**1NC**

**A. Interpretation: The aff must defend that one or more member nations of the WTO reduce IP protections for medicines. “Nations” in the resolution is a plural noun which implicates more than one nation.**

Daniel **Scocco, 2007** (English Grammar 101: Plural Form of Nouns. Online. Internet. Accessed May 13, 2014 at http://www.dailywritingtips.com/english-grammar-101-plural-form-of-nouns/)

**The English language has both regular and irregular plural forms of nouns. The most common case is when you need to add -s to the noun. For example one car and two cars.**

**Nations is definitely plural.**

**Collins Dictionary** https://www.collinsdictionary.com/dictionary/english/nation#:~:text=Word%20forms%3A%20plural%20nations

**Word forms: plural nations**

**B. Violation: The plan only applies to one nation**

**C. Vote neg –**

**1. Jurisdiction – the resolution they agreed to debate pluralizes countries for a reason. Outweighs all pragmatic standards:**

**A. Topicality is a constitutive rule of the activity, they agreed to debate the topic when they came to the tournament, and they should be held to that agreement. Tournament invitation says we are debating Sept-Oct, not a different topic.**

**B. You only have jurisdiction to vote on topical advocacies, you can’t vote affirmative if they haven’t affirmed.**

**2. Limits – their interp allows them to specify any country which explodes neg prep burden since there’s no unifying ground versus the Jordan aff or Russia aff – specifying two forces the aff to have a defense of the two countries in the literature which solves limits but still allows for a robust set of affs like the US and China, developing countries, and more.**

**4. TVA – defend Jordan and the uS – TRIPS plus is what causing the worse economic situation in Jordan**

**D. Topicality is a voting issue that should be evaluated through competing interpretations – it tells the negative what they do and do not have to prepare for—there’s no way for the negative to know what constitutes a “reasonable interpretation” when we do prep – reasonability is arbitrary and causes a race to the bottom, proliferating abuse**

**No RVIs—it’s your burden to be topical**

**1NC**

#### Oil prices are sliding – two days in a row, dollar strength, Ida, increased production, and tapering asset purchases

Paraskova 9/20/21 [Tsvetana is a writer for Oilprice.com with over a decade of experience writing for news outlets such as iNVEZZ and SeeNews. "Oil Prices Fall As Traders Anxiously Await Fed’s Decision." https://oilprice.com/Energy/Oil-Prices/Oil-Prices-Fall-As-Traders-Anxiously-Await-Feds-Decision.html]

Oil prices dropped early on Monday as the U.S. dollar continues to strengthen ahead of the Fed’s much-anticipated policy meeting this week, which could announce the beginning of stimulus easing.

As of 9:05 a.m. EDT, WTI Crude was losing 1.75% at $70.71 and Brent Crude prices were down 1.49% at $74.21.

The oil market is down for a second consecutive day after Friday’s session settled in the red, as broader markets are anxiously watching whether the Federal Reserve will announce the start of asset purchase tapering at its meetings on Tuesday and Wednesday. The U.S. dollar gains were depressing the oil market as a stronger greenback makes oil buying more expensive for holders of other currencies.

The risk to U.S. oil production in the Gulf of Mexico is now diminishing as more output is being restored in the wake of Hurricane Ida. The return of more production from the U.S. offshore also weighed on oil prices early on Monday.

“As this week starts, much of the US market tightening on account of Ida is already baked into prices, while outages in offshore oil production and Louisiana refining capacity are continuing to ease,” Vanda Insights said in a note early on Monday.

The U.S. dollar and the Fed meeting will be the key external factors that will determine oil’s direction this week, apart from the usual U.S. inventory reports by the API and EIA, ING strategists Warren Patterson and Wenyu Yao say.

“All eyes will be on the FOMC meeting on Wednesday, where some believe we could already see the Fed announce its intentions to start tapering asset purchases, though our US economist is of the view that an announcement is more likely in November. A tapering announcement this week would likely put some downward pressure on oil and the broader commodities complex,” they noted.

#### Oil prices will decline – OPEC will increase production – our ev is predictive

Julia Fanzeres 9-30-21, "Biden renews OPEC outreach as oil prices climb 10% in September," 9-30-2021 https://www.worldoil.com/news/2021/9/30/biden-renews-opec-outreach-as-oil-prices-climb-10-in-september

The rising price of oil “is of concern for the U.S.,” said White House press secretary Jennifer Psaki. The U.S. has been in touch with OPEC about oil prices, she said at a press briefing. Heading into next week’s meeting between OPEC and its partners, there is increased speculation that the organization will consider raising production more than the previously announced hike of 400,000 barrels a day.

“With oil prices at multi-year highs, we think that OPEC will come under increasingly intense pressure from Washington to increase production,” RBC analyst Helima Croft said in report.

#### Middle East war is good—it raises oil prices

Lynch 18 [Michael Lynch spent nearly 30 years at MIT as a student and then researcher at the Energy Laboratory and Center for International Studies. He then spent several years at what is now IHS Global Insight and was chief energy economist. Currently, Lynch serves as the president of Strategic Energy and Economic Research, Inc., and lectures MBA students at Vienna University. He’s been president of the US Association for Energy Economics and serves on the editorial boards of three publications. Will Oil Prices Blow Up With The Middle East? April 12, 2018. https://www.forbes.com/sites/michaellynch/2018/04/12/will-the-oil-price-blow-up-with-the-middle-east/#166754c23d19]

It's said that a woman once approached 19th century German Chancellor Bismarck and asked him to explain the controversy over Schleswig-Holstein, to which Bismarck responded, “Madam, only three people have ever understood Schleswig-Holstein. One is dead, the second has gone mad, and I’m the third and I’ve quite forgot.” This summarizes how I feel about the current Middle East situation. The public rhetoric (including tweets) suggests that the U.S. and Russia are both willing to attack each other’s forces -- the U.S. is planning an attack on Syrian forces that might affect Russian personnel and Russia is apparently threatening to shoot down U.S. planes. This is obviously concerning, and while incidental Russia casualties might not lead to a direct military response, if Russia shot down a U.S. plane (as opposed to an unmanned missile), the U.S. would almost certainly respond. Given that the Russians know this, they are unlikely to take such a step. An additional factor is the possibility that Iranian forces in Syria would be hit by any U.S. attack, which might invite retaliation. Iran is unlikely to be able to attack U.S. forces in the Mediterranean directly, but forces in Iraq and Syria might be subject to ‘asymmetrical warfare,’ i.e., small-scale attacks, possibly including suicide bombers. The threat to oil markets come if Iranian actions encourage President Trump to refuse to recertify the Iranian nuclear agreement in mid-May. While many of Iran’s customers in Asia would not be concerned, there might be some drop in sales from companies fearful of U.S. legal action. Sanctions on financial transfers would also deter the more conventional customers, but the Iranians should be able to work around that after a brief pause. Could this also mean an escalation in the conflict between Iran and Saudi Arabia (or more broadly but less accurately, Shia versus Sunni regimes)? Given that the Saudis have been attacking Iranian-supported Houthis in Yemen without direct response by Iran for some time now, any Saudi actions in Syria seem unlikely to be a provocation that would worsen the situation in the Gulf. FDR’s comment that ‘we have nothing to fear but fear itself’ seems appropriate for oil traders. Bombs and missiles flying in the greater Middle East always creates a bullish impetus on prices, even if the oil fields remain distant from the actual violence. The death of Russian personnel would worsen this, as it implies a greater probability of retaliation and continuation of the conflict which, again, would push up oil prices. And naturally, should Iranian personnel be affected, there would be very rational concerns that they might respond with some sort of attack that could affect Gulf oil trade. The worst case scenarios -- ongoing U.S.-Russian combat or direct Saudi-Iranian fighting -- seem very unlikely to happen. But as long as the possibility exists, oil prices will remain elevated, with WTI perhaps hitting $70 or higher, and only coming down when it has become clear that the violence is diminishing and will not spread. Until then, expect a bumpy ride.

#### Oil and gas key to Canadian economy – contributes both directly and indirectly to the rest of the economy

* 8 percent of Canadian GDP & tax revenue
* Direct contributor through employment
* Indirect contributor through links to other industries

Globerman and Emes 19, Steven Globerman is a Resident Scholar and Addington Chair in Measurement, Professor Emeritus, Western Washington University and Joel Emes is a Senior Fellow at Fraser Institute, 5-7-2019, "Investment in the Canadian and U.S. Oil and Gas Sectors: A Tale of Diverging Fortunes," Fraser Institute, https://www.fraserinstitute.org/studies/investment-in-the-canadian-and-us-oil-and-gas-sectors-a-tale-of-diverging-fortunes, HKR-AT

The **oil and gas industry is critically important to Canada’s economy.** **It accounts for almost 8 percent of Canada’s GDP,** as well as for a significant share of the tax revenue collected by governments. The oil and gas sector is particularly important to the provincial economies of Alberta and Saskatchewan. It accounts for almost 30 percent of Alberta’s GDP and slightly over 23 percent of Saskatchewan’s GDP. As such, the economic health of the oil and gas sector is a direct contributor to employment and economic activity in Western Canada and an indirect contributor to the rest of the domestic economy through links to industries that supply inputs to the sector, as well as use the outputs of the sector. The upstream segment of the oil and gas sector encompasses exploration and production of crude oil and natural gas. It is the single largest segment of the oil and gas sector, which also includes midstream gathering and pipeline facilities and downstream refineries. The oil sands account for almost two-thirds of Canada’s oil production. Since activity in the mid and downstream sectors will ultimately reflect the production of crude oil and natural gas in the upstream sector, the willingness of companies to explore for and produce oil and gas in Western Canada dictates the pace of economic activity throughout the industry’s total supply chain. A sharp drop in the world price of crude oil in 2015 and 2016 hurt the profitability of upstream oil and gas companies in both Canada and the US. However, while economic activity in the US upstream segment increased substantially with a modest recovery in crude oil prices in 2017 and 2018, investment in Canada’s upstream segment as a share of total capital expenditures in Canada declined consistently from 2014 through 2018. While total capital expenditures in Canada declined post-2014, the decline in capital expenditures for oil and gas extraction was even more pronounced. Thus, while capital expenditures for oil and gas extraction accounted for approximately 28 percent of total Canadian industrial capital expenditures in 2014, oil and gas extraction accounted for only 14 percent in 2018. Investment analysts and portfolio managers have recently warned that investment in the oil and gas sector is moving increasingly to the US and away from Canada, and that they are reluctant to invest their clients’ savings in Canadian oil and gas companies. An unfavourable business environment for oil and gas exploration and production in Canada is cited as the reason, particularly compared to the business environment in the US. A number of Canadian oil and gas companies have also reallocated their exploration budgets away from Western Canada to the more profitable shale oil producing regions of the United States. In the absence of changes to Canadian government policies affecting the sector, relatively low prices for Western Canada crude oil as well as depressed profitability of Canadian oil and gas companies are likely to continue. As a consequence, the ongoing shift in the location preferences of North American oil and gas companies towards the US might well intensify with drastic consequences for the fiscal health of the Alberta and Saskatchewan governments. While limited pipeline capacity is the major factor depressing the price of Canadian heavy crude oil, more favourable tax and regulatory environments in the US compared to Canada are also contributing to the diversion of upstream oil and gas investments from Canada to the US. By way of illustration, whereas capital expenditures in the upstream segment were around 41 percent higher for the US when comparing 2018 to 2016, they were only about 15 percent higher in Canada. An investment manager in the United Kingdom recently wrote a letter to Prime Minister Trudeau saying that it was hard for her to watch a vibrant Canadian oil and gas industry being strangled by regulation, carbon taxes, and the inability of producers to get their products to world markets. Recent investment patterns in the North American oil and gas sector support this sentiment.

