

## The Climate of Insecurity

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The Intergovernmental Panel on Climate Change (IPCC), the international body that purportedly reflects the state of human understanding of climate change, will soon declare that human-induced change in climate “indirectly increases the risks from violent conflict in the form of civil war, inter-group violence and violent protests by exacerbating well-established drivers of these conflicts such as poverty and economic shocks.”<sup>1</sup>

The IPCC isn’t the only group pushing this view. Days before the most acute superpower crisis of the post Cold War era exploded, during an ongoing civil war in Syria, and amidst continued uncertainties in Afghanistan, the Secretary of State declared climate change to be “the world’s most fearsome weapon of mass destruction.”<sup>2</sup> Lest anyone conclude Secretary Kerry was simply engaging in a rhetorical flourish, the newly appointed head of the State Department’s planning unit, former Congressman and think tank executive Tom Perriello, reinforced the point, stating “Anyone who looks at conflicts around the world understands the role changing climate is playing,” adding that such an understanding should be “integrated into all aspects of diplomacy and development.”<sup>3</sup> Then, the *pièce de résistance*, in early March the Pentagon’s Quadrennial Defense Review called the effects of climate change “threat multipliers” that “will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions – conditions that can enable terrorist activity and other forms of violence.”<sup>4</sup>

These claims are hardly new. Efforts to scare the American public by linking the consequences of energy consumption to international instability and war have been developing for many years now. Indeed, those efforts harken back to a decades-old debate over whether population growth and overconsumption lead to resource scarcity and conflict. As I noted in a September 2012 study of the connection between climate change and national security, these “... efforts to link climate change to the deterioration of U.S. national security rely on improbable scenarios, imprecise and

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speculative methods, and scant empirical support. Accepting the connection can lead to the dangerous expansion of U.S. security concerns, inappropriately applied resources, and diversions of attention from more effective responses to known environmental challenges.”<sup>5</sup>

Indeed, the claims being advanced by the IPCC and the State and Defense Departments are fanciful. Let’s take them in turn:

### ***Climate Change is a Fearsome Weapon of Mass Destruction***

No, actual weapons are designed with the deliberate intent to kill people. Nuclear weapons used in World War II are estimated to have killed hundreds of thousands of people. The weapons available to any nuclear power today dwarf the World War II bombs in destructive power and even the crudest device can cause enormous physical damage. Use of chemical or biological weapons of mass destruction likely pose fewer fatalities than nuclear weapons, but with equally unthinkable consequences.

Deaths associated with climate change-induced storms or other “extreme weather” events first have to be distinguished from naturally occurring weather-related events, droughts, famines, etc. Even if one could distinguish naturally occurring storms and “extreme weather” events (floods, tornadoes, etc.) from those that are “intensified” by anthropogenic global warming, the fatalities involved with such storms are very small when compared to the destructive power of nuclear weapons. According to NOAA, 103 people died in the United States in 2012 as a result of tornadoes, floods, and hurricanes.<sup>6</sup> There are extremes, of course; 553 people perished from tornadoes in 2011 and 1,016 from hurricanes in 2005. Death is a tragedy and I won’t belittle these losses, but the difference in scale is obvious.

One analysis of global mortality trends put the question even more starkly:

“Thus, while extreme weather-related events garnish plenty of attention worldwide because of their episodic and telegenic nature, their contribution to the global mortality burden is relatively minor: 0.03 percent of global deaths.”<sup>7</sup>

Furthermore, even if Secretary Kerry could waive a magic wand and remove the human impact on the climate, there would still be weather-related deaths. Indeed, the IPCC’s own assessment of climate science casts doubt on the linkage between man’s activities and extreme weather events. Dr. Robert Pielke, Jr, compiled the following statements from the IPCC’s Fifth Assessment Report’s chapter on extreme weather:<sup>8</sup>

- “Overall, the most robust global changes in climate extremes are seen in measures of daily temperature, including to some extent, heat waves.

