there is no chance to stabilize the climate and achieve sustainable development with continued militarism. The UN expert group, in its 2004 UN report, *The Relationship between Disarmament and Development in the Current International Context*, recommended that “conversion should be encouraged as a long-term strategy that contributes to both disarmament and development.” To tackle the climate crisis, a conversion-disarmament plan would help lay the foundation for building the green economy.

A green economy is defined as low-carbon, resource efficient and socially inclusive, according to UNEP’s Green Economy Initiative (GEI). In *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, UNEP presents examples of green jobs around the world in several sectors: renewable energy, manufacturing, waste management, buildings, transportation, tourism and cities. It also provides feasible strategies for transition from high-carbon to low-carbon industries. However, the report fails to consider conversion of defence industries and the demilitarization of economies.¹⁴⁵ In 2012, the UN held the Rio +20 Earth Summit in Brazil with the theme of the green economy. It was the largest UN gathering in history. At the Summit, the IPB and several partners unveiled a bread tank sculpture to symbolize the neglect of the peace and disarmament agenda. Inside the tank was a vegetable garden to represent the possibility of cutting military expenditures to feed people, eliminate poverty and green the economy.¹⁴⁶

In his 2007 book, *The Green Collar Economy: How One Solution Can Fix Our Two Biggest Problems*, Van Jones explicitly made the links between inflated military spending, climate change and poverty. Jones, an American environmental advocate and attorney, argued that a green economy could overcome these challenges and showed how it was possible through *Green For All*. His organization is training and employing people to weatherize homes and buildings, install renewable energy technologies and implement sustainability projects to make climate-resilient communities, particularly in poor neighbourhoods, across the U.S.¹⁴⁷ *Green For All* also has special programs for veterans to give them training in construction to help build a green economy. In 2011, the Political Economic Research Institute at the University of Massachusetts published a study, *U.S. Employment Effects on Military and Domestic*

¹⁴² See the *United Nations Convention on the Law of the Seas* here:

http://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm

¹⁴³ Melman, S. (1988) *The Demilitarized Society: Disarmament and Conversion*. Nottingham, UK: Spokesman, p.21.

¹⁴⁴ Melman, S. (1988) *The Demilitarized Society: Disarmament and Conversion*. Nottingham, UK: Spokesman.

¹⁴⁵ United Nations (2011) *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, [Online] Available at: http://www.unep.org/greeneconomy/Portals/88/documents/ger/ger_final_dec_2011/Green%20EconomyReport_Final_Dec2011.pdf

¹⁴⁶ See the Rio +20 Disarmament for Sustainable Development web site: <http://www.worldwithoutwars.org/news/rio-20-disarmament-sustainable-development>

¹⁴⁷ See the *Green for All* web site here: <http://greenforall.org/>

Spending Priorities, that found that more jobs could be created with \$1 billion in government expenditures in health care, education, and construction than in the military.¹⁴⁸

With the wars in Iraq and Afghanistan largely over, the DoD's Office of Economic Adjustment (OEA) is providing grants for defense transition to communities, as explained by Miriam Pemberton in her article, *Demilitarizing the Economy: A Movement is Underway*.¹⁴⁹ Last year, Connecticut passed a bill to establish a Commission to explore how defense industries could be transitioned into civilian ones in the state. It gathered input through public consultations and its report is due at the end of this year.¹⁵⁰ This month UNEP released its *Green Economy Toolkit for Policymakers* to assist governments in devising and implementing national green economy policies.¹⁵¹ It also recommended that 2% of GDP be invested annually by the public and private sector until 2050 to finance the green economy. About this report, the British Special Representative for Climate Change, Sir David King confirmed, "A transition to a green economy is needed to tackle the enormous environmental challenges we face." The IPB asserts that this green economy transition can be financed by reducing military spending and that more people could be employed in a green, demilitarized economy that would push us faster and further into the deep decarbonization pathway.

6.5 Abolish Nuclear Weapons and Phase Out Nuclear Energy

Due to the inherent link with nuclear weapons, the IPB is opposed to nuclear power as a pathway to a low-carbon future as proposed by the Deep Decarbonization Pathways Project (DDPP). Nuclear power risks high costs and accidents, such as the terrible explosion in Chernobyl in 1986 and the melt down in Fukushima in 2011. There is also no safe storage for nuclear wastes. Mining for uranium leads to environmental contamination and the transportation, enrichment, and conversion of uranium is carbon-intensive.¹⁵² The DDPP is considering advanced or fourth-generation nuclear energy for low-carbon electricity for countries with nuclear power programs or access to uranium. In its country-level reports for India, China, France, the United Kingdom, Russia and the United States, a nuclear energy strategy was proposed. These five countries also possess nuclear weapons and spend billions of dollars maintaining their arsenals (Table 3). India is not a party to the Nuclear Non-Proliferation Treaty (NPT), which entered into force in 1970. The UK ratified and China and France acceded to the NPT in 1992. Though Russia and the United States have ratified the treaty, they possess the majority of nuclear weapons and spend the most amount of money to maintain them.

Table 3: List of Countries Possessing Nuclear Weapons, Number of Weapons & Costs, 2010

| Country | Number of Nuclear Weapons (2014) | 2010 | |
|---------------|----------------------------------|---|---|
| | | Nuclear Weapons Core Cost (\$US billions) | Nuclear Weapons Full Cost (\$US billions) |
| United States | 7,315 | 30.9 | 55.6 |
| Russia | 8,000 | 6.8 | 9.7 |
| China | 250 | 5.7 | 6.8 |
| France | 300 | 4.6 | 5.9 |

¹⁴⁸ Pollin, R. and Garrett-Peltier, H. (2011) *The U.S. Employment Effects Of Military And Domestic Spending Priorities*. Report for the Political Economy Research Institute, University Of Massachusetts, Amherst.

¹⁴⁹ Pemberton, M. (2013) "Demilitarizing the Economy: A Movement is Underway," *Common Dreams*, [Online] Available at: <http://www.commondreams.org/views/2013/12/20/demilitarizing-economy-movement-underway>

¹⁵⁰ See *Commission on Connecticut's Future* here: <http://www.ct.gov/ecd/cwp/view.asp?a=1097&q=532620>

¹⁵¹ United Nations Environment Programme (2014) *Green Economy Toolkit for Policymakers. A Guidance Manual for Green Economy Policy Assessment*. [Online] Available at: http://www.unep.org/greeneconomy/Portals/88/documents/GEI%20Highlights/UNEP%20Assessment%20GE%20Policymaking_for%20web.pdf

¹⁵² An example is Elliot Lake, Ontario, Canada called the "Uranium Capital," learn more about its toxic environmental legacy here: <http://www.uranium-network.org/images/Canada/Yellowcake%20Series%20WS%2020092010.pdf>

| | | | |
|----------------|---------------|---------------|---------------|
| United Kingdom | 225 | 3.5 | 4.5 |
| India | 90-110 | 3.4 | 4.1 |
| Israel | 80 | 1.5 | 1.9 |
| Pakistan | 100-120 | .8 | 1.8 |
| North Korea | <10 | .5 | .7 |
| Total | 16,400 | \$57.7 | \$91.0 |

Sources: Kristensen, H. and Norris, R. (2014) "Worldwide deployments of nuclear weapons, 2014," *Bulletin of Atomic Scientists*, [Online] Available at: <http://bos.sagepub.com/cgi/collection/nuclearnotebook> and Blair, B. and Brown, M. (2011) *Nuclear Weapons Cost Study*, Global Zero Technical Report, [Online] Available at: http://www.globalzero.org/files/gz_nuclear_weapons_cost_study.pdf. Note: Core costs refer to researching, developing, procuring, testing, operating and maintaining the nuclear arsenal. Full costs add unpaid/deferred environmental and health costs, missile defences, nuclear threat reduction and incident management.

Global Zero, an international movement to abolish nuclear weapons launched in 2008, commissioned a study to determine the core and full costs of nuclear weapons. Its report, *Nuclear Weapons Cost Study*, the authors estimated that world spending on nuclear weapons exceeds one trillion dollars per decade and predicted that another trillion dollars will be spent over the next decade as countries modernize their arsenals (Table 3).

The IPB submitted a letter to the DDPP expressing our opposition to nuclear energy as a pathway for deep decarbonization (See Annex 1). The IPB advocates for the abolition of nuclear weapons and the decommissioning of nuclear power plants. The IPB also calls for the re-direction of nuclear weapons spending to environmental remediation and renewable energy. A nuclear-free and carbon-free energy strategy is possible. In 2010, the Nuclear Policy Research Institute and the Institute for Energy and Environmental Research released a report that described how the U.S. could develop an energy roadmap that was carbon-free and nuclear-free.¹⁵³

6.6 Integrate Cooperation, Peacebuilding and Nonviolence for Climate-Resilient Communities

Climate change has been characterized as a "threat multiplier" exacerbating environmental and social pressures that will likely lead to violent competition, armed conflict, state destabilization and displacement that requires military intervention.¹⁵⁴ Climate change and environmental degradation will lead to conflict but it does not have to be competitive and violent. So, how can communities prepare for and cope in resource and climate constrained conditions? How can communities confront climate and environmental challenges peacefully? Cooperation, peacebuilding and nonviolence are the essential pillars for building climate-resilient communities that can withstand the impacts of climate change.

Cooperation is the foundation upon which the United Nations Framework Convention on Climate Change has been build. The IPCC Working Group 3 affirmed in its latest report, "International cooperation is therefore required to effectively mitigate GHG emissions and address other climate issues."¹⁵⁵ Cooperation involves respect for the rule of law, diplomacy and consensus to deal with the climate crisis. There is no need for the military and its use of force, coercion or violence. The UN, academic researchers and development specialists have studied and affirmed that cooperation is possible in challenging environmental and natural resource conflict.¹⁵⁶

¹⁵³ 2010 report, *Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy*, by Dr. Arjun Makhijani that is available online at: <http://ieer.org/resource/reports/carbon-free-and-nuclear-free/>

¹⁵⁴ CNA Military Advisory Board (2014) *National Security and the Accelerating Risks of Climate Change*. Report for CNA Corporation, [Online] Available at: http://www.cna.org/sites/default/files/MAB_2014.pdf

¹⁵⁵ IPCC (2014) Summary for Policymakers, In: *Climate Change 2014, Mitigation of Climate Change*. [Online] Available at: http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf

¹⁵⁶ Dinar, S. ed. (2011) *Beyond Resource Wars*. Cambridge: The MIT Press and Tazler, D. et al. (2013) Adaptation to climate change for peace and stability, Adelphi report, [Online] Available at:

In 2005, the UN established a Peacebuilding Commission, an Expert Advisory Group on Conflict and Peacebuilding, and a Peacebuilding Fund to support countries emerging from conflict and later released a policy entitled *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment*. Peacebuilding is defined as societies equipping themselves to manage conflicts without resorting to violence.¹⁵⁷ For natural resources, it is an inclusive, participatory programme involving democratic governance, education and training for nonviolent conflict resolution and mediation, the rule of law, and wealth sharing.¹⁵⁸ Environmental peacebuilding is a new and growing programme that is being jointly developed by the UN and academic partners for post-conflict environmental and natural resource management.¹⁵⁹ Yet, it should be expanded to deal with the climate crisis. That same year, the UN also launched the *Hyogo Framework for Action 2005-2015* to build capacity and resilience in nations and communities to handle natural disasters from climate change and later formed the *Partnership for Environment and Disaster Risk Reduction* (PEDRR).¹⁶⁰ Through the *Hyogo Framework for Action* and the PEDRR, resilience is achieved through the prevention, preparedness and mitigation of natural disaster. Yet, the Hyogo Framework does not deal with peacebuilding. There needs to be a strong connection between peacebuilding and capacity-building for disasters and risks to cooperatively confront the climate crisis.

Building resiliency is also essential for climate mitigation and adaptation. In its latest report, the IPCC Working Group II explained that many climate change risks are concentrated in urban areas and urged states to take steps to build resilience.¹⁶¹ Resilience is defined as “the capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.”¹⁶² The concept of resiliency in respect to climate change is most fully articulated by the UN Secretary-General’s High-Level Panel on Global Sustainability. In 2012 in advance of the Rio +20 Summit on Sustainable Development, the panel prepared and released its 100-page report, *Resilient People, Resilient Planet: A Future Worth Choosing*.¹⁶³ It is explained that social protection and safety nets are essential for climate resiliency. It made 56 recommendations to make greater progress on sustainable development. However, the report does not mention peace and disarmament.

Later that same year, 2012, the United Nations Educational, Scientific and Cultural Organization (UNESCO) adopted its updated *Framework for Action for a Culture of Peace and Non-Violence*. UNESCO defines this culture as, “values, attitudes and behaviours that reflect and inspire social interaction and sharing based on the principles of freedom, justice and democracy, all human rights, tolerance and solidarity, that reject violence and endeavour to prevent conflicts by tackling their root causes to solve problems through dialogue and negotiation and that guarantee the full exercise of all rights and the means to participate fully in the development process of their society.”¹⁶⁴ This definition relates well to environmental peacebuilding

http://www.adelphi.de/files/uploads/andere/pdf/application/pdf/adaptation_for_peace_and_stability_study-complete.pdf

¹⁵⁷ Smith, D. and Vivekananda, J. (2007) *A Climate of Conflict: The Links between Climate Change, Peace and War*, International Alert report, [Online] Available at: http://www.international-alert.org/sites/default/files/ClimateChange_ClimateOfConflict_EN_2007_0.pdf

¹⁵⁸ Conca, K. and Wallace, J. (2013) “Environment and Peacebuilding in war-torn societies: Lessons from the UN Environment Programme’s experience with post-conflict assessment,” in Jensen, D. and Lonergan, S. (eds.) *Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding*, London: Earthscan, pp. 63-84.