#### Strong economy key to Canada’s global influence

Tilson 14 , MP, Ottawa Journal

(David, “Federal government promotes Canada’s global leadership,” 7-9-14, DOA: 12-29-14, <http://www.newspapers-online.com/caledon/?p=8477>, ava)

Canada is positioned to be a strong and credible voice on key issues in our global community. Our prominence and global influence on the world stage continues to grow under the leadership of Prime Minister Stephen Harper. In a time of global economic uncertainty, our government has prioritized Canada’s economic recovery and resulted in significant measures of economic success. With the creation of more than one million net new jobs since the depth of the global recession, we have the best job growth record among all G7 members. Our government’s investment in jobs, growth and long-term prosperity has enhanced the resilience of the Canadian economy, our economic credibility and in turn demonstrated to the international community that Canada is a great place to invest. Our government has remained focused on pursuing an ambitious and balanced trade agenda that will help Canada’s economic recovery and ensure long-term prosperity. In October, our government reached a free trade agreement with the European Union, a historic accomplishment for Canada’s trade relations. It will boost Canada’s economy by $12 billion annually — the equivalent of 80,000 jobs — and Canadian businesses will have preferential market access to the EU’s half a billion consumers. We also reached an agreement for free trade with South Korea, which is expected to help grow our economy by $1.7 billion per year. In addition to increased jobs and economic activity, expanding Canada’s free trade agreements also provides hard-working families more choice at a lower cost for everyday household goods. We are also working to maintain and build on all of Canada’s bilateral relationships. While in Malaysia, Prime Minister Harper signed a declaration of intent to conclude a new tax agreement between Canada and Malaysia to help promote trade and investment between the two countries. In an increasingly global community with shared concerns, our government is also committed to helping ensure the safety and security of Canadians and our interests abroad. While in Malaysia, Prime Minister Harper renewed our commitment to enhance security cooperation between the two countries for the safety of all our citizens. Prime Minister Harper also announced Canadian support for four projects that will strengthen Malaysia’s ability to counter international crime, human smuggling, and organized crimes. These projects build on what we’ve already done in the global community to help combat money laundering, terrorist financing, corruption, tax evasion and other crimes. Canada’s growing prominence on the world stage has also afforded us the opportunity to take a leadership role within the international community to address issues of human rights and equality, while promoting Canadian values of freedom, democracy, and rule of law. Our government introduced the Office of Religious Freedom to promote Canadian values of pluralism and tolerance in our global community. The Office is working with like-minded partners to raise awareness and develop policies and programs to protect religious minorities under threat, to oppose religious hatred and to promote tolerance. Prime Minister Harper has also demonstrated real leadership in addressing the health challenges and disadvantages faced by women, infants, and children in the poorest of countries, in launching the Muskoka Initiative on Maternal, Newborn and Child Health with G8 countries in 2010. Thanks to the Muskoka Initiative and subsequent global action, maternal and child mortality rates are declining. However, there is still more work to be done. Canada hosted the Summit on Maternal, Newborn and Child Health. Through this Summit, we are accelerating our health initiatives and continuing to push this issue into the forefront. Indeed, our government announced that Canada will be providing an additional $3.5 billion in funding for various projects to help children and mothers in the developing world. As we strengthen ties and promote economic prosperity, Canada is positioned to lead on the world stage and promote Canadian values. Our government is delivering on the priorities of Canadians.

#### Only Canadian soft power can solve international threats

Malik 20 Malik, Sadia Mariam. Assistant Professor, Department of Economics, York University, Canada "Canada must use its 'soft power' to champion global human rights." Conversation, 25 Feb. 2020, theconversation.com/canada-must-use-its-soft-power-to-champion-global-human-rights-132177. [HKR QC]

As the world enters the third decade of the 21st century, it is waking up to a new reality, facing threats to international solidarity and human security that are not necessarily economic in nature. Climate change, inequality, populist movements, ethnic nationalism and global epidemics are posing major challenges to international development and human security. Disenchantment with the neoliberal economic system and unregulated capitalism is growing. And on the political front, the global balance of power is shifting as we move away from a unipolar world, dominated largely by the United States, to a bipolar world where China is emerging as the major counterpart to the U.S. Read more: What exactly is neoliberalism? These turbulent times pose challenges and call for collective action since many threats to human security can no longer be contained within the geographical boundaries of nation states. Although Canada has reduced its foreign aid commitments recently, it has great potential to make up for it by using its soft power to address issues of international development and security. Soft power is defined as a persuasive approach to international relations and diplomacy that doesn’t involve coercion and trades on a country’s cultural and economic influence. Since the world and the nature of threats to human security and solidarity have changed, our approach to international solidarity and development must also change. In many ways, Canada is well-prepared to lead that change. No longer all about income The notion of international development, as historically understood in light of an income-centred approach, is now being increasingly contested. For too long, we have measured progress and well-being in terms of expansion in GDP alone and framed issues of international development predominantly in terms of lack of income. Read more: Why our obsession with GDP ignores harm done to welfare and the world There are growing calls to question this approach. Economic growth is of little use if it doesn’t promote broad-based human well-being, leads to climate change and threatens the very survival of the human race. What the world needs today, more than ever, is a model of international development that is decolonized, humane and centred on human rights and freedoms. Nobel laureate Amartya Sen is seen at an event at Harvard University in May 2015. (Gretchen Ertl/AP Images for FXB) The United Nations — under the intellectual guidance of scholars like Amartya Sen and development practitioners like Mahbub ul Haq — has made significant headway in popularizing a more humane model of international development through the publication of its Annual Human Development Reports and the Human Development Index. It has also influenced global security discourse by popularizing a concept of human security that transcends the traditional focus on territorial security and encompasses health, food and environmental safety. That concept recognizes the geographic and spatial connectivity of threats. It’s based on the realization that the battle for human survival in the future will be fought not by defending national borders but by understanding the interconnectedness of the fate of human race — and by evoking the compassion that unites us as fellow human beings. The intellectual foundations of the UN’s Sustainable Development Goals (SDGs) also rest on the concept of human security. Canada has been at the forefront of promoting this concept. Through the formation of the Human Security Network with like-minded countries, Canada was successful, to an extent, in influencing global institutions to promote a human security agenda. New threats Canada needs to continue its efforts in this direction, especially in light of new or heightened threats to human security that the world faces today in the form of climate change, polarization, ethnic nationalism, intolerance and the global spread of disease. Canada’s efforts in promoting a human rights-based approach to international solidarity are commendable. Whether it’s an issue of freedom of speech violations in repressive regimes or assisting international refugees, Canada has adopted a humane approach and has set high moral standards. Read more: Syrian refugees in Canada: Four years after the welcome Given the current shift in the global balance of power from U.S. dominance to the one that includes China and other emerging economies, middle-power countries like Canada, France and Germany will be in a better position to use their soft power to influence global institutions on human rights-based development and to promote much-needed human rights around the world. Although Canada’s recent reduction in foreign aid has been harshly criticized, it can be seen in a positive light as it signals a move away from problem-solving approach that is based on short-term humanitarian assistance. What’s really needed for long-term sustainable development is to address the root causes of underdevelopment, which include unaccountable governments, corruption, concentration of political power in the hands of the few without proper checks and balances or rule of law, weak property rights and contract enforcement, and lack of opportunities for the vast majority of citizens. Genuine global leadership needed But whether Canada’s decision to reduce foreign aid signals the need to address the root causes of underdevelopment isn’t clear. Too often, the Global North has supported repressive, dictatorial regimes in the Global South to promote its own economic and geopolitical interests. It’s time to realize that sustainable and people-centred development is not possible as long as unequal structures of power and repressive political regimes remain intact in developing countries. The world is ready for a new vision that defines human progress in a profound way and recognizes the interconnectedness of the fate of humanity. But to achieve this, we need a genuine and credible global leadership. Given Canada’s global image and its historical record in promoting ethical norms and freedoms around the world, it commands greater legitimacy. However, to bring about genuine change, middle-power countries like Canada must adopt a leadership role in pursuing an ethical agenda to ensure the security and survival of humanity.

#### ME war stops Saudi Arabia nuclear energy development

Green 17 [Dr Jim Green is the national nuclear campaigner with Friends of the Earth, Australia and editor of the Nuclear Monitor newsletter, published by the World Information Service on Energy. Is Saudi Arabia going nuclear? April 12, 2017. https://www.wiseinternational.org/nuclear-monitor/854/saudi-arabia-going-nuclear]