Precipitation extremes also appear to be increasing, but there is large spatial variability”

- “There is limited evidence of changes in extremes associated with other climate variables since the mid-20th century”
- “Current datasets indicate no significant observed trends in global tropical cyclone frequency over the past century ... No robust trends in annual numbers of tropical storms, hurricanes and major hurricanes counts have been identified over the past 100 years in the North Atlantic basin”
- “In summary, there continues to be a lack of evidence and thus low confidence regarding the sign of trend in the magnitude and/or frequency of floods on a global scale”
- “In summary, there is low confidence in observed trends in small-scale severe weather phenomena such as hail and thunderstorms because of historical data inhomogeneities and inadequacies in monitoring systems”
- “In summary, the current assessment concludes that there is not enough evidence at present to suggest more than low confidence in a global-scale observed trend in drought or dryness (lack of rainfall) since the middle of the 20th century due to lack of direct observations, geographical inconsistencies in the trends, and dependencies of inferred trends on the index choice. Based on updated studies, AR4 conclusions regarding global increasing trends in drought since the 1970s were probably overstated. However, it is likely that the frequency and intensity of drought has increased in the Mediterranean and West Africa and decreased in central North America and north-west Australia since 1950”
- “In summary, confidence in large scale changes in the intensity of extreme extratropical cyclones since 1900 is low”

At best, the security consequences of climate change are indirect. Man’s activities have to warm the Earth, that warming has to produce demonstrable environmental side effects, those side effects have to overwhelm human tolerance and adaptive or responsive efforts, and then, and only then, are the conditions for conflict sowed. As I noted:

“... each step involves acceptance of two separate sets of arguments, each with its own set of assumptions, theories and variables. The arguments are sequential and additive, meaning that each action creates a response leading to another action. The overall argument weakens substantially if it can be shown that environmental stressors are not sources of intrastate or interstate conflict – or if temperatures do rise as much as predicted or expected, implying that environmental conditions may not worsen enough to cause instability or conflict.”<sup>9</sup>

So then, rhetorical flourishes aside, the merits of the claim are weak and, frankly, the argument is dangerous for it clearly distracts policymakers from immediate and tangible threats to international security and risks trivializing the threats posed by actual weapons of mass destruction.

### **Climate Change is a “Threat Multiplier” and Increases the Risk of Conflict**

The climate-security argument is a perfect example of a linear argument – some action occurs which renders another action worse than it may have already been, which, in turn, may worsen something else until the end result (war, death, etc.). The conditions that are “worsened” will happen regardless, rendering unique causality impossible. Rising temperatures do not by themselves result in war or civil instability. Rising temperatures are “threat multipliers,” meaning, in true linear fashion, they supposedly make other things worse. A review of the climate security literature shows famine and drought as the outcomes most likely cited to incite civil instability or nation-state conflict.

The surface temperature trends depicted in Figure 1 show a rising trend from the early 20<sup>th</sup> century to a recent leveling.<sup>10</sup> There are many, many concerns with this depiction of temperature and its meaning for the climate science and policy debate, but for purposes of testing the proposition that warming temperatures lead to conflict, accept it as true.

As the figure shows, temperature has increased by nearly a 1°C. Are there more droughts? More famines? Are there any conflicts that can be linked to these variables to the exclusion of other factors?

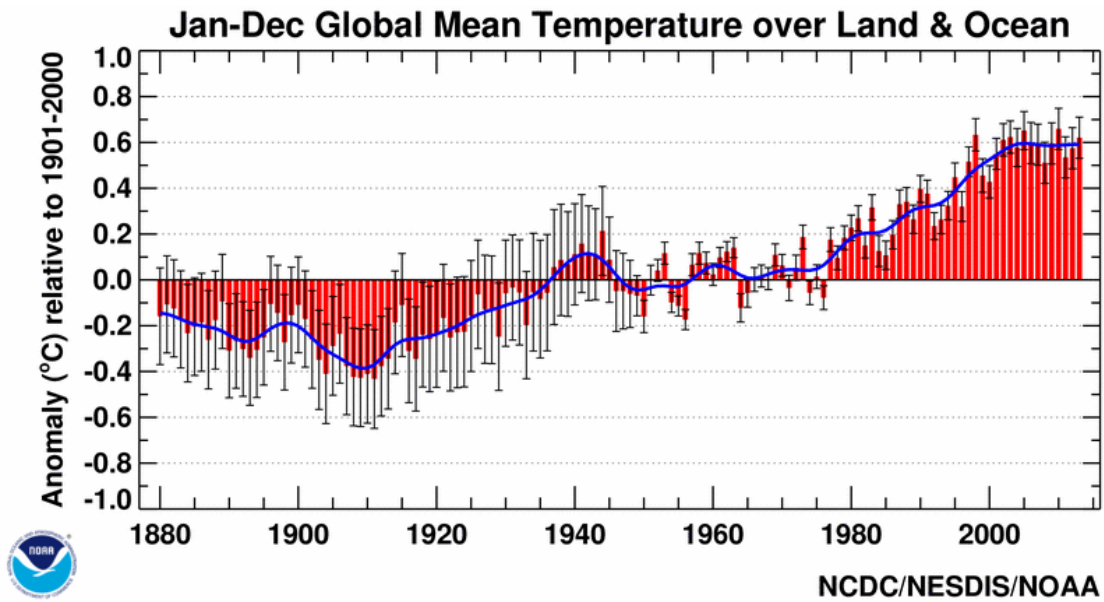
According to the UN’s Food and Agriculture Organization (FAO), “In the past 50 years, global crop production has expanded threefold. This increase has been driven largely by higher yields per unit of land and crop intensification....”<sup>11</sup>