¹⁵⁹ Visit Environmental Peacebuilding here: <http://environmentalpeacebuilding.org>

¹⁶⁰ United Nations (2005) *Hyogo Framework for Action*, Extract from the final report of the World Conference on Disaster Reduction (A/CONF.206/6), [Online] Available at: http://www.unisdr.org/files/1037_hyogoframeworkforactionenglish.pdf

¹⁶¹ IPCC (2014) *Summary for policymakers. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability*. [Online] Available at: http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf

¹⁶² *Ibid.*

¹⁶³ United Nations (2012) *Resilient Planet, Resilient People: A Future Worth Choosing*, Secretary-General's High-level Panel on Global Sustainability, [Online] Available at: <http://sustainabledevelopment.un.org/index.php?page=view&nr=374&type=400&menu=35>

and climate resiliency. Yet, climate change is not mentioned in the framework. There must be integration between the UN work on resiliency and a culture of peace and nonviolence for sustainable development.

For these UN initiatives to support climate-resilient communities there needs to be systematic integration and coherence among peacebuilding, a culture of peace and nonviolence, disaster risk reduction, development, mitigation and adaptation. There needs to be better collaboration among the UNFCCC, UNEP, UNODA and UNESCO. The UN and the international community must have a holistic approach to sustainable development that does not neglect the peace and disarmament agenda and the culture of peace and nonviolence while confronting the climate crisis. The IPB contends that peace should be mainstreamed in IPCC negotiations, climate financing, mitigation and adaptation for climate-resilient communities.

7.0 Uniting the Movements to Amplify the Message

The IPB hopes that this report contributes to uniting the peace, environment, development, labour, and faith communities for demilitarization for deep decarbonization. Together, we must confront the problems of militarism and military spending to overcome the climate crisis. The problems will only be overcome with a united and international movement for transformation. As a step toward this transformation, the IPB invites participation in our Global Day of Action on Military Spending. We also urge resistance to the greenwash by weapons manufacturers and the plan for green warfighting by defence departments. Energy efficient weapons and warfare cannot be accepted for sustainable development. Weapons and war are carbon-intensive and keep us in the destructive direction to dangerous climate change. To stabilize the climate, to protect the environment and to develop sustainably, war must be abolished. A united global civil society movement can make this happen.

7.1 Join the Global Day of Action and Campaign on Military Spending

In 2011, the IPB in collaboration with the Institute for Policy Studies launched the first annual Global Day of Action on Military Spending (GDAMS). The day is held every April and coincides with the release of the SIPRI Yearbook on Military Expenditures and Tax Day in the United States. For the past four years, IPB members and supporters have held events around the world to raise awareness about the problem with military spending. This year there were 158 actions in 34 countries and an international social media campaign “If I had \$1.75 trillion US.” The IPB encourages civil society organizations and individuals to join GDAMS. Our web site provides organizers with materials, fact sheets, and reports to get started.¹⁶⁵ In 2015, the IPB plans to organize a special campaign linking GDAMS with Earth Day, which is celebrated on April 22, as another way to expose the link between militarism and the climate and environmental crises. We hope to raise awareness about how military spending deprives countries from having the financial resources to protect the environment and stabilize the climate, and that a reduction of military expenditures could be re-directed to climate financing like the UN GCF.¹⁶⁶ The IPB plans to expand GDAMS into an ongoing, international campaign to reduce military spending to meet urgent social and environmental needs.

7.2 Reject Weapons Manufacturers’ Greenwash and the Military’s Green Warfighting

The IPB rejects efforts to make warfighting more energy efficient and calls on states to demilitarize. The IPB also considers plans by arms manufacturers to make “environmentally-friendly” weapons systems to be “greenwash,” deceptive and discreditable environmental marketing. For example, the “climate champion” branding of Lockheed Martin, the world’s top weapons manufacturer with net sales of \$45 billion and net

¹⁶⁴ UNESCO (2012) *UNESCO’s Programme of Action for a Culture of Peace and Non-Violence: A vision in action*, [Online] Available at: <http://unesdoc.unesco.org/images/0021/002177/217786e.pdf>

¹⁶⁵ See the *Global Day of Action on Military Spending* here: <http://demilitarize.org/>

¹⁶⁶ See more information about *Earth Day* here: <http://www.earthday.org/>

profits of \$3 billion. It is one of the main manufacturers of nuclear weapons, hellfire missiles, naval weapons systems, drones, fighter jets and bombers – products that emit greenhouse gases and pollute the natural environment. In 2008, Lockheed Martin launched a *Go Green* initiative and spent a paltry \$40 million over six years on an environmental strategy.¹⁶⁷ Lockheed Martin bills itself as a renewable energy expert and is trying to secure contracts with cities on green urban projects. However, in 2011, the people in Burlington, Vermont mobilized to prevent Lockheed Martin from partnering with the state capital on a renewable energy plan, because they did not want the weapons manufacturer to taint the capital's hard earned reputation as a green city.¹⁶⁸ Nevertheless, Lockheed Martin along with Raytheon, another top weapons manufacturer, won "Climate Leader" awards from the Environmental Protection Agency in 2013.¹⁶⁹ As journalist Jeremy Schulman explained in his article, "Defense Contractor: Climate Change Could Create "Business Opportunities," the weapons companies are hoping climate-related security risks will increase demand for their products and that their "green" reputations will award them more government contracts, though most of these companies have been cited on the federal contractor misconduct list by the Project on Government Oversight.¹⁷⁰ The Carbon Disclosure Project (CDP) contains the largest database in the world of companies' environmental reporting that includes their data on climate change, water and forest-risk.¹⁷¹ Eight of the ten top arms-producing companies submit reports to the CDP with a paucity and opaqueness of information. Still the CDP gives these companies A ratings for their reporting. For example in Lockheed Martin's climate report there is no mention of its jet-fuel guzzling F-35 stealth fighter program. The IPB denounces the "greenwash" of the defence contractors and challenges the scoring company reports in the CDP. We also deplore the selection of Lockheed Martin as the premium, platinum sponsor of the NYC 2014 Climate Week events.¹⁷² As a top sponsor, Lockheed Martin is given high visibility and recognition at the events, which give the false public impression that it is a corporation caring about the climate.

The IPB also rejects the pursuit of "greening" warfighting by departments of defence around the world, including the UK and the U.S.¹⁷³ The U.S. DoD's *National Defense Center for Energy and Environment* has a mandate to support environmental sustainability, military readiness, and warfighting. The Pentagon centre is planning technology transitions for less toxic, environmentally-friendly and fuel-efficient military bases, weapons systems and warfighting.¹⁷⁴ "More fight, less fuel" is what is planned by the DoD in a 2011 report, *Energy for the Warfighter: Operational Energy Strategy*.¹⁷⁵ The IPB maintains that there should be no fight and no fossil fuels for deep decarbonization and sustainable development to be achieved. Further, as argued above, with peacebuilding for climate mitigation and adaptation, cooperation and not armed conflict is possible in constrained natural resource environments. Every state should be preparing for peace and adapting to climate change, our greatest human security threat, not planning for war.

¹⁶⁷ See Lockheed Martin's program "Go Green" here:

<http://www.lockheedmartin.co.uk/us/tallevast/programs/school/go-green.html>

¹⁶⁸ Goodnough, A. (2011) "In a Green Town, Activists See Red Over Lockheed Martin," *The New York Times*, [Online] Available at: http://www.nytimes.com/2011/05/12/us/12burlington.html?_r=0

¹⁶⁹ See the Environmental Protection Agency's 2013 *Climate Leader Awards* here:

<http://www.epa.gov/climateleadership/awards/2013winners.html>

¹⁷⁰ Schulman, J. (2013) "Defense Contractor: Climate Change Could Create "Business Opportunities," *Mother Jones Magazine*, [Online] Available at: <http://www.motherjones.com/environment/2013/08/raytheon-climate-change-security> and See the Federal Contractor Misconduct Database here: <http://www.contractormisconduct.org/>

¹⁷¹ See the *Carbon Disclosure Project* here: <https://www.cdp.net/en-US/Results/Pages/responses.aspx>

¹⁷² See *NYC Climate Week 2014 Partners & Sponsors* here: <http://www.climateweeknyc.org/partners-sponsors/>

¹⁷³ See the UK Ministry of Defence's climate change and sustainable development plans here:

<https://www.gov.uk/government/organisations/ministry-of-defence/about/our-energy-use> and Brzoska, M. (2012) "Climate change and the military in China, Russia, the United Kingdom, and the United States," *Bulletin of the Atomic Scientists*, 68 (2), pp. 48-54.

¹⁷⁴ See more information about the U.S. Department of Defense's *National Defense Center for Energy and Environment* here: <http://www.ndcee.ctc.com/index.php/about-ndcee/technology-transition-approach>

¹⁷⁵ United States (2011) *Energy for the Warfighter: Operational Energy Strategy*. Department of Defense Report, [Online] Available at:

http://energy.defense.gov/Portals/25/Documents/Reports/20110614_Operational_Energy_Strategy.pdf

8.0 Recommendations

The IPB recommendations offered here are directed to the SDSN and IDDRI that administer the Deep Decarbonization Pathways Project, UNFCCC, UNEP, other UN agencies and national governments. Most of these recommendations were elaborated upon throughout the report. They also include a special appeal to the scientific, engineering and R&D communities to study the military's environmental and carbon "footprint" and to examine the possibilities of demilitarization for decarbonization. As well, the UN and the academic community should acknowledge the omission of military emissions in their research and work for completeness.

- For deep decarbonization, the **SDSN and IDDRI** should include a decarbonization pathway for the military sector in every state in the final report
- If the military sector is not a pathway explored, the exclusion of military emissions should be acknowledged in the Deep Decarbonization final report.
- The **UNFCCC** should put on the agenda and re-negotiate military exemptions in the next climate agreement
- The UNFCCC should end all military exemptions to greenhouse gas reporting in future climate change agreements
- The UNFCCC and the IPCC should establish a working group to investigate the greenhouse gas emissions of the military sector and release a report
- The UNFCCC roster of experts should include specialists with an expertise in defence materiel and fuel use
- The UNFCCC expert review teams should do a desk study and in-country visit for the military sector
- For National Communications, the IPCC should create mandatory reporting guidelines to disaggregate data for the military and make the military a separate sector
- For National Adaptation Programmes of Action, they should include peacebuilding initiatives to ensure climate-resiliency in communities and states
- **UNEP** should convene a special meeting and report related to its mandate *Preventing Military Impacts on Environments* with focus on greenhouse gas emissions
- UNEP should include greenhouse gas emission estimates in post-conflict environmental assessment reports
- UNEP to conduct post-conflict environmental assessment reports that include greenhouse gas emission calculations and environmental impacts of weapons use for recent wars in Iraq, Afghanistan, Libya, Gaza and Syria
- UN to create a formal link and liaison between the UN Office on Disarmament and the UN Green Economy Initiative for better collaboration and coherence among environment, development, peace and climate
- Across the UN and its agencies, peace and peacebuilding should be mainstreamed and expressly linked to climate change programmes and disaster risk reduction planning
- **UN General Assembly** should introduce and pass a resolution on the creation of a special commission to examine demilitarization and economic conversion from militarized industries to civilian industries in order to green the economy
- The UN General Assembly should put forward a *Uniting for Peace* Resolution (377) that gives the body the right to directly deal with issues not effectively addressed in the UN Security Council, such as demilitarization for deep decarbonization. Any member of the GA can introduce a *Uniting for Peace* Resolution
- The **UN** appoint a new Group of Governmental Experts to update the 2004 disarmament-development report from a climate perspective
- The **UN Special Rapporteur for Climate**, Mary Robinson, should convene a meeting and report on the climate impacts of the military and a decarbonization plan for the military
- The OECD should compile data on state budgets that compare public spending on environment and climate. The OECD is already collecting environmental statistics and should add countries' expenditures for the public financing of environment and climate change

- **States** must reduce military spending and redirect it to meeting the **UN Green Climate Fund** for climate mitigation and adaptation and to environmental remediation
- **States** must reduce military spending and redirect it to meet the *UN Decade of Sustainable Energy for All* for global energy security and the *Global Environmental Facility* for trans-boundary problems
- States must report the life-cycle fuel use, greenhouse gas emissions and environmental impacts of their domestic and international military operations, procurement and facilities and make those reports publicly available for peer review and verification
- States must cease R&D into new weapons and invest in RDD&D into renewable energy technologies, energy efficiency and conversion from the war economy to the green economy
- States must abolish nuclear weapons, decommission nuclear power plants and re-direct nuclear spending and R&D for renewable energy and investment in climate financing
- The **scientific and R&D communities** should acknowledge the limitations of their analysis if they do not include military emissions in their research and reporting
- The scientific and R&D communities should undertake more research into conversion and demilitarization as a pathway to deep decarbonization and the conversion of defence industries

The consideration and fulfilment of these recommendations will require pressure and advocacy from global civil society.