Military conflict Military conflict has been a recurring feature of Middle Eastern politics for decades and it isn't difficult to imagine military conflicts complicating and compromising nuclear power plants and associated facilities such as spent fuel stores. Since 2015, Saudi forces have intercepted missile attacks from Yemen on several occasions, including a missile attack on King Khalid International Airport in Riyadh in November 2017. "All airports, ports, border crossings and areas of any importance to Saudi Arabia and the UAE will be a direct target of our weapons, which is a legitimate right," the Houthi political office said in a statement on 7 November 2017.57 On 6 November 2017, the New York Times reported on the intercepted missile attack on the Riyadh airport: "Saudi Arabia charged Monday that a missile fired at its capital from Yemen over the weekend was an "act of war" by Iran, in the sharpest escalation in nearly three decades of mounting hostility between the two regional rivals. "We see this as an act of war," the Saudi foreign minister, Adel Jubair, said in an interview on CNN. "Iran cannot lob missiles at Saudi cities and towns and expect us not to take steps." ... The accusations raise the threat of a direct military clash between the two regional heavyweights at a time when they are already fighting proxy wars in Yemen and Syria, as well as battles for political power in Iraq and Lebanon. By the end of the day Monday, a Saudi minister was accusing Lebanon of declaring war against Saudi Arabia as well."58 Prince Turki al-Faisal said in 2016 that Saudi Arabia has "no illusions" about its limited nuclear security capabilities. "We know we have few capabilities in terms of human resources, so that's why we began a very extensive training and skills acquisition program," he said.15 A number of Middle Eastern countries (and the US) have developed their own response to the limitations of the IAEA safeguards system: bombing nuclear facilities suspected of being involved in covert weapons programs. Examples include the destruction of research reactors in Iraq by Israel and the US; Iran's attempts to strike nuclear facilities in Iraq during the 1980−88 war (and vice versa); Iraq's attempted strikes on Israel's nuclear facilities; and Israel's bombing of a suspected nuclear reactor site in Syria in 2007. Most of the above-mentioned attacks were directed at research reactors capable of producing plutonium for weapons, while Iraq attacked the partially-built Bushehr nuclear power plant in Iran in 1987. Israel has threatened to strike nuclear facilities in Iran in recent years. According to a cable released by Wikileaks, King Abdullah urged the US in 2008 to launch military strikes on Iran's nuclear program to "cut off the head of the snake".59 In time, nuclear power plants in Saudi Arabia might be the targets of military strikes, either to prevent their use in a weapons program or simply as an act of war or terrorism. Bennett Ramberg, a policy analyst in the US State Department’s Bureau of Politico-Military Affairs under President George H.W. Bush, wrote in 2014:60 "[W]arfare is rife with accidents and human error, and such an event involving a nuclear plant could cause a meltdown. A loss of off-site power, for example, could be an issue of serious concern. Although nuclear plants are copious producers of electricity, they also require electrical power from other sources to operate. Without incoming energy, cooling pumps will cease functioning and the flow of water that carries heat away from the reactor core ‒ required even when the reactor is in shutdown mode ‒ will stop. "To meet that risk, nuclear plants maintain large emergency diesel generators, which can operate for days ‒ until their fuel runs out. The reactor meltdowns at Japan’s Fukushima Daiichi power station in 2011 demonstrated what happens when primary and emergency operating power are cut. "Such vulnerabilities raise troubling questions in the event of a war. Fighting could disrupt off-site power plants or transmission lines servicing the reactor, and could also prevent diesel fuel from reaching the plant to replenish standby generators. Operators could abandon their posts should violence encroach.

#### Causes prolif – even if not, causes enrichment and reprocessing tech

Green 17 [Dr Jim Green is the national nuclear campaigner with Friends of the Earth, Australia and editor of the Nuclear Monitor newsletter, published by the World Information Service on Energy. Is Saudi Arabia going nuclear? April 12, 2017. https://www.wiseinternational.org/nuclear-monitor/854/saudi-arabia-going-nuclear]

Regardless of intent, a nuclear power program would bring Saudi Arabia far closer to a weapons capability. The reactor-grade plutonium produced in the normal course of operation of a reactor can be used in weapons, or reactors can be operated on a short irradiation cycle to produce weapon-grade plutonium. In addition, a nuclear power program would necessarily entail the development of significant nuclear science and engineering expertise which could be redeployed to a weapons program. A nuclear power program could justify the acquisition of other technologies − such as enrichment and reprocessing technology, and research reactors − which might be put to use in a weapons program. (Argentina's INVAP is building a very low power research reactor in Saudi Arabia37 and an October 2017 agreement between KACARE and Russia's Rosatom envisages construction of another research reactor in the Kingdom.

#### Prolif will be rapid and escalate – kills stability – multiple reasons

Horowitz 09[April, Michael, Department of Political Science, University of Pennsylvania, Philadelphia, “The Spread of Nuclear Weapons,” journal of conflict resolution, vol 53, no 2]

Learning as states gain experience with nuclear weapons is complicated. While to some extent, nuclear acquisition might provide information about resolve or capabil-  ities, it also generates uncertainty about the way an actual conflict would go—given  the new risk of nuclear escalation—and uncertainty about relative capabilities. Rapid proliferation may especially heighten uncertainty given the potential for reasonable  states to disagree at times about the quality of the capabilities each possesses.2 What  follows is an attempt to describe the implications of inexperience and incomplete  information on the behavior of nuclear states and their potential opponents over time.  Since it is impossible to detail all possible lines of argumentation and possible  responses, the following discussion is necessarily incomplete. This is a first step.  The acquisition of nuclear weapons increases the confidence of adopters in their  ability to impose costs in the case of a conflict and the expectations of likely costs if  war occurs by potential opponents. The key questions are whether nuclear states  learn over time about how to leverage nuclear weapons and the implications of that  learning, along with whether actions by nuclear states, over time, convey information  that leads to changes in the expectations of their behavior—shifts in uncertainty—  on the part of potential adversaries.  Learning to Leverage?  When a new state acquires nuclear weapons, how does it influence the way the  state behaves and how might that change over time? Although nuclear acquisition  might be orthogonal to a particular dispute, it might be related to a particular secu-  rity challenge, might signal revisionist aims with regard to an enduring dispute, or  might signal the desire to reinforce the status quo.  This section focuses on how acquiring nuclear weapons influences both the new  nuclear state and potential adversaries. In theory, system wide perceptions of nuclear  danger could allow new nuclear states to partially skip the early Cold War learning  process concerning the risks of nuclear war and enter a proliferated world more cog-  nizant of nuclear brinksmanship and bargaining than their predecessors. However,  each new nuclear state has to resolve its own particular civil–military issues surrounding operational control and plan its national strategy in light of its new capa-  bilities. Empirical research by Sagan (1993), Feaver (1992), and Blair (1993)  suggests that viewing the behavior of other states does not create the necessary tacit  knowledge; there is no substitute for experience when it comes to handling a nuclear  arsenal, even if experience itself cannot totally prevent accidents. Sagan contends  that civil–military instability in many likely new proliferators and pressures generated by the requirements to handle the responsibility of dealing with nuclear weapons  will skew decision making toward more offensive strategies (Sagan 1995). The ques-  tions surrounding Pakistan’s nuclear command and control suggest there is no magic  bullet when it comes to new nuclear powers’ making control and delegation decisions (Bowen and Wolvén 1999).  Sagan and others focus on inexperience on the part of new nuclear states as a key  behavioral driver. Inexperienced operators and the bureaucratic desire to “justify”  the costs spent developing nuclear weapons, combined with organizational biases  that may favor escalation to avoid decapitation—the “use it or lose it” mind-set—  may cause new nuclear states to adopt riskier launch postures, such as launch on  warning, or at least be perceived that way by other states (Blair 1993; Feaver 1992;  Sagan 1995).3  Acquiring nuclear weapons could alter state preferences and make states more  likely to escalate disputes once they start, given their new capabilities.4 But their  general lack of experience at leveraging their nuclear arsenal and effectively communicating nuclear threats could mean new nuclear states will be more likely to  select adversaries poorly and to find themselves in disputes with resolved adver-  saries that will reciprocate militarized challenges. The “nuclear experience” logic also suggests that more experienced nuclear states  should gain knowledge over time from nuclearized interactions that helps leaders  effectively identify the situations in which their nuclear arsenals are likely to make  a difference. Experienced nuclear states learn to select into cases in which their com-  parative advantage, nuclear weapons, is more likely to be effective, increasing the  probability that an adversary will not reciprocate.  Coming from a slightly different perspective, uncertainty about the consequences  of proliferation on the balance of power and the behavior of new nuclear states on  the part of their potential adversaries could also shape behavior in similar ways (Schelling 1966; Blainey 1988). While a stable and credible nuclear arsenal communicates clear information about the likely costs of conflict, in the short term,  nuclear proliferation is likely to increase uncertainty about the trajectory of a war,  the balance of power, and the preferences of the adopter.

#### Nuclear war

Gerzhoy and Miller 16 [Gene Gerzhoy is a congressional fellow with the American Political Science Association. Nick Miller is an assistant professor of political science and international and public affairs at Brown University. Donald Trump thinks more countries should have nuclear weapons. Here’s what the research says. April 6, 2016. https://www.washingtonpost.com/news/monkey-cage/wp/2016/04/06/should-more-countries-have-nuclear-weapons-donald-trump-thinks-so/?noredirect=on&utm\_term=.1c54134ffee8]

Since the dawn of the nuclear age, the United States has pursued nonproliferation as a top policy priority. That includes sponsoring and enforcing the Nonproliferation Treaty (NPT). Research suggests the NPT has been instrumental in limiting the spread of nuclear weapons, in part by coordinating states’ beliefs about one another’s nonproliferation commitments. To develop nuclear weapons, Japan and South Korea would need to violate or withdraw from the NPT. That could prompt U.S. allies and adversaries in other regions — including Saudi Arabia, Germany and Iran — to question the treaty’s viability and consider seeking their own nuclear arsenals. Would this be so bad? After all, no two nuclear armed states have fought a major war with each other, and nuclear weapons have not been used in conflict since the United States bombed Hiroshima and Nagasaki in 1945. But the conclusion that nuclear weapons produce peace is subject to debate. It’s true that there has been no war between major powers since 1945. But that may be due to other factors. The quantitative evidence linking nuclear weapons to a reduced risk of conflict is limited at best. Further, theoretical and historical evidence suggests that nuclear accidents and miscalculations are likely. More countries with nuclear weapons would mean more opportunities for catastrophic nuclear mistakes. So what’s the takeaway? A look at history shows us that nuclear proliferation is anything but inevitable. U.S. nonproliferation efforts have been surprisingly successful, even when the United States was weaker than it is today. Without firm U.S. opposition to the spread of nuclear weapons — a policy implemented through “carrots” like alliances and “sticks” like sanctions — the world would probably have far more than nine countries with nuclear weapons. What’s more, research suggests that nuclear proliferation would reduce U.S. world influence, undermine global stability and increase the risk of nuclear war.