The World Health Organization reports that “Analysis of FAOSTAT data shows that dietary

energy measured in kcals per capita per day has been steadily increasing on a worldwide basis; availability of calories per capita from the mid-1960s to the late 1990s increased globally by

Figure 1

Surface Temperature Trends, 1880-2013



approximately 450 kcal per capita per day and by over 600 kcal per capita per day in developing countries (see Table 1).<sup>12</sup> That table is reproduced below:

**Table 1. Global and regional per capita food consumption (kcal per capita per day)**

<b>Region</b>	<b>1964 - 1966</b>	<b>1974 - 1976</b>	<b>1984 - 1986</b>	<b>1997 - 1999</b>	<b>2015</b>	<b>2030</b>
World	2358	2435	2655	2803	2940	3050
Developing countries	2054	2152	2450	2681	2850	2980
Near East and North Africa	2290	2591	2953	3006	3090	3170
Sub-Saharan Africa	2058	2079	2057	2195	2360	2540
Latin America and the Caribbean	2393	2546	2689	2824	2980	3140
East Asia	1957	2105	2559	2921	3060	3190
South Asia	2017	1986	2205	2403	2700	2900
Industrialized countries	2947	3065	3206	3380	3440	3500
Transition countries	3222	3385	3379	2906	3060	3180

And the data shows the trend towards more food consumption per person per day is true across every region of the world. Countries in “economic transition” showed a drop in the late 1990s, which given the overall trends suggests economic and political explanations over environmental ones, and even they are projected to rise in the coming years. So, even during a period when global temperatures are rising, food production continues to expand.

Finally, the World Health Organization offers this insight into the future, stating:

“In recent years the growth rates of world agricultural production and crop yields have slowed. This has raised fears that the world may not be able to grow enough food and other commodities to ensure that future populations are adequately fed. However, the slowdown has occurred not because of shortages of land or water but rather because demand for agricultural products has also slowed. This is mainly because world population growth rates have been declining since the late 1960s, and fairly high levels of food consumption per person are now being reached in many countries, beyond which further rises will

be limited.”<sup>13</sup>

What about droughts? The IPCC and the climate insecurity community assert that rising temperatures produce more droughts and therefore famine. According to new research, the trends are less than clear. *Science* magazine, no home for the skeptical community, reported that:

“The picture of expanding drought painted by the Intergovernmental Panel on Climate Change may not be quite as arid as it looks. A technique commonly used to estimate the severity of a drought may actually overestimate the effects of dry spells, new research suggests. Worldwide climate data combined with a more refined technique for assessing droughts reveal that they haven't expanded as much in recent decades as previously thought.”<sup>14</sup>

Dr. Pielke, Jr., again doing yeoman's work separating the science from the hyperbole, offers this insight into what the IPCC actually says about drought:

“This is a short post about drought, which simply summarizes the bottom-line conclusions of two of the most recent major scientific assessments of extreme events and climate change, one by the US government, released in 2008 under the Bush administration (and then reaffirmed in the CCSP Unified Synthesis under the Obama Administration) and the second from the IPCC.

First, from the US government's assessment of extreme events in the US, here is what it concluded about drought:

*‘The most widespread and severe drought conditions occurred in the 1930s and 1950s (Andreadis et al., 2005). The early 2000s were also characterized by severe droughts in some areas, notably in the western United States. When averaged across the entire United States (Figure 2.6), there is no clear tendency for a trend based on the PDSI. Similarly, long-term trends (1925-2003) of hydrologic droughts based on model derived soil moisture and runoff show that droughts have, for the most part, become shorter, less frequent, and cover a smaller portion of the U. S. over the last century (Andreadis and Lettenmaier, 2006). The main exception is the Southwest and parts of the interior of the West, where increased temperature has led to rising drought trends (Groisman et al., 2004; Andreadis and Lettenmaier, 2006). The trends averaged over all of North America since 1950 (Figure 2.6) are similar to U.S. trends for the same period, indicating no overall trend.’*

Got that? Over the climate time scales ‘droughts have, for the most part, become shorter, less frequent, and cover a smaller portion of the U. S. over the last century.’ ...