9.0 Conclusion

Climate change is becoming more serious with each passing decade as more greenhouse gas emissions are released and extreme weather events take place. The scientific evidence is clear and unequivocal, yet we are not taking adequate action and not investing enough to slow down global warming. Instead, our governments are spending more on military expenditures to buy and build new warships, fighter jets, and missile systems rather than spending on urgent environmental and social programs. In this report, *Demilitarization for Deep Decarbonization*, the International Peace Bureau has argued that militarism and military expenditures must be reduced and re-directed toward climate finance to create low carbon economies and climate-resilient communities. Betsy Hartmann, a professor of development studies and director of the Population and Development Program at Hampshire College, affirmed, “Militarism stands in the way of achieving progress on climate change.”¹⁷⁶ Demilitarization and disarmament must take place alongside climate mitigation and adaptation strategies to achieve the deep decarbonization required to stabilize the climate by 2050. The military, which accounts for a disproportionate amount of carbon emissions and toxic pollution, must not longer be exempted from reporting and must not be given any amount of the carbon budget. The military is an extremely destructive sector to the planet and to people; it is the problem, not the solution to the climate crisis. We concluded our report with six peace and disarmament pathways to decarbonization and sustainable development. We also offered several specific recommendations to UN agencies, international organizations and national governments to confront the troubling nexus between militarism and climate change. It will require a unified, global movement of civil society organizations and concerned citizens to push for the realization of these pathways and the implementation of these recommendations. For the IPB, ultimately, war must stop for global warming to slow down. With the urgency and severity of climate change, we demand that national governments shift their budgets and priorities from planning for warfare to protecting the planet before it is too late.

¹⁷⁶ Mychalejko, C. (2013) “Turtles and Tomahawk Missiles, Together at Last? War is Not the Answer to Climate Change,” *Truthout*, [Online] Available at: <http://truth-out.org/news/item/13917-turtles-and-tomahawk-missiles-together-at-last-war-is-not-the-answer-to-climate-change>

Annex 1: IPB's Letter to the Deep Decarbonization Pathways Project, 2014



41, rue de Zurich
1201 Geneva
Switzerland
+41 (0) 22 731 64 29
mailbox@ipb.org
www.ipb.org

To: Sustainable Development Solutions Network (SDSN) and the Institute for Sustainable Development and International Relations (IDDRI)

Date: August 15, 2014

Re: Comment on the Deep Decarbonization Pathways Project (DDPP)

The International Peace Bureau (IPB) appreciates the opportunity to provide comments to the *Pathways to Deep Decarbonization* Interim 2014 Report. We applaud the important work done by the SDSN, the IDDRI and the country research teams to determine how states can reduce greenhouse gas emissions to stabilize the climate. We would like to raise several concerns and questions about the report and the pathways project in the hopes that they will be addressed by the coordinating organizations.

First, we would like to share with you information about our organization. The IPB was founded in 1891 and is the world's oldest international peace network with a membership of 300 affiliates. Our vision is of a world without war and one of our main program areas is **Disarmament for Development**. In 2005, we published a report entitled *Warfare or Welfare? Disarmament for Development in the 21st Century* and in 2012 we released a publication entitled *Opportunity Costs: Military Spending and the UN's Development Agenda*. These reports can be found on our web site at <http://www.ipb.org>. The IPB is concerned that global, annual military spending of \$1.7 trillion deprives states of the funding needed to invest in urgent social and environmental needs like climate change. We are also concerned about the climate impacts from states' militaries, such as the greenhouse gas emissions from tanks, warships, and aircraft and from military operations such as the recent wars in Iraq and Afghanistan, the NATO bombings in Libya in 2011 and the ongoing civil war in Syria, among other conflicts.

Second, along with the SDSN and the IDDRI, the IPB shares a firm commitment to sustainable development. The *Pathways to Deep Decarbonization* report states that "avoiding dangerous climate change and achieving sustainable development are inextricably linked." We agree and recall the 1992 *Rio Declaration on Environment and Development*, which articulates the principles of sustainable development and states in Principle 25 that "peace, development and environmental protection are interdependent and indivisible." However, in the *Pathways to Deep Decarbonization* report, peace is not mentioned and the military is not examined as a sector. There are only two minor references to the military in the report:

1. On page 185, “Transportation’s one-third share of emissions rises to 60% of total final emissions by 2050 (excluding electrified transport), as the remaining fossil fuels in the economy are applied to largely to long-distance transport end-uses (including aviation and military use) that are difficult to electrify or convert to pipeline gas.”
2. On page 187, “Residual petroleum use is in the transportation sector, where it continues to be used in some light duty and transit vehicles, civilian aviation, and military vehicles and aircraft.”

From these two references, it seems to us that greenhouse gas emissions from the military are accepted as a *Business-As-Usual* scenario for the future. Can the SDSN and the IDDRI clarify if the pathways identified in the country reports contribute to deep reductions for states’ militaries? If not, can the five key questions devised by SDSN and the IDDRI be applied to the military sector and answered in next year’s final report? Can key metrics related to greenhouse gas emissions for the military be developed, so that states and the general public have the necessary data to support decision making for deep decarbonization across the economy and for sustainable development?

Third, why have the country research teams not considered the military as a separate sector? According to the International Energy Agency, the US Department of Defense is the largest institutional consumer of fossil fuels in the world, spending \$15 billion annually. The country reports are limited to the sectors of transport, buildings and industry. Yet, consider the following information for the United States, the United Kingdom, Australia and Canada, for which DDPP reports have been done, from their respective national accounts and defence procurements:

- In 2013, the United States government spent \$607 billion on the military but only \$38 billion on environment and natural resources. The US is a highly militarized economy and a chief arms exporter with 7 of the 10 top weapons manufacturers in the world according the Stockholm International Peace Research Institute. This year, the US christened its largest and costliest warship, the \$7 billion *USS Zumwalt*, and is procuring the most expensive weapons system in its history, the Lockheed Martin F-35 stealth fighter fleet. The new warship and fighter jets use a tremendously carbon intensive JP-5 military-grade jet fuel. If the *Pathways to Deep Decarbonization* neglect the fundamental character of the U.S. economy it will not achieve the greenhouse gas reduction targets needed in the country. We draw your attention to the report written by the senior economist at the Institute for Policy Studies Dr. Miriam Pemberton, *Military vs. Climate Security: The 2011 Budgets Compared*, which is available online here:
http://fpif.org/military_vs_climate_security_the_2011_budgets_compared/
- In 2013, the United Kingdom spent £37 billion on the Ministry of Defence versus £7 billion combined on the Department of Environment, Food & Rural Affairs and the Department of Energy and Climate Change. This year, the Royal Navy unveiled the largest warship in its history, the 65,000-tonne *HMS Queen Elizabeth* that cost £6.2 billion (along with its support ship), and the British government announced plans to purchase a fleet of new F-35s for £2.5 billion.
- In 2013, Australia spent \$24 billion but only \$3 billion for environmental protection. This year, the Australian government has terminated its carbon tax. Over the next three years, the federal government plans to reduce environmental spending by 50% but has increased the defence budget by 6%. The Australian air force will also buy new fighter jets for \$12 billion.
- In 2011, the Canadian government abrogated from the Kyoto Protocol. In 2013, the federal government spent \$23 billion on the Department of Defence versus \$1.5 billion on Environment Canada, the lead agency for climate change. Over the next three years, the federal government plans to reduce environmental spending by over 50% but maintain military spending and buy new fighter jets for \$45 billion and build new warships for \$25 billion.

The impacts on climate change and the environmental costs of states' militaries cannot be overlooked. We are challenging the SDSN and the IDDRI to scrutinize the current, energy pathway for the military in each country.

Fourth, we would also like to raise our opposition to advanced nuclear energy for deep reductions. We recall the terrible nuclear accidents in Chernobyl in 1986 and in Fukushima in 2011, the costly construction and tax payer subsidization of nuclear power plants around the world, and the fact that nuclear waste cannot be safely stored. We are concerned about the inherent link between nuclear power and nuclear weapons. We believe a sustainable energy pathway is a nuclear-free pathway. We bring to the attention of SDSN and the IDDRI the 2010 report, *Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy*, by Dr. Arjun Makhijani that is available online at: <http://ieer.org/resource/reports/carbon-free-and-nuclear-free/>

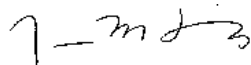
Fifth, the IPB notes that the results from the public consultations on the draft SDSN report *An Action Agenda for Sustainable Development* in 2013 revealed that many participants highlighted peace and security as priorities. However, peace is not mentioned in the interim report and the second thematic group, *Reducing Poverty and Building Peace in Fragile Regions*, only deals with peace-building for developing, fragile states. Yet peace and peace-building are essential for all states, including for developed countries with the most advanced militaries, such as the United States, China, the United Kingdom, Russia, Australia, and Canada.

Finally, the IPB supports the recommendation made by the SDSN and the IDDRI in the *Pathways to Deep Decarbonization* interim report that "financial flows are re-directed from high-carbon to low-carbon portfolios and projects" (p. 25). We believe that states must re-direct military spending to renewable energy technologies and green jobs. We also agree with Director of SDSN Jeffrey Sachs and United Nations' Secretary General Ban Ki-Moon that "ambitious national action is critical to averting dangerous climate change" and that the task of "transformation is enormous." However, we believe that a transformation to a low-carbon economy will not possible with continued, excessive military expenditures and carbon-intensive defence procurement. We hope that the final report submitted by the SDSN and the IDDRI to the United Nations in 2015 includes a deep decarbonization pathway for the military sector, and that the second thematic group considers disarmament and peacebuilding for every country, so that we can create a roadmap that will truly lead all of humanity toward sustainable development.

Sincerely,



Colin Archer
Secretary-General



Tamara Lorincz
Researcher

Annex 2: The Earth Charter, 2000

THE EARTH CHARTER

<http://www.earthcharterinaction.org>

Preamble

We stand at a critical moment in Earth's history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward we must recognize that in the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny. We must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace. Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations.

Earth, Our Home

Humanity is part of a vast evolving universe. Earth, our home, is alive with a unique community of life. The forces of nature make existence a demanding and uncertain adventure, but Earth has provided the conditions essential to life's evolution. The resilience of the community of life and the well-being of humanity depend upon preserving a healthy biosphere with all its ecological systems, a rich variety of plants and animals, fertile soils, pure waters, and clean air. The global environment with its finite resources is a common concern of all peoples. The protection of Earth's vitality, diversity, and beauty is a sacred trust.

The Global Situation

The dominant patterns of production and consumption are causing environmental devastation, the depletion of resources, and a massive extinction of species. Communities are being undermined. The benefits of development are not shared equitably and the gap between rich and poor is widening. Injustice, poverty, ignorance, and violent conflict are widespread and the cause of great suffering. An unprecedented rise in human population has overburdened ecological and social systems. The foundations of global security are threatened. These trends are perilous—but not inevitable.

The Challenges Ahead

The choice is ours: form a global partnership to care for Earth and one another or risk the destruction of ourselves and the diversity of life. Fundamental changes are needed in our values, institutions, and ways of living. We must realize that when basic needs have been met, human development is primarily about being more, not having more. We have the knowledge and technology to provide for all and to reduce our impacts on the environment. The emergence of a global civil society is creating new opportunities to build a democratic and humane world. Our environmental, economic, political, social, and spiritual challenges are interconnected, and together we can forge inclusive solutions.

Universal Responsibility

To realize these aspirations, we must decide to live with a sense of universal responsibility, identifying ourselves with the whole Earth community as well as our local communities. We are at once citizens of different nations and of one world in which the local and global are linked. Everyone shares responsibility for the present and future well-being of the human family and the larger living world. The spirit of human

solidarity and kinship with all life is strengthened when we live with reverence for the mystery of being, gratitude for the gift of life, and humility regarding the human place in nature.

We urgently need a shared vision of basic values to provide an ethical foundation for the emerging world community. Therefore, together in hope we affirm the following interdependent principles for a sustainable way of life as a common standard by which the conduct of all individuals, organizations, businesses, governments, and transnational institutions is to be guided and assessed.

Principles

I. RESPECT AND CARE FOR THE COMMUNITY OF LIFE

1. Respect Earth and life in all its diversity.
 - a. Recognize that all beings are interdependent and every form of life has value regardless of its worth to human beings.
 - b. Affirm faith in the inherent dignity of all human beings and in the intellectual, artistic, ethical, and spiritual potential of humanity.
2. Care for the community of life with understanding, compassion, and love.
 - a. Accept that with the right to own, manage, and use natural resources comes the duty to prevent environmental harm and to protect the rights of people.
 - b. Affirm that with increased freedom, knowledge, and power comes increased responsibility to promote the common good.
3. Build democratic societies that are just, participatory, sustainable, and peaceful.
 - a. Ensure that communities at all levels guarantee human rights and fundamental freedoms and provide everyone an opportunity to realize his or her full potential.
 - b. Promote social and economic justice, enabling all to achieve a secure and meaningful livelihood that is ecologically responsible.
4. Secure Earth's bounty and beauty for present and future generations.
 - a. Recognize that the freedom of action of each generation is qualified by the needs of future generations.
 - b. Transmit to future generations values, traditions, and institutions that support the long-term flourishing of Earth's human and ecological communities.