#### Prolif causes nuclear war and terrorism – accidents, brinksmanship, adventurism, and preemptive strikes – all of that makes Middle East war more escalatory

Kroenig 15 [Matthew, Associate Professor and International Relations Field Chair in the Department of Government and School of Foreign Service at Georgetown University, 2015. “The History of Proliferation Optimism: Does It Have a Future?” Journal of Strategic Studies, Volume 38, Issue 1-2, 2015]

The spread of nuclear weapons poses at least six severe threats to international peace and security including: nuclear war, nuclear terrorism, global and regional instability, constrained US freedom of action, weakened alliances, and further nuclear proliferation. Each of these threats has received extensive treatment elsewhere and this review is not intended to replicate or even necessarily to improve upon these previous efforts. Rather the goals of this section are more modest: to usefully bring together and recap the many reasons why we should be pessimistic about the likely consequences of nuclear proliferation. Many of these threats will be illuminated with a discussion of a case of much contemporary concern: Iran’s advanced nuclear program. Nuclear War The greatest threat posed by the spread of nuclear weapons is nuclear war. The more states in possession of nuclear weapons, the greater the probability that somewhere, someday, there will be a catastrophic nuclear war. To date, nuclear weapons have only been used in warfare once. In 1945, the United States used nuclear weapons on Hiroshima and Nagasaki, bringing World War II to a close. Many analysts point to the 65-plus-year tradition of nuclear non-use as evidence that nuclear weapons are unusable, but it would be naïve to think that nuclear weapons will never be used again simply because they have not been used for some time. After all, analysts in the 1990s argued that worldwide economic downturns like the Great Depression were a thing of the past, only to be surprised by the dot-com bubble bursting later in the decade and the Great Recession of the late 2000s.48 This author, for one, would be surprised if nuclear weapons are not used again sometime in his lifetime. Before reaching a state of MAD, new nuclear states go through a transition period in which they lack a secure-second strike capability. In this context, one or both states might believe that it has an incentive to use nuclear weapons first. For example, if Iran acquires nuclear weapons, neither Iran, nor its nuclear-armed rival, Israel, will have a secure, second-strike capability. Even though it is believed to have a large arsenal, given its small size and lack of strategic depth, Israel might not be confident that it could absorb a nuclear strike and respond with a devastating counterstrike. Similarly, Iran might eventually be able to build a large and survivable nuclear arsenal, but, when it first crosses the nuclear threshold, Tehran will have a small and vulnerable nuclear force. In these pre-MAD situations, there are at least three ways that nuclear war could occur. First, the state with the nuclear advantage might believe it has a splendid first strike capability. In a crisis, Israel might, therefore, decide to launch a preventive nuclear strike to disarm Iran’s nuclear capabilities. Indeed, this incentive might be further increased by Israel’s aggressive strategic culture that emphasizes preemptive action. Second, the state with a small and vulnerable nuclear arsenal, in this case Iran, might feel use them or lose them pressures. That is, in a crisis, Iran might decide to strike first rather than risk having its entire nuclear arsenal destroyed. Third, as Thomas Schelling has argued, nuclear war could result due to the reciprocal fear of surprise attack.49 If there are advantages to striking first, one state might start a nuclear war in the belief that war is inevitable and that it would be better to go first than to go second. Fortunately, there is no historic evidence of this dynamic occurring in a nuclear context, but it is still possible. In an Israeli–Iranian crisis, for example, Israel and Iran might both prefer to avoid a nuclear war, but decide to strike first rather than suffer a devastating first attack from an opponent. Even in a world of MAD, however, when both sides have secure, second-strike capabilities, there is still a risk of nuclear war. Rational deterrence theory assumes nuclear-armed states are governed by rational leaders who would not intentionally launch a suicidal nuclear war. This assumption appears to have applied to past and current nuclear powers, but there is no guarantee that it will continue to hold in the future. Iran’s theocratic government, despite its inflammatory rhetoric, has followed a fairly pragmatic foreign policy since 1979, but it contains leaders who hold millenarian religious worldviews and could one day ascend to power. We cannot rule out the possibility that, as nuclear weapons continue to spread, some leader somewhere will choose to launch a nuclear war, knowing full well that it could result in self-destruction. One does not need to resort to irrationality, however, to imagine nuclear war under MAD. Nuclear weapons may deter leaders from intentionally launching full-scale wars, but they do not mean the end of international politics. As was discussed above, nuclear-armed states still have conflicts of interest and leaders still seek to coerce nuclear-armed adversaries. Leaders might, therefore, choose to launch a limited nuclear war.50 This strategy might be especially attractive to states in a position of conventional inferiority that might have an incentive to escalate a crisis quickly to the nuclear level. During the Cold War, the United States planned to use nuclear weapons first to stop a Soviet invasion of Western Europe given NATO’s conventional inferiority.51 As Russia’s conventional power has deteriorated since the end of the Cold War, Moscow has come to rely more heavily on nuclear weapons in its military doctrine. Indeed, Russian strategy calls for the use of nuclear weapons early in a conflict (something that most Western strategists would consider to be escalatory) as a way to de-escalate a crisis. Similarly, Pakistan’s military plans for nuclear use in the event of an invasion from conventionally stronger India. And finally, Chinese generals openly talk about the possibility of nuclear use against a US superpower in a possible East Asia contingency. Second, as was also discussed above, leaders can make a ‘threat that leaves something to chance’.52 They can initiate a nuclear crisis. By playing these risky games of nuclear brinkmanship, states can increase the risk of nuclear war in an attempt to force a less resolved adversary to back down. Historical crises have not resulted in nuclear war, but many of them, including the 1962 Cuban Missile Crisis, have come close. And scholars have documented historical incidents when accidents nearly led to war.53 When we think about future nuclear crisis dyads, such as Iran and Israel, with fewer sources of stability than existed during the Cold War, we can see that there is a real risk that a future crisis could result in a devastating nuclear exchange. Nuclear Terrorism The spread of nuclear weapons also increases the risk of nuclear terrorism.54 While September 11th was one of the greatest tragedies in American history, it would have been much worse had Osama Bin Laden possessed nuclear weapons. Bin Laden declared it a ‘religious duty’ for Al- Qa’eda to acquire nuclear weapons and radical clerics have issued fatwas declaring it permissible to use nuclear weapons in Jihad against the West.55 Unlike states, which can be more easily deterred, there is little doubt that if terrorists acquired nuclear weapons, they would use them.56 Indeed, in recent years, many US politicians and security analysts have argued that nuclear terrorism poses the greatest threat to US national security.57 Analysts have pointed out the tremendous hurdles that terrorists would have to overcome in order to acquire nuclear weapons.58 Nevertheless, as nuclear weapons spread, the possibility that they will eventually fall into terrorist hands increases. States could intentionally transfer nuclear weapons, or the fissile material required to build them, to terrorist groups. There are good reasons why a state might be reluctant to transfer nuclear weapons to terrorists, but, as nuclear weapons spread, the probability that a leader might someday purposely arm a terrorist group increases. Some fear, for example, that Iran, with its close ties to Hamas and Hizballah, might be at a heightened risk of transferring nuclear weapons to terrorists. Moreover, even if no state would ever intentionally transfer nuclear capabilities to terrorists, a new nuclear state, with underdeveloped security procedures, might be vulnerable to theft, allowing terrorist groups or corrupt or ideologically-motivated insiders to transfer dangerous material to terrorists. There is evidence, for example, that representatives from Pakistan’s atomic energy establishment met with Al-Qa’eda members to discuss a possible nuclear deal.59 Finally, a nuclear-armed state could collapse, resulting in a breakdown of law and order and a loose nukes problem. US officials are currently very concerned about what would happen to Pakistan’s nuclear weapons if the government were to fall. As nuclear weapons spread, this problem is only further amplified. Iran is a country with a history of revolutions and a government with a tenuous hold on power. The regime change that Washington has long dreamed about in Tehran could actually become a nightmare if a nuclear-armed Iran suffered a breakdown in authority, forcing us to worry about the fate of Iran’s nuclear arsenal. Regional Instability The spread of nuclear weapons also emboldens nuclear powers, contributing to regional instability. States that lack nuclear weapons need to fear direct military attack from other states, but states with nuclear weapons c

an be confident that they can deter an intentional military attack, giving them an incentive to be more aggressive in the conduct of their foreign policy. In this way, nuclear weapons provide a shield under which states can feel free to engage in lower-level aggression. Indeed, international relations theories about the ‘stability-instability paradox’ maintain that stability at the nuclear level contributes to conventional instability.60 Historically, we have seen that the spread of nuclear weapons has emboldened their possessors and contributed to regional instability. Recent scholarly analyses have demonstrated that, after controlling for other relevant factors, nuclear-weapon states are more likely to engage in conflict than nonnuclear-weapon states and that this aggressiveness is more pronounced in new nuclear states that have less experience with nuclear diplomacy.61 Similarly, research on internal decision-making in Pakistan reveals that Pakistani foreign policymakers may have been emboldened by the acquisition of nuclear weapons, which encouraged them to initiate militarized disputes against India.62 Currently, Iran restrains its foreign policy because it fears major military retaliation from the United States or Israel, but with nuclear weapons it could feel free to push harder. A nuclear-armed Iran would likely step up support to terrorist and proxy groups and engage in more aggressive coercive diplomacy. With a nuclear-armed Iran increasingly throwing its weight around in the region, we could witness an even more crisis prone Middle East. And in a poly-nuclear Middle East with Israel, Iran, and, in the future, possibly other states, armed with nuclear weapons, any one of those crises could result in a catastrophic nuclear exchange.

#### Middle East war won’t go nuclear – balanced alliances, Chinese non-intervention, and cooperation prevent great power draw-in

Mead 14 – Walter Russell Mead, James Clarke Chace Professor of Foreign Affairs and Humanities at Bard College and Professor of American foreign policy at Yale University, Editor-at-Large of The American Interest magazine and a non-resident Scholar at the Hudson Institute, 2014 (“Have We Gone From a Post-War to a Pre-War World?” *Huffington Post*, July 7th, <http://www.huffingtonpost.com/walter-russell-mead/new-global-war_b_5562664.html>)

The Middle East today bears an ominous resemblance to the Balkans of that period. The contemporary Middle East has an unstable blend of ethnicities and religions uneasily coexisting within boundaries arbitrarily marked off by external empires. Ninety-five years after the French and the British first parceled out the lands of the fallen Ottoman caliphate, that arrangement is now coming to an end. Events in Iraq and Syria suggest that the Middle East could be in for carnage and upheaval as great as anything the Balkans saw. The great powers are losing the ability to hold their clients in check; the Middle East today is at least as explosive as the Balkan region was a century ago.

GERMANS THEN, CHINESE NOW

What blew the Archduke's murder up into a catastrophic world war, though, was not the tribal struggle in southeastern Europe. It took the hegemonic ambitions of the German Empire to turn a local conflict into a universal conflagration. Having eclipsed France as the dominant military power in Europe, Germany aimed to surpass Britain on the seas and to recast the emerging world order along lines that better suited it. Yet the rising power was also insecure, fearing that worried neighbors would gang up against it. In the crisis in the Balkans, Germany both felt a need to back its weak ally Austria and saw a chance to deal with its opponents on favorable terms.

Could something like that happen again? China today is both rising and turning to the sea in ways that Kaiser Wilhelm would understand. Like Germany in 1914, China has emerged in the last 30 years as a major economic power, and it has chosen to invest a growing share of its growing wealth in military spending.

But here the analogy begins to get complicated and even breaks down a bit. Neither China nor any Chinese ally is competing directly with the United States and its allies in the Middle East. China isn't (yet) taking a side in the Sunni-Shia dispute, and all it really wants in the Middle East is quiet; China wants that oil to flow as peacefully and cheaply as possible.

AMERICA HAS ALL THE ALLIES

And there's another difference: alliance systems. The Great Powers of 1914 were divided into two roughly equal military blocs: Austria, Germany, Italy and potentially the Ottoman Empire confronted Russia, France and potentially Britain.

Today the global U.S. alliance system has no rival or peer; while China, Russia and a handful of lesser powers are disengaged from, and in some cases even hostile to, the U.S. system, the military balance isn't even close.

While crises between China and U.S. allies on its periphery like the Philippines could escalate into US-China crises, we don't have anything comparable to the complex and finely balanced international system at the time of World War I. Austria-Hungary attacked Serbia and as a direct result of that Germany attacked Belgium. It's hard to see how, for example, a Turkish attack on Syria could cause China to attack Vietnam. Today's crises are simpler, more direct and more easily controlled by the top powers.