The IPCC in 2012 conducted a survey of drought globally, and concluded with the following:

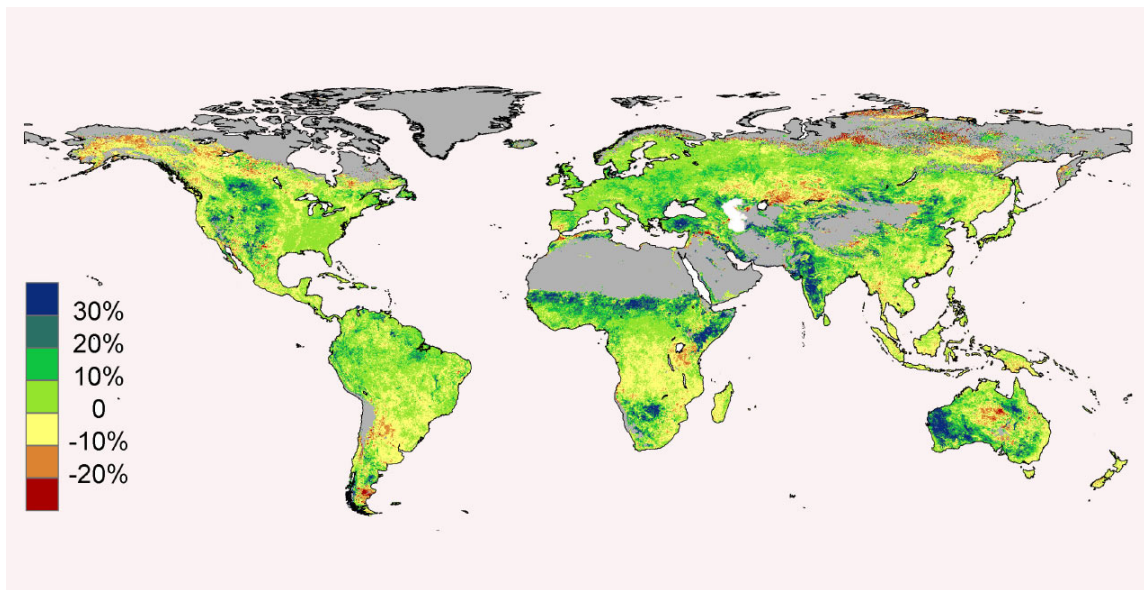
*‘There is not enough evidence at present to suggest high confidence in observed trends in dryness due to lack of direct observations, some geographical inconsistencies in the trends, and some dependencies of inferred trends on the index choice. There is medium confidence that since the 1950s some regions of the world have experienced more intense and longer droughts (e.g., southern Europe, west Africa) but also opposite trends exist in other regions (e.g., central North America, northwestern Australia).’*

Got that? Some places have become dryer, others wetter, and not much confidence in asserting the presence of any trends at the global scale.”<sup>15</sup>

Additionally, trends suggest surface vegetation is increasing worldwide. A 2013 study looked over the 29-year period 1982-2010 (see Figure 2) and found that most of the areas showed a net greening, with an overall increase of 11%.<sup>16</sup>

**Figure 2**

**Satellite Data Shows the Percent Change that Foliage Cover Has Changed, 1982-2010**





Even when droughts occur, they don't lead to war. One recent survey explored the linkages between water scarcity, drought, and incidence of civil wars. They found that factors other than the environment were much more significant in explaining the onset of conflict. They conclude:

“The results presented in this article demonstrate that there is no direct, short-term relationship between drought and civil war onset, even within contexts presumed most conducive to violence ... Ethnopolitical exclusion is strongly and robustly related to the local risk of civil war. These findings contrast with efforts to blame violent conflict and atrocities on exogenous non-anthropogenic events, such as droughts or desertification. The primary causes of intrastate armed conflict and civil war are political, not environmental.”<sup>17</sup>

Furthermore, my detailed review of the empirical literature on the role of environmental degradation as a source of conflict shows:

“By themselves, environmental factors and climate change are not threat multipliers. The review of actual experiences with environmental stresses and calamities reveals that they contribute to conflict and state instability only at the margins. From tribesmen in Africa to nation states in both the developing and developed world, environmental and climatic variables fail to demonstrate explanatory power as a source or driver of conflict.”<sup>18</sup>

## **Conclusion**

Readers are encouraged to look at the underlying proof offered in support of the climate insecurity thesis. There they will find “expert opinion” of retired military officers and think tank executives and descriptive scenarios that on the surface appear plausible (famine/floods produce refugees in unstable places creating conditions for further instability). But, further scrutiny of the scenarios offered and the case studies on which the claims are based reveal more nuanced explanations. Political and economic factors prove to be much better and more compelling explanations for men to fight other men.