In order to fulfill these four broad commitments, it is necessary to:

II. ECOLOGICAL INTEGRITY

5. Protect and restore the integrity of Earth's ecological systems, with special concern for biological diversity and the natural processes that sustain life.
 - a. Adopt at all levels sustainable development plans and regulations that make environmental conservation and rehabilitation integral to all development initiatives.
 - b. Establish and safeguard viable nature and biosphere reserves, including wild lands and marine areas, to protect Earth's life support systems, maintain biodiversity, and preserve our natural heritage.
 - c. Promote the recovery of endangered species and ecosystems.
 - d. Control and eradicate non-native or genetically modified organisms harmful to native species and the environment, and prevent introduction of such harmful organisms.
 - e. Manage the use of renewable resources such as water, soil, forest products, and marine life in ways that do not exceed rates of regeneration and that protect the health of ecosystems.

f. Manage the extraction and use of non-renewable resources such as minerals and fossil fuels in ways that minimize depletion and cause no serious environmental damage.

6. Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach.

- a. Take action to avoid the possibility of serious or irreversible environmental harm even when scientific knowledge is incomplete or inconclusive.
- b. Place the burden of proof on those who argue that a proposed activity will not cause significant harm, and make the responsible parties liable for environmental harm.
- c. Ensure that decision making addresses the cumulative, long-term, indirect, long distance, and global consequences of human activities.
- d. Prevent pollution of any part of the environment and allow no build-up of radioactive, toxic, or other hazardous substances.
- e. Avoid military activities damaging to the environment.

7. Adopt patterns of production, consumption, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being.

- a. Reduce, reuse, and recycle the materials used in production and consumption systems, and ensure that residual waste can be assimilated by ecological systems.
- b. Act with restraint and efficiency when using energy, and rely increasingly on renewable energy sources such as solar and wind.
- c. Promote the development, adoption, and equitable transfer of environmentally sound technologies.
- d. Internalize the full environmental and social costs of goods and services in the selling price, and enable consumers to identify products that meet the highest social and environmental standards.
- e. Ensure universal access to health care that fosters reproductive health and responsible reproduction.
- f. Adopt lifestyles that emphasize the quality of life and material sufficiency in a finite world.

8. Advance the study of ecological sustainability and promote the open exchange and wide application of the knowledge acquired.

- a. Support international scientific and technical cooperation on sustainability, with special attention to the needs of developing nations.
- b. Recognize and preserve the traditional knowledge and spiritual wisdom in all cultures that contribute to environmental protection and human well-being.
- c. Ensure that information of vital importance to human health and environmental protection, including genetic information, remains available in the public domain.

III. SOCIAL AND ECONOMIC JUSTICE

9. Eradicate poverty as an ethical, social, and environmental imperative.

- a. Guarantee the right to potable water, clean air, food security, uncontaminated soil, shelter, and safe sanitation, allocating the national and international resources required.
- b. Empower every human being with the education and resources to secure a sustainable livelihood, and provide social security and safety nets for those who are unable to support themselves.
- c. Recognize the ignored, protect the vulnerable, serve those who suffer, and enable them to develop their capacities and to pursue their aspirations.

10. Ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner.

- a. Promote the equitable distribution of wealth within nations and among nations.
- b. Enhance the intellectual, financial, technical, and social resources of developing nations, and relieve them of onerous international debt.
- c. Ensure that all trade supports sustainable resource use, environmental protection, and progressive labor standards.
- d. Require multinational corporations and international financial organizations to act transparently in the public good, and hold them accountable for the consequences of their activities.

11. Affirm gender equality and equity as prerequisites to sustainable development and ensure universal access to education, health care, and economic opportunity.

- a. Secure the human rights of women and girls and end all violence against them.
- b. Promote the active participation of women in all aspects of economic, political, civil, social, and cultural life as full and equal partners, decision makers, leaders, and beneficiaries.
- c. Strengthen families and ensure the safety and loving nurture of all family members.

12. Uphold the right of all, without discrimination, to a natural and social environment supportive of human dignity, bodily health, and spiritual well-being, with special attention to the rights of indigenous peoples and minorities.

- a. Eliminate discrimination in all its forms, such as that based on race, color, sex, sexual orientation, religion, language, and national, ethnic or social origin.
- b. Affirm the right of indigenous peoples to their spirituality, knowledge, lands and resources and to their related practice of sustainable livelihoods.
- c. Honor and support the young people of our communities, enabling them to fulfill their essential role in creating sustainable societies.
- d. Protect and restore outstanding places of cultural and spiritual significance.

IV. DEMOCRACY, NONVIOLENCE, AND PEACE

13. Strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision making, and access to justice.

- a. Uphold the right of everyone to receive clear and timely information on environmental matters and all development plans and activities which are likely to affect them or in which they have an interest.
- b. Support local, regional and global civil society, and promote the meaningful participation of all interested individuals and organizations in decision making.
- c. Protect the rights to freedom of opinion, expression, peaceful assembly, association, and dissent.
- d. Institute effective and efficient access to administrative and independent judicial procedures, including remedies and redress for environmental harm and the threat of such harm.
- e. Eliminate corruption in all public and private institutions.
- f. Strengthen local communities, enabling them to care for their environments, and assign environmental responsibilities to the levels of government where they can be carried out most effectively.

14. Integrate into formal education and life-long learning the knowledge, values, and skills needed for a sustainable way of life.

- a. Provide all, especially children and youth, with educational opportunities that empower them to contribute actively to sustainable development.
- b. Promote the contribution of the arts and humanities as well as the sciences in sustainability education.
- c. Enhance the role of the mass media in raising awareness of ecological and social challenges.
- d. Recognize the importance of moral and spiritual education for sustainable living.

15. Treat all living beings with respect and consideration.

- a. Prevent cruelty to animals kept in human societies and protect them from suffering.
- b. Protect wild animals from methods of hunting, trapping, and fishing that cause extreme, prolonged, or avoidable suffering.
- c. Avoid or eliminate to the full extent possible the taking or destruction of non-targeted species.

16. Promote a culture of tolerance, nonviolence, and peace.

- a. Encourage and support mutual understanding, solidarity, and cooperation among all peoples and within and among nations.
- b. Implement comprehensive strategies to prevent violent conflict and use collaborative problem solving to manage and resolve environmental conflicts and other disputes.
- c. Demilitarize national security systems to the level of a non-provocative defense posture, and convert military resources to peaceful purposes, including ecological restoration.
- d. Eliminate nuclear, biological, and toxic weapons and other weapons of mass destruction.
- e. Ensure that the use of orbital and outer space supports environmental protection and peace.
- f. Recognize that peace is the wholeness created by right relationships with oneself, other persons, other cultures, other life, Earth, and the larger whole of which all are a part.

The Way Forward

As never before in history, common destiny beckons us to seek a new beginning. Such renewal is the promise of these Earth Charter principles. To fulfill this promise, we must commit ourselves to adopt and promote the values and objectives of the Charter. This requires a change of mind and heart. It requires a new sense of global interdependence and universal responsibility. We must imaginatively develop and apply the vision of a sustainable way of life locally, nationally, regionally, and globally. Our cultural diversity is a precious heritage and different cultures will find their own distinctive ways to realize the vision. We must deepen and expand the global dialogue that generated the Earth Charter, for we have much to learn from the ongoing collaborative search for truth and wisdom.

Life often involves tensions between important values. This can mean difficult choices. However, we must find ways to harmonize diversity with unity, the exercise of freedom with the common good, short-term objectives with long-term goals. Every individual, family, organization, and community has a vital role to play. The arts, sciences, religions, educational institutions, media, businesses, nongovernmental organizations, and governments are all called to offer creative leadership. The partnership of government, civil society, and business is essential for effective governance.

In order to build a sustainable global community, the nations of the world must renew their commitment to the United Nations, fulfill their obligations under existing international agreements, and support the implementation of Earth Charter principles with an international legally binding instrument on environment and development.

Let ours be a time remembered for the awakening of a new reverence for life, the firm resolve to achieve sustainability, the quickening of the struggle for justice and peace, and the joyful celebration of life.

Annex 3: Excerpts of The People's Agreement on Climate Change and the Rights of Mother Earth, 2010

World People's Conference on Climate Change and the Rights of Mother Earth

April 22nd, 2010 Cochabamba, Bolivia

<http://globalclimateconvergence.org/2014/08/peoples-agreement-cochabamba-world-peoples-conference-climate-change/>

Today, our Mother Earth is wounded and the future of humanity is in danger.

If global warming increases by more than 2 degrees Celsius, a situation that the "Copenhagen Accord" could lead to, there is a 50% probability that the damages caused to our Mother Earth will be completely irreversible. Between 20% and 30% of species would be in danger of disappearing. Large extensions of forest would be affected, droughts and floods would affect different regions of the planet, deserts would expand, and the melting of the polar ice caps and the glaciers in the Andes and Himalayas would worsen. Many island states would disappear, and Africa would suffer an increase in temperature of more than 3 degrees Celsius. Likewise, the production of food would diminish in the world, causing catastrophic impact on the survival of inhabitants from vast regions in the planet, and the number of people in the world suffering from hunger would increase dramatically, a figure that already exceeds 1.02 billion people. The corporations and governments of the so-called "developed" countries, in complicity with a segment of the scientific community, have led us to discuss climate change as a problem limited to the rise in temperature without questioning the cause, which is the capitalist system.

We confront the terminal crisis of a civilizing model that is patriarchal and based on the submission and destruction of human beings and nature that accelerated since the industrial revolution.

The capitalist system has imposed on us a logic of competition, progress and limitless growth. This regime of production and consumption seeks profit without limits, separating human beings from nature and imposing a logic of domination upon nature, transforming everything into commodities: water, earth, the human genome, ancestral cultures, biodiversity, justice, ethics, the rights of peoples, and life itself.

Under capitalism, Mother Earth is converted into a source of raw materials, and human beings into consumers and a means of production, into people that are seen as valuable only for what they own, and not for what they are.

Capitalism requires a powerful military industry for its processes of accumulation and imposition of control over territories and natural resources, suppressing the resistance of the peoples. It is an imperialist system of colonization of the planet.

Humanity confronts a great dilemma: to continue on the path of capitalism, depredation, and death, or to choose the path of harmony with nature and respect for life.

It is imperative that we forge a new system that restores harmony with nature and among human beings. And in order for there to be balance with nature, there must first be equity among human beings. We

propose to the peoples of the world the recovery, revalorization, and strengthening of the knowledge, wisdom, and ancestral practices of Indigenous Peoples, which are affirmed in the thought and practices of “Living Well,” recognizing Mother Earth as a living being with which we have an indivisible, interdependent, complementary and spiritual relationship. To face climate change, we must recognize Mother Earth as the source of life and forge a new system based on the principles of:

- harmony and balance among all and with all things;
- complementarity, solidarity, and equality;
- collective well-being and the satisfaction of the basic necessities of all;
- people in harmony with nature;
- recognition of human beings for what they are, not what they own;
- elimination of all forms of colonialism, imperialism and interventionism;
- peace among the peoples and with Mother Earth;

The model we support is not a model of limitless and destructive development.... To guarantee human rights and to restore harmony with nature, it is necessary to effectively recognize and apply the rights of Mother Earth.

... Developed countries, as the main cause of climate change, in assuming their historical responsibility, must recognize and honor their climate debt in all of its dimensions as the basis for a just, effective, and scientific solution to climate change. In this context, we demand that developed countries:

- Restore to developing countries the atmospheric space that is occupied by their greenhouse gas emissions. This implies the decolonization of the atmosphere through the reduction and absorption of their emissions;
- Assume the costs and technology transfer needs of developing countries arising from the loss of development opportunities due to living in a restricted atmospheric space;
- Assume responsibility for the hundreds of millions of people that will be forced to migrate due to the climate change caused by these countries, and eliminate their restrictive immigration policies, offering migrants a decent life with full human rights guarantees in their countries;
- Assume adaptation debt related to the impacts of climate change on developing countries by providing the means to prevent, minimize, and deal with damages arising from their excessive emissions;
- Honor these debts as part of a broader debt to Mother Earth by adopting and implementing the United Nations Universal Declaration on the Rights of Mother Earth.

The focus must not be only on financial compensation, but also on restorative justice, understood as the restitution of integrity to our Mother Earth and all its beings.

We deplore attempts by countries to annul the Kyoto Protocol, which is the sole legally binding instrument specific to the reduction of greenhouse gas emissions by developed countries.

We inform the world that, despite their obligation to reduce emissions, developed countries have increased their emissions by 11.2% in the period from 1990 to 2007.

During that same period, due to unbridled consumption, the United States of America has increased its greenhouse gas emissions by 16.8%, reaching an average of 20 to 23 tons of CO₂ per-person. This

represents 9 times more than that of the average inhabitant of the “Third World,” and 20 times more than that of the average inhabitant of Sub-Saharan Africa.

We categorically reject the illegitimate “Copenhagen Accord” that allows developed countries to offer insufficient reductions in greenhouse gases based in voluntary and individual commitments, violating the environmental integrity of Mother Earth and leading us toward an increase in global temperatures of around 4°C.