**1NC – Water Wars**

#### Scarcity key to Chinese clean tech—spurs government investment, displaces coal

Schneider and Smith 11 Update: August 15, 2011 Keith Schneider, who has reported on energy, water, and climate change from four continents, is a Traverse City-based senior editor for Circle of Blue. Toby Smith is a British photojournalist represented by Reportage by Getty Images who specializes in global energy and environment matters. “New Wind and Solar Sectors Won’t Solve China’s Water Scarcity” Original article, Tuesday, 22 February 2011 06:00 http://www.circleofblue.org/waternews/2011/world/new-wind-and-solar-sectors-wont-solve-chinas-water-scarcity/

Northern Gansu is doing that and considerably more. This region of dust and industrial innovation—about as far west from Beijing as Montana is from New York—has very quickly become a booster stage for China’s rocket ride to the top of the global water-sipping clean energy heap. Prompted by a national decision in 2005 to diversify the nation’s energy production portfolio, and to do so with the goal of reducing water consumption and climate-changing carbon emissions, Gansu and its desert neighbors are pursuing clean energy development with a ferocity unrivaled now in the world. Along with northern Gansu, there are six other wind energy bases and eight other solar power bases being built in China—most of them in the desert regions of northern and western China. China also has a burst of seawater-cooled nuclear power plants under construction along its eastern coast. Coal Is China’s Largest Industrial Water Consumer In 2010, China produced 3.15 billion metric tons of coal, according to government figures, most of it to produce electricity. Of the 960 GW of generating capacity in China, and the 4.19 trillion kilowatt hours of electricity that were produced last year, 80 percent was powered by coal. China’s coal mining, processing, and electrical generating industries consumed over 120 billion cubic meters (32 trillion gallons) of water annually, which is about 20 percent of all national water consumption, according to the China Ministry of Water Resources. Total electrical generating capacity is expected to double in China by the end of the decade, reaching 1,900 GW. The magnitude of the increase is astonishing. In 2020, nine years from now, government officials and energy industry executives project adding as much electrical generating capacity as exists today in the United States. More than half of this increase, 500 GW, according to various government and academic projections, will come from coal. Coal production and use could grow to over 4 billion metric tons per year by 2020, which is about 30 percent more than last year, according to analysts at Tsinghua University in Beijing. That means even more water will be consumed. The China Ministry of Water Resources estimates that annual water use will increase from 599 billion cubic meters in 2010 to as much as 670 billion cubic meters in 2020. The largest share of that increase—15 billion cubic meters (4 trillion gallons) a year—is due to the increase in coal mining and processing, along with cooling coal-fired power plants. Meanwhile, China is slowly getting drier. The overall supply of water available in China’s rivers, lakes, and aquifers has fallen 13 percent since 2000, according to the National Bureau of Statistics. Chinese climate scientists and hydrologists say this trend—which has reduced the nation’s total water supply by 350 billion cubic meters (93 trillion gallons) a year—will continue as a result of climate change, which is disrupting patterns of snowfall and rain. The searing conditions, coupled with China’s insistence on developing at a scale and speed never seen previously, are yielding a decisive environmental and economic choke point with global implications. The driest northern and western regions—Inner Mongolia, Shanxi, Xinjiang—are precisely where the vast new reserves of coal that China says it needs for modernization are located. For the time being, most of those new reserves can’t be tapped because there is not enough water. Northern China’s rainless weather, moreover, appears to be getting worse. Beijing and other northern and western cities are currently enduring the driest winter in 60 years. China’s National Energy Administration projects that, over the next decade, generating capacity from wind, solar, and nuclear power will more than quadruple, from 53 gigawatts in 2010 to 230 gigawatts in 2020. The other big non-carbon electrical producer is hydropower, which is expected by the government to grow to 400 GW of capacity by 2020, up from 213.4 GW last year. (For reference, one gigawatt, or GW, is equal to 1,000 megawatts, or the generating capacity of a big nuclear- or coal-fired power plant.) Wind energy now accounts for 42GW, or 16 percent of the nation’s non-carbon electrical generating capacity. China’s energy officials projected last year that wind energy generating capacity will rise to 150 GW by 2020, though many wind industry executives predict the number will reach more than 200 GW. Solar generating capacity is expected to jump from less than one GW in 2010 to 20 GW by 2020. Nuclear power is projected to increase from 11 GW to 60 GW in the next decade. Yet China’s demand for electricity is rising so quickly that the massive investment in new generating technologies will not make nearly as large of a dent in production—or in freshwater conservation—as many people might expect. Simply put: wind, solar, and nuclear power will climb to around 13 percent of the 1,900 GW of generating capacity expected by 2020, according to government data. That’s up from the nearly six percent of the 960 GW of generating capacity today. The new wind, solar, and seawater-cooled nuclear plants will replace roughly 100 big coal-fired generating stations, which equates to a savings of 3.5 billion cubic meters (nearly one trillion gallons) of water annually, according to academic and government estimates. The clean energy stations also will eliminate around 750 million metric tons of climate-changing emissions annually. But China’s national water use—599 billion cubic meters in 2010—is anticipated to grow by 71 billion cubic meters by the end of the decade. And the increase in water consumption, a good portion of which is spurred by new coal production, is occurring in a nation that is steadily getting drier. (See sidebar) Put another way, the $US 738 billion that government authorities promised last year to spend on non-fossil fuel power generation over the next decade will jump start China’s clean energy economic transition. The enormous solar and wind-related manufacturing plants across China already employ tens of thousands of people. They are irrefutable evidence of the capacity of clean energy to spur job growth. They also are a signal to the United States and other nations that China is prepared to dominate wind, solar, nuclear, and other cleaner sources of power that global energy economists predict will eventually generate trillions of dollars in revenue each year. But clean energy development will not solve the commanding threat to China’s modernization – the confrontation between rising energy demand and declining reserves of fresh water. Over the next decade, and likely well beyond that, the water savings from solar, wind, and seawater-cooled nuclear power will not be nearly enough to loosen the noose that water scarcity is steadily tightening around China’s coal production and combustion sector, and its national economy. (See sidebar) “There may be an ultimate day of reckoning approaching,” said Nicholas Lardy, a senior fellow and China specialist at the Peterson Institute in Washington D.C. “But there are a lot of intermediate steps China is prepared to take and already is taking to hold it off as long as possible.” No Turning Back Chinese development officials insist they have no intention of backing away from the country’s rapid modernization or from using every available energy-producing option to fuel that growth. A powerful transition is occurring in China, much of it focused on attracting new pioneers to the dry northern and western provinces. The strategy appears to be working. China Water Energy Wind Power Industry Manufacturing Photo © Toby Smith/Reportage by Getty Images for Circle of Blue The New Energy Equipment Manufacturing Industry base, a collection of state-of-the-art manufacturing plants, is the largest non-carbon energy manufacturing center in the world, say Chinese energy officials. Click image to enlarge. The modern cities under construction in Gansu Province, Inner Mongolia, Xinjiang, Ningxia, and Jilin are supported by new factories turning out steel, aluminum, vehicles, appliances, wind turbines, mining equipment, and hundreds of other products intended to supply China’s rapidly expanding domestic markets. High-rise apartments are under construction in clumps of 30-story concrete towers in every major city. Streets and highways are jammed with late-model and expensive cars. Restaurants are full day and night. Long lines form at checkout counters in Western-style grocery superstores. The provincial economies of northern and western China are growing at a faster rate than the national gross domestic product, which reached 10.3 percent in 2010, according to the latest government figures. The new regional growth has been spurred, in part, by clean energy production and manufacturing, which China recognized was a good fit for the windy, sunny, and dry geography. A province with 25 million residents and about the same geographical size as Sweden, Gansu has managed energy production and water scarcity for decades. Oil was discovered around Yumen in the 1930s, and a sizable production and refining industry thrived for over half a century. One of the historical highlights of Gansu’s energy industry is that Chinese Premier Wen Jiabao, a trained geologist and China’s second most powerful political figure, spent the early part of his technical and government career from 1968 to 1982 managing Gansu’s mineral and water resources. China Water Energy Wind Power Industry Manufacturing Photo © Toby Smith/Reportage by Getty Images for Circle of Blue China is developing massive solar resources in the Gobi Desert of northern Gansu Province. 20 MW is already online. Generating capacity is expected to grow to 12,000 MW by 2025. Click image to enlarge. In 1996, provincial officials began to experiment with replacing northern Gansu’s oil sector with wind. They installed four 300-kilowatt wind turbines at the Yumen Jieyuan Wind Power Plant. Cities in Xinjiang, to the west of Gansu, and the Inner Mongolia Autonomous Region, east of Gansu, also joined Gansu as the first provinces to experiment with utility-scale clean energy generation. The sector grew steadily—albeit slowly—for nearly a decade, said executives here in Jiuquan. But, in the earliest years of the new century, wind power began to spin with economic authority.

#### Can’t solve warming without China

Chen et al 10Chen, Qian, Peridas, Qiu, Ho: Natural Resources Defense Council, Friedmann: Lawrence Livermore National Laboratory, Li, Wei: Institute of Rock and Soil Mechanics, Chinese Academy of Sciences, Sung, Fowler: Clean Air Task Force, Seligsohn, Liu, Forbes: World Resources Institute, Zhang: China Tsinghua University, Zhao: Institute of Engineering Thermophysics, Chinese Academy of Sciences (Jason Chen, Jingjing Qian, George Peridas, Yueming Qiu, Bruce Ho, Julio Friedmann, Xiaochun Li, Ning Wei, S. Ming Sung, Mike Fowler, Deborah Seligsohn, Yue Liu, Sarah Forbes, Dongjie Zhang, Lifeng Zhao, December 2010, “Identifying Near-Term Opportunities For Carbon Capture and Sequestration (CCS) in China,” <http://docs.nrdc.org/international/files/int_10121001a.pdf)//DR>. H

As discussed at the beginning of this report, if China and the world are to avoid the worst consequences of climate change, then China’s rapid growth in total carbon dioxide emissions— though approaching only the world’s average level on a per capita basis—must be curtailed and begin to decrease within the next two decades. This process must happen in parallel with deep emissions reductions by industrialized countries, starting now, in order to save the world from dangerous climate change. Based on what the world currently knows and is capable of achieving, CCS will likely be a necessary strategy, in concert with other measures, to realize critically needed emissions abatement in China and other large fossil fuel consuming countries. Because CCS involves largescale systems engineering and geologic expertise, international collaboration will be indispensable for accelerating CCS development and deployment in the countries that need the technology. For China, which still faces daunting development needs and has relatively limited technological, financial and regulatory capacities in some areas, international collaboration and assistance are all the more critical.