Our national security establishment would better serve the national interest by focusing their attention elsewhere.

## Endnotes

<sup>1</sup> Tom Bawden (2014). "Official Prophecy of Doom," *The Independent*, <http://www.independent.co.uk/environment/climate-change/official-prophecy-of-doom-global-warming-will-cause-widespread-conflict-displace-millions-of-people-and-devastate-the-global-economy-9198171.html>.

<sup>2</sup> John Kerry (2014). "Remarks on Climate Change" Delivered on February 16, 2014, in Jakarta, Indonesia, <http://www.state.gov/secretary/remarks/2014/02/221704.htm>.

<sup>3</sup> Ryan Grim (2014). "State Department Review to Emphasize Effects of Climate Change on Global Conflict." *Huffington Post*, [http://www.huffingtonpost.com/2014/02/21/tom-perriello\\_n\\_4827886.html?utm\\_hp\\_ref=tw](http://www.huffingtonpost.com/2014/02/21/tom-perriello_n_4827886.html?utm_hp_ref=tw).

<sup>4</sup> U.S. Department of Defense (2014). *Quadrennial Defense Review*. (Washington, DC): 8.

<sup>5</sup> Jeff Kueter (2012). *Climate and National Security: Exploring the Connection* (Arlington, VA: George C. Marshall Institute): 5, <http://marshall.org/climate-change/climate-and-national-security-exploring-the-connection/>.

<sup>6</sup> [http://www.nws.noaa.gov/om/hazstats/resources/weather\\_fatalities.pdf](http://www.nws.noaa.gov/om/hazstats/resources/weather_fatalities.pdf)

<sup>7</sup> Indur Goklany (2007). *Death and Death Rates Due to Extreme Weather Events* (International Policy Network: London): 6, [http://www.csecc.info/reports/report\\_23.pdf](http://www.csecc.info/reports/report_23.pdf).

<sup>8</sup> Robert Pielke, Jr. (2013). "Coverage of Extreme Events in the IPCC AR5." <http://rogerpielkejr.blogspot.com/2013/10/coverage-of-extreme-events-in-ipcc-ar5.html>.

<sup>9</sup> Kueter (2012): 2.

<sup>10</sup> From NOAA at <https://www2.ucar.edu/climate/faq/how-much-has-global-temperature-risen-last-100-years>

<sup>11</sup> UN Food & Agriculture Organization (2013). *FAO Statistical Yearbook 2013* (Rome, Italy: United Nations): 128, <http://issuu.com/faoftheun/docs/syb2013issuu>.

<sup>12</sup> World Health Organization (2013). "Global and Regional Food Consumption Patterns and Trends," [http://www.who.int/nutrition/topics/3\\_foodconsumption/en/](http://www.who.int/nutrition/topics/3_foodconsumption/en/).

<sup>13</sup> World Health Organization (2013). "Global and Regional Food Consumption Patterns and Trends," [http://www.who.int/nutrition/topics/3\\_foodconsumption/en/index6.html](http://www.who.int/nutrition/topics/3_foodconsumption/en/index6.html).

<sup>14</sup> Sid Perkins (2012). "Recent Drought Trends Not So Cut-and-Dried." *Science Now*, November 14, 2012, <http://news.sciencemag.org/earth/2012/11/recent-drought-trends-not-so-cut-and-dried>.

<sup>15</sup> Roger Pielke, Jr. (2012). "Drought and Climate Change." <http://rogerpielkejr.blogspot.com/2012/09/drought-and-climate-change.html>.

<sup>16</sup> Sci-News.com (2013). "Rising Carbon Dioxide Levels Cause Desert Greening, Satellite Observations Reveal," <http://www.sci-news.com/othersciences/geophysics/science-carbon-dioxide-desert-greening-01209.html>.

<sup>17</sup> Theisen, Ole Magnus, Helge Holtermann, and Halvard Buhaug. "Climate Wars? Assessing the Claim that Drought Breeds Conflict." *International Security* 36, no. 3 (2011): 79-106.

<sup>18</sup> Kueter (2012): 34.