...

It is necessary to construct an Adaptation Fund exclusively for addressing climate change as part of a financial mechanism that is managed in a sovereign, transparent, and equitable manner for all States. This Fund should assess the impacts and costs of climate change in developing countries and needs deriving from these impacts, and monitor support on the part of developed countries. It should also include a mechanism for compensation for current and future damages, loss of opportunities due to extreme and gradual climactic events, and additional costs that could present themselves if our planet surpasses ecological thresholds, such as those impacts that present obstacles to “Living Well.”

...

The immense challenge humanity faces of stopping global warming and cooling the planet can only be achieved through a profound shift in agricultural practices toward the sustainable model of production used by indigenous and rural farming peoples, as well as other ancestral models and practices that contribute to solving the problem of agriculture and food sovereignty. This is understood as the right of peoples to control their own seeds, lands, water, and food production, thereby guaranteeing, through forms of production that are in harmony with Mother Earth and appropriate to local cultural contexts, access to sufficient, varied and nutritious foods in complementarity with Mother Earth and deepening the autonomous (participatory, communal and shared) production of every nation and people.

Climate change is now producing profound impacts on agriculture and the ways of life of indigenous peoples and farmers throughout the world, and these impacts will worsen in the future.

...

We similarly denounce the way in which the capitalist model imposes mega-infrastructure projects and invades territories with extractive projects, water privatization, and militarized territories, expelling indigenous peoples from their lands, inhibiting food sovereignty and deepening socio-environmental crisis.

...

The United Nations Declaration on the Rights of Indigenous Peoples must be fully recognized, implemented and integrated in climate change negotiations. The best strategy and action to avoid deforestation and degradation and protect native forests and jungles is to recognize and guarantee collective rights to lands and territories, especially considering that most of the forests are located within the territories of indigenous peoples and nations and other traditional communities.

...

We demand the full and effective implementation of the right to consultation, participation and prior, free and informed consent of indigenous peoples in all negotiation processes, and in the design and implementation of measures related to climate change.

...

Developed countries should assume responsibility for climate migrants, welcoming them into their territories and recognizing their fundamental rights through the signing of international conventions that provide for the definition of climate migrant and require all States to abide by determinations.

Establish an International Tribunal of Conscience to denounce, make visible, document, judge and punish violations of the rights of migrants, refugees and displaced persons within countries of origin, transit and destination, clearly identifying the responsibilities of States, companies and other agents.

Current funding directed toward developing countries for climate change and the proposal of the Copenhagen Accord is insignificant. In addition to Official Development Assistance and public sources, developed countries must commit to a new annual funding of at least 6% of GDP to tackle climate change in developing countries. This is viable considering that a similar amount is spent on national defense, and that 5 times more have been put forth to rescue failing banks and speculators, which raises serious questions about global priorities and political will. This funding should be direct and free of conditions, and should not interfere with the national sovereignty or self-determination of the most affected communities and groups.

...

It has been stated that developed countries significantly increased their emissions in the period from 1990 to 2007, despite having stated that the reduction would be substantially supported by market mechanisms.

The carbon market has become a lucrative business, commodifying our Mother Earth. It is therefore not an alternative for tackle climate change, as it loots and ravages the land, water, and even life itself.

The recent financial crisis has demonstrated that the market is incapable of regulating the financial system, which is fragile and uncertain due to speculation and the emergence of intermediary brokers. Therefore, it would be totally irresponsible to leave in their hands the care and protection of human existence and of our Mother Earth.

...

The world must recover and re-learn ancestral principles and approaches from native peoples to stop the destruction of the planet, as well as promote ancestral practices, knowledge and spirituality to recuperate the capacity for “living well” in harmony with Mother Earth.

Considering the lack of political will on the part of developed countries to effectively comply with commitments and obligations assumed under the United Nations Framework Convention on Climate Change and the Kyoto Protocol, and given the lack of a legal international organism to guard against and sanction climate and environmental crimes that violate the Rights of Mother Earth and humanity, we demand the creation of an International Climate and Environmental Justice Tribunal that has the legal capacity to prevent, judge and penalize States, industries and people that by commission or omission contaminate and provoke climate change.

...

We urge peoples to propose and promote deep reform within the United Nations, so that all member States comply with the decisions of the International Climate and Environmental Justice Tribunal.

The future of humanity is in danger, and we cannot allow a group of leaders from developed countries to decide for all countries as they tried unsuccessfully to do at the Conference of the Parties in Copenhagen. This decision concerns us all. Thus, it is essential to carry out a global referendum or popular consultation on climate change in which all are consulted regarding the following issues; the level of emission reductions on the part of developed countries and transnational corporations, financing to be offered by developed countries, the creation of an International Climate Justice Tribunal, the need for a Universal Declaration of the Rights of Mother Earth, and the need to change the current capitalist system. The process of a global

referendum or popular consultation will depend on process of preparation that ensures the successful development of the same.

In order to coordinate our international action and implement the results of this “Accord of the Peoples,” we call for the building of a Global People’s Movement for Mother Earth, which should be based on the principles of complementarity and respect for the diversity of origin and visions among its members, constituting a broad and democratic space for coordination and joint worldwide actions.

Annex 4: Militarism/War: Elephant in the Room Resolution, 2010

Non-Governmental Organizations' Resolution

Presented at the Conference of the Parties (COP) 16 in Cancun, Mexico in 2010

War = Climate Change = War = Climate Change... Time to Break the Cycle!

Militarism/War: Elephant in the Living Room

http://www.climatesos.org/wp-content/uploads/2010/12/Military_Climate_resolution_Dec10_2010_delivery.pdf

- The US Military and their allies, through their imperial wars and military actions (overt and covert) around the world, have inflicted massive suffering and civilian casualties.
- The US Military is the largest single source of greenhouse gas emissions on the planet, yet these emissions are exempted from reporting requirements.
- Access to more oil, the burning of which is fundamental cause of climate change – is the primary underlying motive for current wars.
- Both warfare and climate change are rendering large areas uninhabitable – displacing millions of people as refugees, and yet the rights of immigrants are increasingly limited, threatened and abused.
- Climate change is likely to result in far more wars, being a “threat multiplier” and now recognized as the greatest looming threat to “security”. Access to resources – including land, food, water – is already becoming increasingly challenging, and scarcities will likely trigger conflict and further displacement in the future.
- The US Military is also the largest source of toxic chemical and radioactive poisoning of peoples and environment around the globe, and plays a major role in promoting false solutions that only worsen the problems (biofuels, nuclear technologies, climate geoengineering etc)
- The US and global economy is in shambles, funding for a “fair and just transition” – to ensure that people are not negatively impacted by the necessary transitions, is not forthcoming, “green” jobs remain scarce, millions lack access to basic healthcare.
- The US has lead the efforts by developed countries in stymieing progress among nations, consistently refusing to pay their “ecological debt”, owed to non-industrialized countries and their peoples... All while spending trillions on furthering wars in Afghanistan, Iraq, Pakistan and elsewhere.
- Our global commons (air, water, forests) is being bought and sold in carbon markets under the guise that this is the ONLY feasible means of generating funds to take necessary actions to prevent and adapt to impacts of climate change. The result is further concentration of wealth and power, at the expense of the planet.

We will not accept the death spiral of militarism, war and climate change. It is time to break the cycle! In Cancun and beyond, we demand:

1. An end to oil and resource wars, and reinstatement of diplomacy and respect over use of force in all foreign relations
2. Troops brought home, military bases abroad closed down and cleaned up, those on U.S. soil dramatically reduced and cleaned up.
3. Redirection of the vast majority of military funding to fund human services, ensure decent quality of life, payment of ecological and climate debt, and compensation to countries and peoples damaged by U.S. militarism.
4. Dismantling of the military-industrial complex. Corporations stripped of personhood. Clean elections mandated.
5. IPCC to create an urgent special report on military emissions, both direct and indirect (e.g., ecosystem damage and desertification due to military activities). No reporting exemptions by powerful countries.
6. Urgent implementation of "real" as opposed to "false" solutions, to end the use of fossil fuels, and restore and protect public and environmental health.

Supported by Biofuel Watch, Climate SOS (USA/Canada), CODE PINK (USA), Farmers' Voice (Bangladesh), Global Compliance Research Project, Grassroots Global Justice Alliance, Grassroots International, International Action Center, International Tribal Association, JUBILEE SOUTH, Organic Consumers Association (USA), Peoples Movement on Climate Change, Sociologists without Borders, Teachers and Scientists against Maldevelopment (India), United for Peace and Justice (USA), United National Antiwar Committee (USA), Unity of Women for Freedom (Philippines), World Rainforest Movement...& more.

Annex 5: Stop the Wars, Stop the Warming Appeal, 2014

Stop the Wars, Stop the Warming!* **Appeal to the Peace and Climate Movements 2014**

<http://peoplesclimate.org/peace/appeal/>

We are at a crossroads, faced with a climate crisis that threatens to end our world as we know it. The signs of climate change are all around us. They include—increasingly severe weather everywhere (floods, heat waves, droughts, cyclones and wildfires), as well as melting polar ice and glaciers, rising acidic oceans, and thawing of the Siberian permafrost, which threatens release of huge, devastating, methane gas emissions.

If we pursue business as usual we face a world of food shortages caused by drought, increasing disease and deaths, and displacement from vast areas of flooded and uninhabitable terrain. We must do all in our power to stop greenhouse gas emissions, counteract the effects, and prevent the increase of global warming.

But the developing climate emergency does not exist in isolation. And we must understand and confront the social and economic context that produced and accompanies it: war and unlimited military expenditures, corporate globalization, vast social inequality and racism.

The US military is the single greatest institutional producer of greenhouse gases in the world.

Wars by their very nature destroy the environment and burn and release massive amounts of greenhouse gases. Recent military mobilizations are pouring huge amounts of new carbon emissions into the atmosphere.

The vast expenditures now consumed by military machines are the very resources needed for a crash program to rapidly create a renewable energy infrastructure and put millions of people to work in green jobs.

Wars and military buildup are in large part dedicated to controlling the fossil fuel energy resources on which our present model of global economic development and endless growth depend. Resorting to armed conflict is increasing as fossil fuels become more expensive and difficult to extract, transport and produce.

Nuclear weapons, like climate change, threaten to destroy the world. There are nine nuclear armed nations and estimated 16,400 nuclear weapons in the world. With ten wars and 34 limited conflicts now occurring, the chance of any one of them escalating to nuclear war and its unthinkable human and environmental impact is an ever-present specter. Nuclear power is not a green alternative energy. It produces large amounts of radioactive nuclear waste, poses the risk of catastrophic accidents, and contributes to the global proliferation of nuclear weapons.

Corporate dominance and extreme social inequality are intrinsic to our expansionist global economic model.

The UN Millennium Development Goals in conjunction with other forces have begun to lift the poorest billion of humanity out of extreme poverty. The damage now coming as a result of climate change threatens to erase and even reverse whatever progress has been made.

The people most affected by climate change are those with the fewest resources to deal with it. With increasing environmental destruction, droughts, floods, and famine, there will be massive displacement of impoverished and desperate people leading to forced migration and regional hostilities. Within the U.S., the people most affected include the poor, those in prison or nursing homes, the disabled and others who don't have the freedom or ability to leave when disaster threatens or strikes.

Two examples of long-term-drought-induced Climate Wars are the tragedies in Somalia and Syria. In the latter case, a five-year drought was one of the contributors to an ongoing civil war. Somalia has been at war for twenty years, and that conflict has also embroiled neighboring Kenya and Ethiopia.

Rather than taking emergency measures to address climate change and the needs of those impacted now, our military is preparing to control these displacements to protect "US interests".

We who have opposed the toxic, polluting, life- and earth-destroying wars in Iraq and Afghanistan and the existential threat of nuclear weapons are in total support of the People's Climate March and its vision of a world without fossil fuels and the fires of war. We will march, we will demand divestment and fight denial, we will battle the pollution of Big Money, and we will join in demanding that the Obama administration step forward to achieve a 2015 global treaty to phase out greenhouse gas emissions.

We call on all who want to preserve our planet to join the People's Climate March in New York City on September 21st and to form a Stop the Wars, Stop the Warming Contingent. We are organizing under the following principles:

- We can't effectively address climate change without ending war and militarism;
- We can't end war without ending the fossil fuel energy system;
- We can't address social injustice unless we stop using war to safeguard an economic infrastructure (based on fossil fuels) that produces and requires vast social inequality.
- We can't end war unless we address the systemic inequality and corporate domination that requires and produces it.
- We must insist that the transition to a sustainable economy and green jobs not be accomplished at the expense of those now employed in the fossil fuel and military sectors and the communities in which they work and live.
- Energy and armament corporations should bear the lion's share of the social cost to make that transition a just one.

We call on our government to:

- Undertake an emergency program to make all our cities energy efficient and to create a new energy grid based on renewable energy sources.
- End federal subsidies for the fossil fuel industries—coal, gas, oil and industrial biomass
- End the 2005 "Cheney exemption" to the Clean Water Act for gas hydraulic fracking, which threatens clean water supplies to people in some 23 states. Strictly enforce the Clean Air and Clean Water Acts of 1970 in all energy production.