#### Chinese renewable investment down now

Standaert 19 Michael Standaert is a freelance journalist based out of South China, primarily covering environment, energy and climate change policy for Bloomberg Environment, and contributing to other publications, most recently including The Guardian, Al Jazeera, and MIT Technology Review. He has resided in China since 2007. More about Michael Standaert → "Why China’s Renewable Energy Transition Is Losing Momentum." Yale E360, September 26, 2019, e360.yale.edu/features/why-chinas-renewable-energy-transition-is-losing-momentum.

In addition, as renewable energy prices have fallen and the central government has grown increasingly concerned about the impact of the U.S.-China trade war on China’s economy, renewable subsidies are being phased out. Wind and solar facilities must now compete directly at auction with other forms of power generation. China’s green energy sector seems increasingly capable of winning that competition, but solar energy installations are nevertheless expected to drop by about half this year, from a peak of 53 gigawatts in 2017. And while curtailing subsidies for wind and solar power, the central government has sharply increased financial support for what it calls “new energy” extraction, which includes fracking of shale gas and separating methane from coal. Those subsidies are an important reason behind China’s rising CO2 emissions. Hundreds of wind turbines in China's northwestern Xinjiang Province in July 2016. Hundreds of wind turbines in China's northwestern Xinjiang Province in July 2016. PATRICK BAZ/AFP/Getty Images What happens with China’s green energy transition has broader significance in the global climate fight, given that the country is the world’s largest emitter of greenhouse gases. With its renewable energy growth slowing and its fossil fuel use rising, analysts fear that China’s emissions may not level off by 2030, the target set in the Paris Climate Agreement, which would be a significant setback for efforts to slow global warming. Renewable energy proponents are now seeking to avert a continued slowdown in China’s alternative energy sector and spark new green energy growth. “Though China is the largest clean energy market in the world, wind and solar only accounted for 5.2 percent and 2.5 percent of China’s national power generation in 2018,” says Kevin Tu, former China program manager at the International Energy Agency and now a fellow with the Center on Global Energy Policy at Columbia University. “Against the backdrop of an ongoing U.S.-China trade war and a slowing Chinese economy, political priority of climate change in China is unlikely to become very high in the near future, indicating great difficulties for Beijing to further upgrade its climate ambitions.” A major issue, according to Tu and other experts, is the level of “curtailment,” or energy that is generated but not purchased because it cannot be absorbed by the electricity grid. The degree of curtailment has been falling — from 17 percent in 2016 to 7 percent last year — but Tu says that is still too high. Elevated solar curtailment rates in the provinces of Gansu and Xinjiang, as well as in Tibet, led China’s National Energy Agency to halt approvals for new solar projects in those regions for 2019. “Wind and solar curtailments have been a chronic policy challenge in China in recent years, indicating an urgent need for additional power sector reform,” says Tu. By the end of 2018, the province of Qinghai was generating more than three-quarters of its electricity from renewable energy. By the end of 2018, the province of Qinghai was generating more than three-quarters of its electricity from renewable energy. Yale Environment 360 People in Golmud, population 200,000, take great pride in the Frontunner solar power installation. Golmud’s workers have a history of building grand projects, including the Qinghai-Tibet highway, which was constructed in the 1950s and is memorialized at a park in Golmud. More recently, workers in Golmud took part in the construction of the world’s highest railway, a 710-mile section running south from the city to Lhasa, Tibet. The line, which crosses Tangula Pass at 16,640 feet, was inaugurated in 2006. Just like their brethren who built these earlier projects, workers at the Frontunner project had to deal with frequent dust storms, altitude sickness, and weather shifts from extreme cold to blazing sun. “I’m very excited because we managed to build such a big project out in the desert at an altitude like this,” Xu Rugang, project manager at Sungrow’s engineering department says while gazing out across an expanse of PV panels glinting in the sun. “Just imagine the difficulties our workers had to endure to make this happen.” To reduce the country’s CO2 emissions, experts say it is crucial that power produced in provinces like Qinghai be transmitted seamlessly to the industrial and population centers along China’s coast. Many larger renewable projects are located in remote landlocked provinces like Qinghai, Gansu, and Inner Mongolia. Until more transmission lines are built and government reforms are enacted that better enable power to be transferred to other provinces, far-western “battery provinces” like Qinghai will mainly end up generating power for themselves. After plateauing from 2014 to 2016, China’s CO2 emissions have risen in the last several years. What’s needed, Tu says, is for the central government to eliminate barriers of inter-provincial power trading and to simultaneously give renewables priority in the transfer and dispatching of electricity. Alvin Lin, an energy and climate expert with the Natural Resources Defense Council who has worked in China for more than a decade, says that an important near-term element in the climate battle is to sustain the momentum of China’s renewable energy drive so that the country’s CO2 emissions peak before 2030. Many experts increasingly argue that the 2030 target date is insufficient. “We and others would like to push for an earlier carbon peaking around 2025,” Lin says. “China would need to stop building new coal plants now and bring coal power capacity and generation down rapidly.” Should China’s emissions not peak until 2030 or even later, experts say that delay could contribute to global temperature increases that hit 3 or 4 degrees Celsius (5.4 to 7.2 degrees Fahrenheit) — far above the consensus international goal of 1.5 to 2 degrees C. Total CO2 emissions from coal, gas, oil, and concrete production from 2012 to the first half of 2019. Total CO2 emissions from coal, gas, oil, and concrete production from 2012 to the first half of 2019. Courtesy of Carbon Brief After plateauing from 2014 to 2016, China’s carbon dioxide emissions have risen in the last several years, with an estimated 4 percent increase in the first half of 2019. While coal consumption and production peaked in 2013, both have increased again since 2017 and are slowly creeping back to 2013 levels. Reliance on gas from fracking in the Sichuan basin, as well as coal-bed methane extraction and increased imports of natural gas (China is the second-largest natural gas importer in the world), are on the rise. Since China counts unconventional gases like shale gas and coal-bed methane as “new energy,” they are eligible for subsidies from the Ministry of Industry and Information Technology [MIIT]. Roughly $830 million — more than 80 percent of an MIIT new energy fund — went to subsidizing such projects in 2018, according to a recent report by the state-run China Energy News. While continuing to fund unconventional gas, China has now largely stopped providing national-level subsidies to wind and solar projects and is implementing reforms to its feed-in-tariff system, moving to replace it with auctions in which wind and solar power must compete directly with fossil fuels. Some say they think China could install as much as 100 gigawatts of solar power annually, if renewables were given higher priority. This process has started to slow the overall added capacity for wind and solar. While new solar photovoltaic installations hit an all-time high of 53 gigawatts [GW] in 2017, they slipped to around 41 GW last year and current figures put solar installations at slightly more than 11 GW for the first half of 2019. Projections are for about 25 GW of solar power to be installed this year and in succeeding years through 2025, an amount that would not sharply curtail fossil fuel use. Another problem is that renewable energy projects are facing land-use restrictions that protect agricultural, industrial, and urban land in provinces like Guangdong in South China, the country’s economic powerhouse, says Jonathan Luan Dong, a renewables analyst at Bloomberg New Energy Finance. While several non-subsidized renewable energy projects had been scheduled to start in Guangdong in 2019, few actually seem to be moving forward.

#### Warming causes extinction

Melton 19 [Michelle Melton is a 3L at Harvard Law School. Before law school, she was an associate fellow in the Energy and National Security Program at the Center for Strategic and International Studies, where she focused on climate policy. Climate Change and National Security, Part II: How Big a Threat is the Climate? January 7, 2019. https://www.lawfareblog.com/climate-change-and-national-security-part-ii-how-big-threat-climate]

The question for the next 30 years is not “can humanity survive as a species with 1.5°C or 2°C of warming,” but, “how much will the existing disparities between the developed and developing world widen, and how long (and how successfully) can these widening political/economic disparities be sustained?” The urgency of the climate threat in the next few decades will depend, to a large degree, on whether and how much the U.S. government perceives a widening of these global inequities as a threat to U.S. national security.

By contrast, if emissions continue to creep upward (or if they do not decline rapidly), by 2100 climate-related national security threats could be existential. The question for the next hundred years is not, “are disparities politically and economically manageable?” but, “can the global order, premised on the nation-state system, itself based on territorial sovereignty, survive in a world in which substantial swathes of territory are potentially uninhabitable?”

National Security Consequences of Climate Change to 2050

Scientists can predict the consequences of climate change to 2050 with some measure of certainty. (Beyond that date, the pace and magnitude of climate change—and therefore, the national security threat posed by it—depend heavily on the level of emissions in the coming years, as I have explained.) There is relative agreement across modeled climate scenarios that the world will likely warm, on average, at least 1.5°C above pre-industrial levels by about 2050—but perhaps as soon as 2030. This level of warming is likely to occur even if the world succeeds in dramatically reducing greenhouse gas emissions, as even the recent Intergovernmental Panel on Climate Change (IPCC) report implicitly admits. In other words, a certain amount of additional warming—at least 1.5°C, and probably more than that—is presumptively unavoidable.

Looking ahead to 2050, it can be said with relative confidence that the national security consequences of climate change will vary in degree, not in kind, from the national security threats already facing the United States. This is hardly good news. Even small differences in global average temperatures result in significant environmental changes, with attendant social, economic and political consequences. By 2050, climate change will wreak increasing havoc on human and natural systems—predominantly, but not exclusively, in the developing world—with attenuated but profound consequences for national security.

In particular, changes in temperature, the hydrological cycle and the ranges of insects will impact food availability and food access in much of the world, increasing food insecurity. Storms, flooding, changes in ocean pH and other climate-linked changes will damage infrastructure and negatively impact labor productivity and economic growth in much of the world. Vector-borne diseases will also become more prevalent, as climate change will expand the geographic range and intensity of transmission of diseases like malaria, West Nile, Zika and dengue fever, and cholera. Rising public health challenges, economic devastation and food insecurity will translate into an increased demand for humanitarian assistance provided by the military, increased migration—especially from tropical and subtropical regions—and geopolitical conflict.