- Stop building new fossil fuel infrastructure, including the Keystone pipeline project, and rapidly end fracking projects and the awarding of any new offshore drilling contracts.
- Build a carbon-free, nuclear-free energy future and end subsidies for nuclear power. Implement a financial transaction tax to fund the new solar, wind, hydro, and efficiency programs we need globally and to help clean up the toxic mess of fossil and nuclear destruction.
- Join with all nuclear powers to abide by their treaty commitments and to move quickly toward mutual abolition of all nuclear weapons as required by the Nuclear Non-Proliferation Treaty.
- Re-direct military spending to the creation of millions of green jobs and to research and develop a rapid but just transition from fossil fuels to non-polluting energy sources.
- Stop the military protection of fossil fuel interests in the Middle East and elsewhere in the world.
- Bring our all troops home now from Afghanistan and Iraq, reject military attacks in Iraq, Syria and Iran, and use the billions saved to invest in energy efficient mass transit and other public infrastructure, schools, affordable housing and sustainable union-standard jobs.
- Redefine the mission of U.S. military forces as defense of the United States instead of achieving “Full Spectrum Dominance” in the service of global corporations, the fossil fuel industry, and the military industrial complex that President Eisenhower warned against, thereby also allowing closure of most of our 1,000 or more foreign military bases.
- Stop blocking the proposals for effective international action on climate change put forward by the Group of 77 and other developing countries, starting at the UN on September 23, 2014. All countries must do something, but the countries which are most responsible for carbon emissions have the larger responsibility to commit resources to achieve an 85% cut in greenhouse gases by 2050. The wealthier developed countries should provide \$100 billion to an international fund for green industrial development in less developed countries.

We can't afford the greenhouse gas emissions arising from the way we live and from war and preparation for war. And we can't afford the climate of mistrust and non-cooperation that military threats and intervention foster.

To successfully avert worst-case climate disaster we will need international agreements and cooperation on a scale not seen in the past; we need new approaches in order to demilitarize US foreign policy and humanize domestic policy.

We believe that most Americans will welcome these positive changes. Working together, peace, climate and social justice activists can help make this happen.

** Signed by many local, national and international organizations including the Peace and Justice Hub of the People's Climate March, the International Peace Bureau, United for Peace and Justice, U.S. Labor Against the War, U.S. Peace Council, Veterans for Peace, Alliance for Global Justice, Campaign for Peace and Democracy, Franciscans for Justice, Nonviolence International, Pax Christi USA, Peace Action, WarIsACrime.org, Brooklyn For Peace, Climate Action NOW! (Western Massachusetts), Coalition for Peace Action, (Pennsylvania and New Jersey), Massachusetts Peace Action, Occupy Bergen County (New Jersey), Pax Christi Metro New York, The Peace Farm (Texas), Physicians for Social Responsibility – Kansas City, Physicians for Social Responsibility – New York City and more.*

References

Relevant IPB Publications

Archer, C. and Hay-Edie, D. (2005) *Warfare or Welfare? Disarmament for Development in the 21st Century*. Geneva: International Peace Bureau.

Archer, C. (2007) *Whose Priorities? A guide for campaigners on military and social spending*. Geneva: International Peace Bureau, [Online] Available at:
http://www.ipb.org/uploads/tbl_contingut_web/207/documents/Whose%20Priorities.pdf

Archer, C. and Willi, A. (2012) *Opportunity Costs: Military Spending and the UN's Development Agenda*. [Online] Available at: http://www.ipb.org/uploads/tbl_contingut_web/227/documents/Opportunity%20Costs%20web.pdf

Buckland, B. (2007) *A Climate of War? Stopping the Securitisation of Global Climate Change*. Report for the International Peace Bureau, [Online] Available at:
http://www.ipb.org/uploads/tbl_contingut_web/176/documents/paper.pdf

Books and Publications

Akbar, S. et al. (2014) *Climate-Smart Development: Adding Up the Benefits of Actions that Help Build Prosperity, End Poverty and Combat Climate Change*. World Bank Working Paper, [Online] Available at:
http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2014/06/20/000456286_20140620100846/Rendered/PDF/889080WP0v10RE0Smart0Development0Ma.pdf

Blair, B. and Brown, M. (2011) *Nuclear Weapons Cost Study*, Global Zero Technical Report, [Online] Available at: http://www.globalzero.org/files/gz_nuclear_weapons_cost_study.pdf

Branagan, M. (2013) *Global Warming, Militarism and Nonviolent: The Art of Active Resistance*. New York, NY: Palgrave Macmillan.

Brock, H. (2012) *Climate Change: Drivers of Insecurity and the Global South*. Oxford Research Group, [Online] Available at: <http://www.oxfordresearchgroup.org.uk/sites/default/files/Climate%20Change%20and%20Insecurity%20in%20the%20Global%20South.pdf>

Brzoska, M. (2012) "Climate change and the military in China, Russia, the United Kingdom, and the United States," *Bulletin of the Atomic Scientists*, 68 (2), pp. 48-54.

Buchner, B. et al. (2012) *The Landscape of Climate Finance 2012*. Climate Policy Initiative, [Online] Available at: <http://climatepolicyinitiative.org/wp-content/uploads/2012/12/The-Landscape-of-Climate-Finance-2012.pdf>

Cameron, E., Shine, T. and Bevins, W. (2013) *Climate Justice: Equity and Justice Informing a New Climate Agreement*. Working Paper. World Resources Institute and Mary Robinson Foundation – Climate Justice, [Online] Available at:

http://www.mrfcj.org/media/pdf/climate_justice_equity_and_justice_informing_a_new_climate_agreement.pdf

Capalino, R. and Fulton, M. (2014) *Investing in the Clean Trillion: Closing the Clean Energy Investment Gap*. A Ceres Report, [Online] Available at: <http://www.ceres.org/resources/reports/investing-in-the-clean-trillion-closing-the-clean-energy-investment-gap/view>

Climate Group (2014) *IPCC Summary and Graphics: Final Report Makes Clear Need for Urgent Clean Revolution*, On-line Summary, [Online] Available at: <http://www.theclimategroup.org/what-we-do/news-and-blogs/ipcc-summary-and-graphics-final-report-makes-clear-need-for-urgent-clean-revolution/>

Conca, K. and Wallace, J. (2013) "Environment and Peacebuilding in war-torn societies: Lessons from the UN Environment Programme's experience with post-conflict assessment," in Jensen, D. and Lonergan, S. (eds.) *Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding*, London: Earthscan, pp. 63-84.

CNA Military Advisory Board (2009) *Powering America's Defense: Energy and Risks to National Security*. Report for CNA Corporation, [Online] Available at: <http://www.cna.org/sites/default/files/Powering%20Americas%20Defense.pdf>

CNA Military Advisory Board (2014) *National Security and the Accelerating Risks of Climate Change*. Report for CNA Corporation, [Online] Available at: http://www.cna.org/sites/default/files/MAB_2014.pdf

Dabelko, D. et al. (eds.) (2013) *Backdraft: The Conflict Potential of Climate Change Adaptation and Mitigation*. 14(2), [Online] Available at: http://wilsoncenter.org/sites/default/files/ECSP_REPORT_14_2_BACKDRAFT.pdf

Dinar, S. ed. (2011) *Beyond Resource Wars*. Cambridge: The MIT Press.

Greenpeace USA (1998) *Why Do Foreign Policy Experts Say Kyoto is Bad for America?* Documents related to COMPASS, [Online] Available at: <http://research.greenpeaceusa.org/?a=download&d=4196>

Environmental Working Group (2008) "EPA Ignores Toxic Rocket Fuel Chemical In Drinking Water," Press Release, [Online] Available at: <http://www.ewg.org/news/news-releases/2008/10/03/epa-rocket-fuel-contaminant-safe-nation%E2%80%99s-drinking-water>

European Commission (2011) *Scaling up international climate finance after 2012*, Commission Staff Working Document, [Online] Available at: http://ec.europa.eu/economy_finance/articles/financial_operations/pdf/sec_2011_487_final_en.pdf

Figures, C. (2011) *Address by Christiana Figueres, Executive Secretary United Nations Framework Convention on Climate Change to the Congress of Deputies of Spain*, [Online] Available at: http://unfccc.int/files/press/statements/application/pdf/speech_seguridad_20110215.pdf

Gilbert, E. (2012) "The Militarization of Climate Change," *ACME: An International E-Journal for Critical Geographies*, [Online] Available at: <http://www.acme-journal.org/vol11/Gilbert2012.pdf>

Green Climate Fund (2013) *Report of the Green Climate Fund to the Conference of the Parties and Guidance to the Green Climate Fund*. GCF/B.01-13/Inf.03, [Online] Available at: http://www.gcfund.net/fileadmin/00_customer/documents/pdf/B-01-13_Inf.03_COP_Guidance-final.pdf

- Goodwin, J. et al. (2006) "Chapter 2: Approaches to Data Collection," In: *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, [Online] Available at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/1_Volume1/V1_2_Ch2_DataCollection.pdf
- Gurría, A. (2013) *The climate challenge: Achieving zero emissions*, Lecture by the OECD Secretary-General, [Online] Available at: <http://www.oecd.org/about/secretary-general/The-climate-challenge-achieving-zero-emissions.htm>
- Huebert, R. et al. (2012) *Climate Change & International Security: The Arctic as a Bellwether*. Report for the Center for Climate and Energy Solutions, [Online] Available at: <http://www.c2es.org/docUploads/arctic-security-report.pdf>
- Institute for Economics and Peace (2011) *Economic Consequences of War on the U.S. Economy*, Report [Online] Available at: <http://economicsandpeace.org/wp-content/uploads/2011/09/The-Economic-Consequences-of-War-on-US-Economy.pdf>
- International Energy Agency (2008) *Energy Technology Perspectives 2008*, Fact Sheet – The Blue Scenario. [Online] Available at: http://www.iea.org/techno/etp/fact_sheet_ETP2008.pdf
- International Energy Agency (2010) *Energy Technology Perspectives: Scenarios & Strategies to 2050*. [Online] Available at: <http://www.iea.org/techno/etp/etp10/English.pdf>
- International Energy Agency (2013) *Key World Energy Statistics*. [Online] Available at: <http://www.iea.org/publications/freepublications/publication/KeyWorld2013.pdf>
- International Energy Agency (2013) *Redrawing the Energy-Climate Map*. World Energy Outlook Special Report. [Online] Available at: http://www.iea.org/publications/freepublications/publication/WEO_Special_Report_2013_Redrawing_the_Energy_Climate_Map.pdf
- International Institute for Environment and Development (2009) *Billions at stake in climate finance: four key lessons*. Briefing for the International Institute for Environment and Development, [Online] Available at: <http://pubs.iied.org/17075IIED.html>
- IPCC (1990) *Climate Change: The IPCC Response Strategies*. Report prepared for Intergovernmental Panel on Climate Change by Working Group III, [Online] Available at: https://www.ipcc.ch/publications_and_data/publications_ipcc_first_assessment_1990_wg3.shtml
- IPCC (2013) Summary for Policymakers. In: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA [Online] Available at: http://www.climate2013.org/images/report/WG1AR5_SPM_FINAL.pdf
- IPCC (2014) Summary for Policymakers. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1-32. USA [Online] Available at: http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf

- IPCC (2014) Summary for Policymakers, In: *Climate Change 2014, Mitigation of Climate Change*. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. [Online] Available at: http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf
- IRENA (2014) *REmap 2030: A Renewable Energy Roadmap*, June 2014. IRENA, Abu Dhabi. [Online] Available at: www.irena.org/remap
- Ki-Moon, B. (2014) Speech of the Secretary-General, Addressing the European Forum, SG/SM/15748 [Online] Available at: <http://www.un.org/News/Press/docs/2014/sgsm15748.doc.htm>
- Kristensen, H. and Norris, R. (2014) "Worldwide deployments of nuclear weapons, 2014," *Bulletin of Atomic Scientists*, [Online] Available at: <http://bos.sagepub.com/cgi/collection/nuclearnotebook>
- Liska, A. and Perrin, R. (2010) "Securing Foreign Oil: A Case for Including Military Operations in the Climate Change Impact of Fuels," *Environment*, July-August, [Online] Available at: <http://www.environmentmagazine.org/Archives/Back%20Issues/July-August%202010/securing-foreign-oil-full.html>
- Lovins, A. (2001) "Battling Fuel Waste in the Military," Article for RMI Solutions. [Online] Available at: http://www.rmi.org/Knowledge-Center/Library/S01-12_BattlingMilitaryFuelWaste
- Majeed, A. (2004) *The Impact of Militarism on the Environment: An Overview of Direct & Indirect Effects*. Report for Physicians for Global Survival (Canada). [Online] Available at: http://pgs.ca/wp-content/uploads/2007/11/militarism_environment_web.pdf
- Makhijani, A. (2010) *Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy* [Online] Available at: <http://ieer.org/resource/reports/carbon-free-and-nuclear-free/>
- Matthew, R. (2014) "Integrating climate change into peacebuilding," *Climatic Change*, 12 (3), pp. 83-93.
- Matthews, H.D. et al. (2014) "National contributions to observed global warming," *Environmental Research Letters*, 9, [Online] Available at: http://iopscience.iop.org/1748-9326/9/1/014010/pdf/1748-9326_9_1_014010.pdf
- McKibben, B. (2012) "Global Warming's Terrifying Math," *Rolling Stone Magazine*, [Online] Available at: <http://www.rollingstone.com/politics/news/global-warmings-terrifying-new-math-20120719?page=3>
- McManus, K. (2006) Civil Liability for Wartime Environmental Damage: Adapting the United Nations Compensation for the Iraq War, *Boston College Environmental Affairs Law Review*, 33 (2), pp. 417-448.
- Melman, S. (1988) *The Demilitarized Society: Disarmament and Conversion*. Nottingham, UK: Spokesman.
- Mendelsohn, R. (2011) "Climate Change, Cooperation and Resource Scarcity." In: Dinar, S. ed. (2011) *Beyond Resource Wars*. Cambridge: The MIT Press. pp. 25-41.
- Moss, T. (2014) "Climate of war: climate change and resource conflict," *Jane's Defence Weekly*
- Movement for the Abolition of War (2013) *Conflict and Climate Change*. Suffolk: KM Publishing.

National Aeronautics and Space Administration (2014) *Global Climate Change: Vital Signs*, Key Indicators [Online] Available at: http://climate.nasa.gov/key_indicators/#co2

NATO (1997) "Chapter 15: Fuels, Oils Lubricants and Petroleum Handling Equipment," Annex A: Aide Memoire on Fuels in NATO, *NATO Logistics Handbook*, [Online] Available at: <http://www.nato.int/docu/logi-en/1997/lo-15a.htm>

Oil Change International (2008) *A Climate of War: Behind the Numbers*. Advance Edition report, [Online] Available at: [http://priceofoil.org/content/uploads/2008/03/A%20Climate%20of%20War%20FINAL%20\(March%2017%202008\).pdf](http://priceofoil.org/content/uploads/2008/03/A%20Climate%20of%20War%20FINAL%20(March%2017%202008).pdf)

Organisation for Economic Co-operation and Development (2012) *OECD Environmental Outlook to 2050: The Consequences of Inaction Highlights*, [Online] Available at: <http://www.oecd.org/environment/indicators-modelling-outlooks/49846090.pdf>

Organisation for Economic Co-operation and Development (2014) *OECD submission to the UNFCCC Standing Committee on Finance*, [Online] Available at: https://unfccc.int/files/cooperation_and_support/financial_mechanism/standing_committee/application/pdf/oecd_submission_to_unfccc_scf_call_for_inputs_-_20_january_2014.pdf

Pemberton, M. (2009) *Military vs. Climate Security: Mapping the Shift from the Bush Years to the Obama Era*. Foreign Policy Studies in Focus, project of the Institute for Policy Studies report. [Online] Available at: http://www.ips-dc.org/military_vs_climate_security_mapping_the_shift_from_the_bush_years_to_the_obama_era/

Pemberton, M. (2011) *Military vs Climate Security: The 2011 Budgets Compared*. Foreign Policy in Focus of the Institute for Policy Studies, [Online] Available at: <http://fpif.org/wp-content/uploads/2010/10/mil-v-climate-2010.pdf>

Perlo-Freeman, S. et al. (2013) *Trends in World Military Expenditure, 2012*. Stockholm International Peace Research Institute Fact Sheet April 2013.

Pollin, R. and Garrett-Peltier, H. (2011) *The U.S. Employment Effects Of Military And Domestic Spending Priorities*. Report for the Political Economy Research Institute, University Of Massachusetts, Amherst.

Potten, D. (2013) *The Green Climate Fund and Lessons from other Global Funds' Experience*. Tyndall Centre for Climate Change Research report, [Online] Available at: <http://www.tyndall.ac.uk/publications/tyndall-working-paper/2013/green-climate-fund-and-lessons-other-global-funds%E2%80%99-experienc>

PriceWaterhouseCoopers (2010) *Aerospace and Defence Sector: climate change responses*. Report for PWC, [Online] Available at: http://www.pwc.co.uk/en_UK/uk/assets/pdf/climate-change-in-aerospace-defence.pdf

PriceWaterhouseCoopers (2013) *Busting the carbon budget: Low Carbon Economy Index*. Report for PWC, [Online] Available at: http://www.pwc.co.uk/en_UK/uk/assets/pdf/climate-change-in-aerospace-defence.pdf

Project Censored (2010) *US Department of Defense is the Worst Polluter on the Planet*, [Online] Available at: <http://www.projectcensored.org/2-us-department-of-defense-is-the-worst-polluter-on-the-planet/>

Regehr, E. (2013) *Disarming Arctic Security*, Occasional briefing paper, [Online] Available at: <http://www.thesimonsfoundation.ca/projects/disarming-arctic-security>

- Reid, W. et al. (2005) *Ecosystems and Human Well-Being*. Millennium Ecosystem Assessment report, [Online] Available at: <http://www.maweb.org/en/index.aspx>
- Roberts, M. (2009) "War, Climate Change, and Women," *Race, Poverty & the Environment*, Fall, [Online] Available at: <http://www.movementgeneration.org/wp-content/uploads/2009/02/Roberts.Climate.16-2-10.pdf>
- Ryan, L., Selmet, N., and Aasrud., A (2012) *Plugging the Energy Efficiency Gap with Climate Finance*. International Energy Agency Insights Series 2012. [Online] Available at: <http://www.iea.org/publications/insights/insightpublications/PluggingEnergyEfficiencyGapwithClimateFinance.pdf>
- Sanders, B. (2009) *The Green Zone: The Environmental Costs of Militarism*. Oakland: AK Press.
- Schellnhuber, H. et al. (2014) *Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience*. World Bank Working Paper (78424). [Online] Available at: <http://www.worldbank.org/en/topic/climatechange/publication/turn-down-the-heat-climate-extremes-regional-impacts-resilience>
- Schwartz, M. et al. (2012) *Department of Defense Energy Initiatives: Background and Issues for Congress*. Congressional Research Service, [Online] Available at: <http://fas.org/sgp/crs/natsec/R42558.pdf>
- Schwartz, P. and Randall, D. (2003) *An Abrupt Climate Change Scenario and Its Implications for United States National Security*. [Online] Available online: http://www.climate.org/topics/PDF/clim_change_scenario.pdf
- Stern, N. (2006) *The Economics of Climate Change* (The Stern Review). [Online] Available at: http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/sternreview_index.htm
- Smith, D. and Vivekananda, J.(2007) *A Climate of Conflict: The Links between Climate Change, Peace and War*, International Alert report, [Online] Available at: <http://www.international-alert.org/resources/publications/climate-conflict>
- Stockholm International Peace Research Institute (2013) *SIPRI Yearbook 2013: Armaments, Disarmament and International Security*. London: Oxford University Press, 2013.
- Stockholm International Peace Research Institute (2014) *Trends in World Military Expenditure, 2013*. SIPRI Fact Sheet, [Online] Available at: http://books.sipri.org/product_info?c_product_id=476
- Sulewski, K. (2008) "Understanding U.S. Withdrawal from the Kyoto Protocol," *Journal of International Relations*, 10, pp. 35-52.
- Sustainable Development Solutions Network and Institute for Sustainable Development and International Relations (2014) *Pathways to Deep Decarbonization Interim 2014 Report*, [Online] Available at: http://unsdsn.org/wp-content/uploads/2014/07/DDPP_interim_2014_report.pdf
- Tanzler, D. et al. (2013) *Adaptation to climate change for peace and stability*, Adelphi report, [Online] Available at: http://www.adelphi.de/files/uploads/andere/pdf/application/pdf/adaptation_for_peace_and_stability_study-complete.pdf

UNESCO (2012) *UNESCO's Programme of Action for a Culture of Peace and Non-Violence: A vision in action*, [Online] Available at: <http://unesdoc.unesco.org/images/0021/002177/217786e.pdf>

United Kingdom. Department of Defence. (2014) *Global Strategic Trends – Out to 2045*. Strategic Trends Programme. [Online] Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/328036/DCDC_GST_5_Sealed.pdf

United Nations (1987) "Chapter 11: Peace, Security, Development, and the Environment," In: *Our Common Future: Report of the World Commission on Environment and Development*, [Online] Available at: <http://www.un-documents.net/ocf-11.htm>

United Nations (1992) *United Nations Framework Convention on Climate Change*, [Online] Available at: <http://unfccc.int/resource/docs/convkp/conveng.pdf>

United Nations (1992) *Agenda 21*, [Online] Available at: <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>

United Nations (1998) *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, [Online] Available at: <http://unfccc.int/resource/docs/convkp/kpeng.pdf>

United Nations (2004) *The relationship between disarmament and development in the current international context*. Report of the Secretary-General, Department for Disarmament Affairs, [Online] Available at: http://www.un.org/disarmament/HomePage/ODAPublications/DisarmamentStudySeries/PDF/DSS_31.pdf

United Nations (2005) *Hyogo Framework for Action*, [Online] Available at: Extract from the final report of the World Conference on Disaster Reduction (A/CONF.206/6) http://www.unisdr.org/files/1037_hyogoframeworkforactionenglish.pdf

United Nations (2006) *Updated UNFCCC reporting guidelines on annual inventories following incorporation of the provisions of decision 14/CP.11*, United Nations Framework Convention on Climate Change [Online] Available at: <http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf>

United Nations (2012) *Op-Ed Article: The World Is Over-Armed And Peace Is Under-Funded*, [Online] Available at: <http://www.un.org/en/events/againstnucleartestsday/2012/pdf/disarmament-oped-august2012.pdf>

United Nations (2012) *Resilient People, Resilient Planet: A Future Worth Choosing*, Secretary-General's High-level Panel on Global Sustainability, [Online] Available at: <http://sustainabledevelopment.un.org/index.php?page=view&nr=374&type=400&menu=35>

United Nations (2013) *World Populations Prospects: The 2012 Revision, Highlights, Volume I Comprehensive Tables*, [Online] Available at: http://esa.un.org/wpp/Documentation/pdf/WPP2012_HIGHLIGHTS.pdf

United Nations (2014) *The Millennium Development Goals Report 2014*. [Online] Available at: <http://www.un.org/millenniumgoals/2014%20MDG%20report/MDG%202014%20English%20web.pdf>

United Nations Environment Programme (2007) *UNEP in Iraq: Post-Conflict Assessment, Clean-up and Reconstruction*. [Online] Available at: http://www.unep.org/disastersandconflicts/portals/155/disastersandconflicts/docs/iraq/Iraq_pccleanup_report.pdf

United Nations Environment Programme (2009) *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment*. [Online] Available at:

http://environmentalpeacebuilding.org/assets/Documents/LibraryItem_010_Doc_191.pdf

United Nations Environment Programme (2010) *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. A Synthesis for Policy Makers, [Online] Available at:

http://www.unep.org/greeneconomy/Portals/88/documents/ger/GER_synthesis_en.pdf

United Nations Environment Programme (2014) *Green Economy Toolkit for Policymakers*. A Guidance Manual for Green Economy Policy Assessment, [Online] Available at:

http://www.unep.org/greeneconomy/Portals/88/documents/GEI%20Highlights/UNEP%20Assessment%20GE%20Policymaking_for%20web.pdf

United Nations Environment Programme (2014) *UNEP Yearbook: Emerging Issues in Our Global Environment*. [Online] Available at: http://www.unep.org/yearbook/2014/PDF/UNEP_YearBook_2014.pdf

United States (1998) *Implications of The Kyoto Protocol on Climate Change Hearing*, Committee On Foreign Relations United States Senate, One Hundred Fifth Congress, Second Session, February 11, 1998, [Online] Available at: <http://www.gpo.gov/fdsys/pkg/CHRG-105shrg46812/pdf/CHRG-105shrg46812.pdf> P. 46

United States (1999) *National Defense Authorization Act*, H.R. 3616, [Online] Available at:

<http://www.gpo.gov/fdsys/pkg/BILLS-105hr3616pcs/pdf/BILLS-105hr3616pcs.pdf>

United States (2009) *Emissions of Greenhouse Gases in the United States 2009*, U.S. Energy Information Administration Report, [Online] Available at:

[http://www.eia.gov/environment/emissions/ghg_report/pdf/0573\(2009\).pdf](http://www.eia.gov/environment/emissions/ghg_report/pdf/0573(2009).pdf)

United States (2009) *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle*. United States Department of the Interior, United States Geological Survey, [Online] Available at: <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>

United States (2011) *Energy for the Warfighter: Operational Energy Strategy*. Department of Defense Report, [Online] Available at:

http://energy.defense.gov/Portals/25/Documents/Reports/20110614_Operational_Energy_Strategy.pdf

United States (2012) *Sustaining U.S. Global Leadership: Priorities for the 21st Century Defense*, Department of Defense report, [Online] Available at: http://www.defense.gov/news/defense_strategic_guidance.pdf

United States (2012) *Aviation Greenhouse Gas Emissions Reduction Plan*. Submission to the Civil Aviation Organization, Federal Aviation Administration, [Online] Available at:

http://www.faa.gov/about/office_org/headquarters_offices/apl/enviro_n_policy_guidance/policy/media/Aviation_Greenhouse_Gas_Emissions_Reduction_Plan.pdf

United States (2013) *Fiscal Year 2012: Operational Energy Annual Report*. Department of Defense. [Online] Available at:

http://energy.defense.gov/Portals/25/Documents/Reports/20131015_FY12_OE_Annual_Report.pdf