#### We need to stop consuming water – the alternative is dramatic population overshoot which magnifies every one of their impacts and causes environmental collapse – extinction

Emmott 13 – Professor of Computational Science at Oxford (Stephen, “Humans: the real threat to life on Earth”, 6/19/13, <http://www.theguardian.com/environment/2013/jun/30/stephen-emmott-ten-billion>, RSpec)

Earth is home to millions of species. Just one dominates it. Us. Our cleverness, our inventiveness and our activities have modified almost every part of our planet. In fact, we are having a profound impact on it. Indeed, our cleverness, our inventiveness and our activities are now the drivers of every global problem we face. And every one of these problems is accelerating as we continue to grow towards a global population of 10 billion. In fact, I believe we can rightly call the situation we're in right now an emergency – an unprecedented planetary emergency. We humans emerged as a species about 200,000 years ago. In geological time, that is really incredibly recent. Just 10,000 years ago, there were one million of us. By 1800, just over 200 years ago, there were 1 billion of us. By 1960, 50 years ago, there were 3 billion of us. There are now over 7 billion of us. By 2050, your children, or your children's children, will be living on a planet with at least 9 billion other people. Some time towards the end of this century, there will be at least 10 billion of us. Possibly more. We got to where we are now through a number of civilisation- and society-shaping "events", most notably the agricultural revolution, the scientific revolution, the industrial revolution and – in the West – the public-health revolution. By 1980, there were 4 billion of us on the planet. Just 10 years later, in 1990, there were 5 billion of us. By this point initial signs of the consequences of our growth were starting to show. Not the least of these was on water. Our demand for water – not just the water we drank but the water we needed for food production and to make all the stuff we were consuming – was going through the roof. But something was starting to happen to water. Back in 1984, journalists reported from Ethiopia about a famine of biblical proportions caused by widespread drought. Unusual drought, and unusual flooding, was increasing everywhere: Australia, Asia, the US, Europe. Water, a vital resource we had thought of as abundant, was now suddenly something that had the potential to be scarce. By 2000 there were 6 billion of us. It was becoming clear to the world's scientific community that the accumulation of CO2, methane and other greenhouse gases in the atmosphere – as a result of increasing agriculture, land use and the production, processing and transportation of everything we were consuming – was changing the climate. And that, as a result, we had a serious problem on our hands; 1998 had been the warmest year on record. The 10 warmest years on record have occurred since 1998. We hear the term "climate" every day, so it is worth thinking about what we actually mean by it. Obviously, "climate" is not the same as weather. The climate is one of the Earth's fundamental life support systems, one that determines whether or not we humans are able to live on this planet. It is generated by four components: the atmosphere (the air we breathe); the hydrosphere (the planet's water); the cryosphere (the ice sheets and glaciers); the biosphere (the planet's plants and animals). By now, our activities had started to modify every one of these components. Our emissions of CO2 modify our atmosphere. Our increasing water use had started to modify our hydrosphere. Rising atmospheric and sea-surface temperature had started to modify the cryosphere, most notably in the unexpected shrinking of the Arctic and Greenland ice sheets. Our increasing use of land, for agriculture, cities, roads, mining – as well as all the pollution we were creating – had started to modify our biosphere. Or, to put it another way: we had started to change our climate. There are now more than 7 billion of us on Earth. As our numbers continue to grow, we continue to increase our need for far more water, far more food, far more land, far more transport and far more energy. As a result, we are accelerating the rate at which we're changing our climate. In fact, our activities are not only completely interconnected with but now also interact with, the complex system we live on: Earth. It is important to understand how all this is connected. Let's take one important, yet little known, aspect of increasing water use: "hidden water". Hidden water is water used to produce things we consume but typically do not think of as containing water. Such things include chicken, beef, cotton, cars, chocolate and mobile phones. For example: it takes around 3,000 litres of water to produce a burger. In 2012 around five billion burgers were consumed in the UK alone. That's 15 trillion litres of water – on burgers. Just in the UK. Something like 14 billion burgers were consumed in the United States in 2012. That's around 42 trillion litres of water. To produce burgers in the US. In one year. It takes around 9,000 litres of water to produce a chicken. In the UK alone we consumed around one billion chickens in 2012. It takes around 27,000 litres of water to produce one kilogram of chocolate. That's roughly 2,700 litres of water per bar of chocolate. This should surely be something to think about while you're curled up on the sofa eating it in your pyjamas. But I have bad news about pyjamas. Because I'm afraid your cotton pyjamas take 9,000 litres of water to produce. And it takes 100 litres of water to produce a cup of coffee. And that's before any water has actually been added to your coffee. We probably drank about 20 billion cups of coffee last year in the UK. And – irony of ironies – it takes something like four litres of water to produce a one-litre plastic bottle of water. Last year, in the UK alone, we bought, drank and threw away nine billion plastic water bottles. That is 36 billion litres of water, used completely unnecessarily. Water wasted to produce bottles – for water. And it takes around 72,000 litres of water to produce one of the 'chips' that typically powers your laptop, Sat Nav, phone, iPad and your car. There were over two billion such chips produced in 2012. That is at least 145 trillion litres of water. On semiconductor chips. In short, we're consuming water, like food, at a rate that is completely unsustainable. Demand for land for food is going to double – at least – by 2050, and triple – at least – by the end of this century. This means that pressure to clear many of the world's remaining tropical rainforests for human use is going to intensify every decade, because this is predominantly the only available land that is left for expanding agriculture at scale. Unless Siberia thaws out before we finish deforestation. By 2050, 1bn hectares of land is likely to be cleared to meet rising food demands from a growing population. This is an area greater than the US. And accompanying this will be three gigatons per year extra CO2 emissions.If Siberia does thaw out before we finish our deforestation, it would result in a vast amount of new land being available for agriculture, as well as opening up a very rich source of minerals, metals, oil and gas. In the process this would almost certainly completely change global geopolitics. Siberia thawing would turn Russia into a remarkable economic and political force this century because of its newly uncovered mineral, agricultural and energy resources. It would also inevitably be accompanied by vast stores of methane – currently sealed under the Siberian permafrost tundra – being released, greatly accelerating our climate problem even further. Amazon rainforest cleared for cattle pasture Amazon rainforest smoulders after being cleared for cattle pasture in Brazil. Photograph: Michael Nichols/Getty Images Meanwhile, another 3 billion people are going to need somewhere to live. By 2050, 70% of us are going to be living in cities. This century will see the rapid expansion of cities, as well as the emergence of entirely new cities that do not yet exist. It's worth mentioning that of the 19 Brazilian cities that have doubled in population in the past decade, 10 are in the Amazon. All this is going to use yet more land. We currently have no known means of being able to feed 10 billion of us at our current rate of consumption and with our current agricultural system. Indeed, simply to feed ourselves in the next 40 years, we will need to produce more food than the entire agricultural output of the past 10,000 years combined. Yet food productivity is set to decline, possibly very sharply, over the coming decades due to: climate change; soil degradation and desertification – both of which are increasing rapidly in many parts of the world; and water stress. By the end of this century, large parts of the planet will not have any usable water. At the same time, the global shipping and airline sectors are projected to continue to expand rapidly every year, transporting more of us, and more of the stuff we want to consume, around the planet year on year. That is going to cause enormous problems for us in terms of more CO2 emissions, more black carbon, and more pollution from mining and processing to make all this stuff. But think about this. In transporting us and our stuff all over the planet, we are also creating a highly efficient network for the global spread of potentially catastrophic diseases. There was a global pandemic just 95 years ago – the Spanish flu pandemic, which is now estimated to have killed up to 100 million people. And that's before one of our more questionable innovations – the budget airline – was invented. The combination of millions of people travelling around the world every day, plus millions more people living in extremely close proximity to pigs and poultry – often in the same room, making a new virus jumping the species barrier more likely – means we are increasing, significantly, the probability of a new global pandemic. So no wonder then that epidemiologists increasingly agree that a new global pandemic is now a matter of "when" not "if". We are going to have to triple – at least – energy production by the end of this century to meet expected demand. To meet that demand, we will need to build, roughly speaking, something like: 1,800 of the world's largest dams, or 23,000 nuclear power stations, 14m wind turbines, 36bn solar panels, or just keep going with predominantly oil, coal and gas – and build the 36,000 new power stations that means we will need.Our existing oil, coal and gas reserves alone are worth trillions of dollars. Are governments and the world's major oil, coal and gas companies – some of the most influential corporations on Earth – really going to decide to leave the money in the ground, as demand for energy increases relentlessly? I doubt it. Meanwhile the emerging climate problem is on an entirely different scale. The problem is that we may well be heading towards a number of critical "tipping points" in the global climate system. There is a politically agreed global target – driven by the Intergovernmental Panel on Climate Change (IPCC) – to limit the global average temperature rise to 2C. The rationale for this target is that a rise above 2C carries a significant risk of catastrophic climate change that would almost certainly lead to irreversible planetary "tipping points", caused by events such as the melting of the Greenland ice shelf, the release of frozen methane deposits from Arctic tundra, or dieback of the Amazon. In fact, the first two are happening now – at below the 2C threshold. As for the third, we're not waiting for climate change to do this: we're doing it right now through deforestation. And recent research shows that we look certain to be heading for a larger rise in global average temperatures than 2C – a far larger rise. It is now very likely that we are looking at a future global average rise of 4C – and we can't rule out a rise of 6C. This will be absolutely catastrophic. It will lead to runaway climate change, capable of tipping the planet into an entirely different state, rapidly. Earth will become a hellhole. In the decades along the way, we will witness unprecedented extremes in weather, fires, floods, heatwaves, loss of crops and forests, water stress and catastrophic sea-level rises. Large parts of Africa will become permanent disaster areas. The Amazon could be turned into savannah or even desert. And the entire agricultural system will be faced with an unprecedented threat. More "fortunate" countries, such as the UK, the US and most of Europe, may well look like something approaching militarised countries, with heavily defended border controls designed to prevent millions of people from entering, people who are on the move because their own country is no longer habitable, or has insufficient water or food, or is experiencing conflict over increasingly scarce resources. These people will be "climate migrants". The term "climate migrants" is one we will increasingly have to get used to. Indeed, anyone who thinks that the emerging global state of affairs does not have great potential for civil and international conflict is deluding themselves. It is no coincidence that almost every scientific conference that I go to about climate change now has a new type of attendee: the military. Every which way you look at it, a planet of 10 billion looks like a nightmare. What, then, are our options? The only solution left to us is to change our behaviour, radically and globally, on every level. In short, we urgently need to consume less. A lot less. Radically less. And we need to conserve more. A lot more. To accomplish such a radical change in behaviour would also need radical government action. But as far as this kind of change is concerned, politicians are currently part of the problem, not part of the solution, because the decisions that need to be taken to implement significant behaviour change inevitably make politicians very unpopular – as they are all too aware. So what politicians have opted for instead is failed diplomacy. For example: The UN Framework Convention on Climate Change, whose job it has been for 20 years to ensure the stabilisation of greenhouse gases in the Earth's atmosphere: Failed. The UN Convention to Combat Desertification, whose job it's been for 20 years to stop land degrading and becoming desert: Failed. The Convention on Biological Diversity, whose job it's been for 20 years to reduce the rate of biodiversity loss: Failed. Those are only three examples of failed global initiatives. The list is a depressingly long one. And the way governments justify this level of inaction is by exploiting public opinion and scientific uncertainty. It used to be a case of, "We need to wait for science to prove climate change is happening". This is now beyond doubt. So now it's, "We need to wait for scientists to be able to tell us what the impact will be and the costs". And, "We need to wait for public opinion to get behind action". But climate models will never be free from uncertainties. And as for public opinion, politicians feel remarkably free to ignore it when it suits them – wars, bankers' bonuses and healthcare reforms, to give just three examples. What politicians and governments say about their commitment to tackling climate change is completely different from what they are doing about it. What about business? In 2008 a group of highly respected economists and scientists led by Pavan Sukhdev, then a senior Deutsche Bank economist, conducted an authoritative economic analysis of the value of biodiversity. Their conclusion? The cost of the business activities of the world's 3,000 largest corporations in loss or damage to nature and the environment now stands at $2.2tn per year. And rising. These costs will have to be paid for in the future. By your children and your grandchildren. To quote Sukhdev: "The rules of business urgently need to be changed, so corporations compete on the basis of innovation, resource conservation and satisfaction of multiple stakeholder demands, rather than on the basis of who is most effective in influencing government regulation, avoiding taxes and obtaining subsidies for harmful activities to maximise the return for shareholders." Do I think that will happen? No. What about us? I confess I used to find it amusing, but I am now sick of reading in the weekend papers about some celebrity saying, "I gave up my 4×4 and now I've bought a Prius. Aren't I doing my bit for the environment?" They are not doing their bit for the environment. But it's not their fault. The fact is that they – we – are not being well informed. And that's part of the problem. We're not getting the information we need. The scale and the nature of the problem is simply not being communicated to us. And when we are advised to do something, it barely makes a dent in the problem. Here are some of the changes we've been asked to make recently, by celebrities who like to pronounce on this sort of thing, and by governments, who should know better than to give out this kind of nonsense as 'solutions': Switch off your mobile phone charger; wee in the shower (my favourite); buy an electric car (no, don't); use two sheets of loo roll rather than three. All of these are token gestures that miss the fundamental fact that the scale and nature of the problems we face are immense, unprecedented and possibly unsolvable. The behavioural changes that are required of us are so fundamental that no one wants to make them. What are they? We need to consume less. A lot less. Less food, less energy, less stuff. Fewer cars, electric cars, cotton T-shirts, laptops, mobile phone upgrades. Far fewer.And here it is worth pointing out that "we" refers to the people who live in the west and the north of the globe. There are currently almost 3 billion people in the world who urgently need to consume more: more water, more food, more energy. Saying "Don't have children" is utterly ridiculous. It contradicts every genetically coded piece of information we contain, and one of the most important (and fun) impulses we have. That said, the worst thing we can continue to do – globally – is have children at the current rate. If the current global rate of reproduction continues, by the end of this century there will not be 10 billion of us. According to the United Nations, Zambia's population is projected to increase by 941% by the end of this century. The population of Nigeria is projected to grow by 349% – to 730 million people. Afghanistan by 242%. Democratic Republic of Congo 213%. Gambia by 242%. Guatemala by 369%. Iraq by 344%. Kenya by 284%. Liberia by 300%. Malawi by 741%. Mali by 408%. Niger by 766%. Somalia by 663%. Uganda by 396%. Yemen by 299%. Even the United States' population is projected to grow by 54% by 2100, from 315 million in 2012 to 478 million. I do just want to point out that if the current global rate of reproduction continues, by the end of this century there will not be 10 billion of us – there will be 28 billion of us. Where does this leave us? Let's look at it like this. If we discovered tomorrow that there was an asteroid on a collision course with Earth and – because physics is a fairly simple science – we were able to calculate that it was going to hit Earth on 3 June 2072, and we knew that its impact was going to wipe out 70% of all life on Earth, governments worldwide would marshal the entire planet into unprecedented action. Every scientist, engineer, university and business would be enlisted: half to find a way of stopping it, the other half to find a way for our species to survive and rebuild if the first option proved unsuccessful. We are in almost precisely that situation now, except that there isn't a specific date and there isn't an asteroid. The problem is us. Why are we not doing more about the situation we're in – given the scale of the problem and the urgency needed – I simply cannot understand. We're spending €8bn at Cern to discover evidence of a particle called the Higgs boson, which may or may not eventually explain mass and provide a partial thumbs-up for the standard model of particle physics. And Cern's physicists are keen to tell us it is the biggest, most important experiment on Earth. It isn't. The biggest and most important experiment on Earth is the one we're all conducting, right now, on Earth itself. Only an idiot would deny that there is a limit to how many people our Earth can support. The question is, is it seven billion (our current population), 10 billion or 28 billion? I think we've already gone past it. Well past it.