United States (2013) *High-Risk Series: An Update*, Report to Congressional Committees, Government Accountability Office (GAO) [Online] Available at: <http://www.gao.gov/assets/660/652133.pdf>

United States (2014) *Climate Change Adaptation: DOD Can Improve Infrastructure Planning and Processes to Better Account for Potential Impacts*. United States Government Accountability Office report. [Online] Available at: <http://www.gao.gov/assets/670/663734.pdf>

United States (2014) *National Climate Assessment*. [Online] Available at: <http://nca2014.globalchange.gov/downloads>

United States (2014) *Quadrennial Defense Review*. Department of Defense [Online] Available at: http://www.defense.gov/pubs/2014_Quadrennial_Defense_Review.pdf

United States (2014) *United States National Climate Assessment Report*. [Online] Available at: <http://nca2014.globalchange.gov/highlights/overview/overview>

United States (2014) *Annual Energy Outlook 2014 with Projections to 2040*. U.S. Energy Information Administration, [Online] Available at: [http://www.eia.gov/forecasts/aeo/pdf/0383\(2014\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2014).pdf)

United States (2014) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*. U.S. Environmental Protection Agency, National Inventory Report, [Online] Available at: https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php

United States (2014) *The Cost of Delaying Action to Stem Climate Change*. Office of the President, [Online] Available at: http://www.whitehouse.gov/sites/default/files/docs/the_cost_of_delaying_action_to_stem_climate_change.pdf

United States Air Force (2011) *F-35 Force Development Evaluation and Weapons School Beddown Environmental Impact Statement*, Report of the Air Combat Command, [Online] Available at: <http://www.nellis.af.mil/shared/media/document/AFD-080404-038.pdf>

United States Government Accountability Office (2014) *F-35 Joint Strike Fighter Problems Completing Software Testing May Hinder Delivery of Expected Warfighting Capabilities*, Report to Congressional Committees, [Online] Available at: <http://www.gao.gov/assets/670/661842.pdf>

World Meteorological Organization (2013) *WMO Greenhouse Gas Bulletin*. [Online] Available at: http://www.wmo.int/pages/prog/arep/gaw/ghg/documents/GHG_Bulletin_No.9_en.pdf

World Meteorological Organization (2013) *Summary of current climate change findings and figures*. WMO November 2013 report, [Online] Available at: <http://www.wmo.int/pages/mediacentre/factsheet/documents/ClimateChangeInfoSheet2013-11rev5FINAL.pdf>

World Meteorological Organization (2014) *WMO statement on the status of the global climate in 2013*, [Online] Available at: http://library.wmo.int/opac/index.php?lvl=notice_display&id=15957#.VAC9GvRDvuF

World People's Agreement (2010) *World People's Conference on Climate Change and the Rights of Mother Earth*. Cochabamba, Bolivia [Online] Available at: <http://pwccc.wordpress.com/support/>

Newspaper Articles and News Sites

Agence France-Presse (2012) "Norway orders first two F-35 fighters as part of \$10bn deal," [Online] Available at: <http://www.defencetalk.com/norway-orders-first-two-f-35-fighters-as-part-of-10bn-deal-43225/>

Davenport, C. (2014) "Climate Change Deemed Growing Security Threat by Military Researchers," *The New York Times*, [Online] Available at: http://www.nytimes.com/2014/05/14/us/politics/climate-change-deemed-growing-security-threat-by-military-researchers.html?_r=0

Davenport, C. (2014) "Obama Pursuing Climate Accord in Lieu of Treaty," *The New York Times*, [Online] Available at: http://www.nytimes.com/2014/08/27/us/politics/obama-pursuing-climate-accord-in-lieu-of-treaty.html?_r=0

Ferris, E. (2014) "Too many humanitarian crises, not enough global resources," *GlobalPost*, [Online] Available at: <http://www.globalpost.com/dispatches/globalpost-blogs/commentary/too-many-humanitarian-crises-not-enough-global-resources>

Goldenberg, S. (2014) "Delaying climate action will carry heavy economic cost, White House warned," *The Guardian*, [Online] Available at: <http://www.theguardian.com/environment/2014/jul/29/delaying-climate-action-economic-cost-white-house-epa>

Goodnough, A. (2011) "In a Green Town, Activists See Red Over Lockheed Martin," *The New York Times*, [Online] Available at: http://www.nytimes.com/2011/05/12/us/12burlington.html?_r=0

Hynes, P.H. (2011) "The Military Assault on Global Climate," *Truthout*, [Online] Available at: <http://www.truth-out.org/news/item/3181:the-military-assault-on-global-climate>

Karbuz, S. (2011) "How Much Energy Does The U.S. Military Consume?" *The Daily Energy Report*, [Online] Available at: <http://www.dailyenergyreport.com/how-much-energy-does-the-u-s-military-consume/>

Knight, D. (1998) "U.S. Exempts Military from Kyoto Treaty," *Inter Press Service News Agency*, [Online] Available at: <http://www.ipsnews.net/1998/05/climate-us-exempts-military-from-kyoto-treaty/>

Leahy, S. (2011) "In Unprecedented Move, Canada Withdraws from Kyoto Protocol," *Inter Press Service News Agency*, [Online] Available at: <http://www.ipsnews.net/2011/12/in-unprecedented-move-canada-withdraws-from-kyoto-protocol/>

MacAskill, E. (2014) "US presses Nato members to increase defence spending," *The Guardian*, [Online] Available at: <http://www.theguardian.com/world/2014/jun/23/us-nato-members-increase-defence-spending>

McLaughlin, D. et al. (2014) "BoFA to Pay \$16.7 Billion to End U.S. Mortgage Probes," *Bloomberg*, [Online] Available at: <http://www.bloomberg.com/news/2014-08-21/bofa-agrees-to-pay-16-65-billion-to-end-u-s-mortgage-probes.html>

Morales, A. and Parkin (2014) "Germany Pledges \$1 Billion to UN Green Climate Fund," *Bloomberg*, [Online] Available at: <http://www.bloomberg.com/news/2014-07-16/germany-pledges-1-billion-to-un-green-climate-fund.html>

Mychalejko, C. (2013) "Turtles and Tomahawk Missiles, Together at Last? War is Not the Answer to Climate Change," *Truthout*, [Online] Available at: <http://truth-out.org/news/item/13917-turtles-and-tomahawk-missiles-together-at-last-war-is-not-the-answer-to-climate-change>

Naidoo, K. (2012) "Two Bullets per Person: The Trillion Dollar Military Spending Club," *The Huffington Post*, [Online] Available at: http://www.huffingtonpost.com/kumi-naidoo/two-bullets-per-person-th_b_1431642.html

Obama, B. and Hollande, F. (2014) "France and the U.S. enjoy a renewed alliance," *The Washington Post*,

http://www.washingtonpost.com/opinions/obama-and-hollande-france-and-the-us-enjoy-a-renewed-alliance/2014/02/09/039ffd34-91af-11e3-b46a-5a3d0d2130da_story.html

Pemberton, M. (2013) "Demilitarizing the Economy: A Movement is Underway," *Common Dreams*, [Online] Available at: <http://www.commondreams.org/views/2013/12/20/demilitarizing-economy-movement-underway>

Rubin, R. (2014) "How Ignoring Climate Change could sink the U.S. Economy," *The Washington Post*, [Online] Available at: http://www.washingtonpost.com/opinions/robert-rubin-how-ignoring-climate-change-could-sink-the-us-economy/2014/07/24/b7b4c00c-0df6-11e4-8341-b8072b1e7348_story.html?utm_content=buffera0d48&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

Schulman, J. (2013) "Defense Contractor: Climate Change Could Create "Business Opportunities," *Mother Jones Magazine*, [Online] Available at: <http://www.motherjones.com/environment/2013/08/raytheon-climate-change-security>

Schwartz Greco, E. and Feffer, J. (2014) "Paying for the Climate Change Pivot," *Truthout*, [Online] Available at: <http://truth-out.org/opinion/item/23322-paying-for-the-climate-change-pivot>

Seip, Lt. General Norman (Ret.) (2012) "The Military's Dependence on Oil is Putting Our Forces at Risk" *American Security Project*, [Online] Available at: <http://www.americansecurityproject.org/the-militarys-dependence-on-oil-is-putting-our-forces-at-risk/>

Web Sites

Climate Funds Update: <http://www.climatefundsupdate.org/>

Costs of War: <http://costsofwar.org/>

Deep Decarbonization Pathways Project (DDPP): <http://unsdsn.org/what-we-do/deep-decarbonization-pathways/>

Earth Charter: <http://www.earthcharterinaction.org>

Environment and Security Initiative: <http://www.envsec.org/index.php?lang=en>

Environmental Peacebuilding: <http://environmentalpeacebuilding.org/>

Federal Contractor Misconduct Database: <http://www.contractormisconduct.org/>

Green Climate Fund (GCF): <http://www.gcfund.org/home.html>

Global Day of Action on Military Spending: <http://www.gdams.org>

Green Economy Initiative (GEI): <http://www.unep.org/greeneconomy/>

Global Environment Facility (GEF): <http://www.thegef.org>

Institute for Sustainable Development and International Relations (IDDRI): <http://www.iddri.org/>

Intergovernmental Panel on Climate Change (IPCC): <http://www.ipcc.ch/>

International Peace Bureau (IPB): <http://www.ipb.org>

Low Carbon Economy Index: <http://www.pwc.co.uk/sustainability-climate-change/publications/low-carbon-economy-index.jhtml>

Militarism/War: The Elephant in the Living Room: http://www.climatesos.org/wp-content/uploads/2010/12/Military_Climate_resolution_Dec10_2010_delivery.pdf

National Priorities Project: <https://www.nationalpriorities.org/>

Stockholm International Peace Research Institute (SIPRI): <http://www.sipri.org/>

Stop the Wars, Stop the Warming: <http://peoplesclimate.org/peace/appeal/>

Sustainable Development Solutions Network (SDSN): <http://unsdsn.org/>

Three Trillion Dollar War: <http://threetrilliondollarwar.org/>

United Nations Decade of Sustainable Energy for All (SE4ALL): <http://www.se4all.org/>

United Nations Environment Programme, Climate Change: <http://www.unep.org/climatechange/>

United Nations Environment Programme, Green Economy: <http://www.unep.org/greeneconomy/>

United Nations Environment Programme, Division of Environmental Law and Conventions, Preventing Military Impacts on Environments: <http://www.unep.org/delc/MilitaryActivities/tabid/78544/Default.aspx>

United Nations Environment Programme, Disasters and Conflicts:
<http://www.unep.org/disastersandconflicts/>

World Meteorological Organization (WMO): https://www.wmo.int/pages/index_en.html

About the International Peace Bureau

The International Peace Bureau is the world's oldest international peace federation and is dedicated to the vision of a *World Without War*. Our 300 member organisations in 70 countries, together with individual members form a global network, bringing together expertise and campaigning experience in a common cause. We try to link experts and campaigns working on similar issues in order to create strong civil society movements. We are a Nobel Peace Laureate (1910); and over the years, 13 of our officers have been recipients of the Nobel Peace Prize. Every year, we award the **Sean MacBride Peace Prize** to an outstanding peacemaker or NGO.

Our current main programme centres on **Disarmament for Sustainable Development** and we campaign mainly on the reallocation of military expenditure. We believe that by reducing funding for the military sector, significant amounts of money could be made available for social projects domestically or abroad and lead to the fulfilment of real human needs. At the same time, we support a range of disarmament campaigns and provide them with data on the economic dimensions of weapons and conflicts. In 2011, we launched an international campaign for the reinvestment of military expenditures – the **Global Day of Action on Military Spending** (www.gdams.org).

IPB and its members are active in many UN initiatives. The IPB has had Consultative Status with the Economic and Social Council since 1977. We also have associate status with the Department of Public Information. IPB is the secretariat of the Geneva-based NGO Committee for Disarmament, which is a committee of CONGO, the Conference of NGOs in Consultative Status with ECOSOC.

In the early 1990s, IPB was active in the World Court Project, which secured an historic Advisory Opinion on nuclear weapons from the International Court of Justice. In 1999, IPB played a central role in organizing a major international congress, the **Hague Appeal for Peace**, held in the Dutch capital, which led to the creation of the **Global Campaign for Peace Education** (www.haguepeace.org). In 2010, IPB launched a travelling photo exhibit called **Making Peace** (www.makingpeace.org) with online education resources to help foster a Culture of Peace. The exhibit has been shown in Geneva, Utrecht, Stockholm, Strasbourg, Sarajevo, and Basel, with other cities planned in the future.

About the Author

Tamara Lorincz, BA, BCOM, MBA, LLB (JSD)

Tamara Lorincz is a Senior Researcher with the International Peace Bureau. She is a Rotary International World Peace Fellow 2013-2014 and pursuing an MA in International Politics and Security Studies at the University of Bradford in the United Kingdom. Tamara is on the national board of the Canadian Voice of Women for Peace and on the international advisory committee of the Global Network Against Weapons and Nuclear Power in Space. In 2003, Tamara graduated with a combined Masters of Business and Law degree specializing in Environmental Management and Environmental Law from Dalhousie University in Halifax, Nova Scotia, Canada. Her research interests are Canadian foreign policy, defence procurement, military expenditures, and gender and militarism.

Contact:

tamara@ipb.org