#### Overpopulation causes extinction

Barry 5/17/14 – Ph.D. in Land Resources from the University of Wisconsin-Madison, M.S. in Conservation Biology and Sustainable Development (Glen, “On Overpopulation and Ecosystem Collapse”, <http://www.ecointernet.org/2014/05/17/on-overpopulation-and-ecosystem-collapse/>, RSpec)

The global ecological system is collapsing and dying under the cumulative filth of 7 billion people INEQUITABLY devouring their ecosystem habitats. It is impossible to avoid global ecosystem collapse if humanity continues to breed like bunnies; tolerates exorbitant inequality, abject poverty and conspicuous overconsumption; and destroys the ecosystems and climate that – rich or poor – are habitat for all of us. As I have written previously and will write again, the human family either comes together to address converging ecology, rights, and injustice crises – largely brought on by inequitable overpopulation – or faces global ecological collapse and the end of being. It is not possible to go from 1 to 7 billion people in 135 years – while still growing exponentially – without profound impacts upon natural ecosystems that provide air, water, food and livelihoods. If you don’t understand this, you are uneducated, dumb, and/or indoctrinated; you need to study ecology and get out and see the world. Or go and look at an overgrazed cow pasture and extrapolate. Merging climate, food, water, ocean, soil, justice, poverty, and old-growth forest crises – all which are to some degree caused by inequitable overpopulation – are destroying ecosystems and threaten to pull down our one shared biosphere. Earth has lost 80% of her old-growth forests, 50% of her soil, 90% of the big fish – and many water, land, and ocean ecosystems, as well as atmospheric stability, as human population has soared more than sevenfold. The human family is living far beyond its means, devouring natural capital principal and ravaging its own ecosystem habitats, which can only end in ecological, social and economic collapse. Earth’s carrying capacity has been exceeded, and we must equitably and justly bring down human population and consumption inequity or else face global ecosystem collapse. We can start the necessary social change or an angry Earth will sort it out herself by killing billions; as we possibly pull down the biosphere with us, ending most or even all life, during a prolonged collapse. Earth is not designed for 7 billion people (and growing), some of them destroying ecosystems globally as they live in opulence, others more locally through their grinding poverty and need to survive. Overpopulated, inequitable, unjust human industrial growth ravages ecosystems; destroying all that is natural, indigenous and good, heralding a brief era of opulence for some and abject misery for many, before collapsing the biosphere and causing the end of being for all. Together the human family must find a way to first limit and then reduce human population to avoid collapsing the biosphere. Infinite economic growth in a finite world is impossible; either we embrace a steady state economy together, or we die.

#### Water wars stay regional

* Most water crises don’t cause conflict
* Often results in collaboration through water sharing agreement development
* Main causation for water wars is weak institutional capacity and political and economic dynamics

Gleick 18 [Peter Gleick, MacArthur “Genius” Fellowship and was elected to the U.S. National Academy of Sciences, world-renowned expert, innovator, and communicator on water and climate issues, cofounded the Pacific Institute, which he led as president until mid-2016, pHd from UC Berkeley, and Charles Iceland, s Director, Global and National Water Initiatives with WRI’s Food, Forests, and Water Programs, “Water, Security, & Conflict”, https://pacinst.org/wp-content/uploads/2018/08/Water-Security-and-Conflict\_Aug-2018-2.pdf]

3.2. The Role of Governance in Water Security

Most water crises do not end in conflict, migration, or acute food insecurity. Instead, people muddle through until the crises recede. Some crises even generate cooperation among local or regional parties. Understanding why water crises lead to adverse outcomes in some places and better outcomes in others will help inform strategies for reducing the risks of conflict. Why, for example, did Syria sink into civil war following a record-breaking five-year drought, while .Iordan and Lebanon avoided strife following that same drought (Adams et al. 2018)? This requires integrating analyses of meteorological and resource-related events with the diverse social, political, and economic dynamics at play.

We can postulate—based on research conducted by Wolf and his colleagues (2003) on transboundary basins— that when rapid change, either on the institutional side or in the physical system, outpaces the institutional capacity to absorb that change, the stage is set for possible water insecurity. Therefore, when we go looking for water insecurity, we need to be on the lookout for large-scale water-related change and low capacity to handle such change (this Is what the Water, Peace, and Security [WPS] consortium is attempting to do via the development of a near realtime global early warning system for potential water-related threats to human security—more on this further on in this brief).

#### Water wars good for coop

Bernauer 18 [Thomas Bernauer, Professor of Political Science at ETH Zurich and Director of ETH’s Institute of Science, Technology and Policy (ISTP), “Dispelling the Water War Myth”, 9/10/18, https://www.diplomaticourier.com/dispelling-the-water-war-myth/]

Humans need water. If it is in short supply, conflicts can arise. Contrary to popular belief; however, these types of conflicts almost never lead to war, but rather to cooperation.

Fresh water is one of the most precious of natural resources. Water is available in huge quantities throughout the world, but scarcities can arise on a local level, since rainfall, natural water reservoirs, and demand create an uneven distribution across the globe. A shortage of water can cause conflicting needs to emerge within and between countries.

Do water shortages cause violent conflict?

As early as 200 years ago, in the face of a growing population, the English political economist and demographer Thomas Malthus warned against resource scarcity and the potential for resulting social upheaval. Especially from the 1970s onwards, this gave rise to the argument that the ever-increasing overexploitation of natural resources, above all water, would ultimately lead to massive conflicts and even wars. This is why the term “water wars” has come into widespread use in books, popular science texts, and statements by policy makers. In recent years, there has been a boom in assertions like these, as part of the discourse around climate change.

Cooperation rather than violent conflict

Research on this subject has contributed significantly to bringing such assertions back to reality. Statistical analyses of international and civil wars show that water scarcity is not a relevant variable for predicting this extreme form of conflict.

Several research groups, including my own, have also examined the scale of conflict and cooperation over water resources on an international and national level. Studies such as these analyze a vast number of worldwide media reports. The single most important conclusion is that social and political interactions around water resources adhere to a kind of normal distribution. Water conflicts that are fought out violently are extremely rare. No international or domestic water wars were observed in the available data dating back to the 1940s.

On the other hand, water conflicts in the form of verbal disputes are relatively common. More common, however, are interactions of a cooperative nature. In other words, water scarcity more often leads to cooperation than to conflict.

What do these findings mean for the future?

The factors determining the risk of water-related conflicts have not yet been conclusively identified, though we know that the most important predictors are likely to include: political conflicts over problems that have nothing to do with water; large development gaps within and between countries; and missing or underdeveloped institutions in the water sector within and between countries.

Even if water conflicts have so far, almost never resulted in armed conflicts, could acute water shortages resulting from massive climatic changes not lead to violent disputes about water in the future? This is of course conceivable in principle, but I think it is rather unlikely. In the vast majority of cases, the cost of armed conflict will be considerably higher than the cost of solutions reached at the negotiating table.