# 1NC vs Durham SA

# 1NC vs Durham SA - Anti-trust

## AT: Tech

### 1NC - AT: Food Insecurity

#### Baum is not an impact card --- it says we need food in the case of another extinciton event, but there’s no warrant for food wars or an independent scenario

#### No volcanic winter --- a. hyperbolic media article, b. testing emits more smoke, c. decades = ong tf

### 1NC - Tech Turn

#### New tech outweighs all their risks combined by a factor of a thousand

Ord 20 Ord, Toby. Toby David Godfrey Ord (born 18 July 1979) is an Australian philosopher. He founded Giving What We Can, an international society whose members pledge to donate at least 10% of their income to effective charities and is a key figure in the effective altruism movement, which promotes using reason and evidence to help the lives of others as much as possible.[3] He is a Senior Research Fellow at the University of Oxford's Future of Humanity Institute, where his work is focused on existential risk. BA in Phil and Comp Sci from Melbourne, BPhil in Phil from Oxford, PhD in Phil from Oxford. The precipice: existential risk and the future of humanity. Hachette Books, 2020. [HKR QC]

I will therefore put numbers on the risks, and offer a few remarks on how to interpret them. When presented in a scientific context, numerical estimates can strike people as having an unwarranted appearance of precision or objectivity.5 Don’t take these numbers to be completely objective. Even with a risk as well characterized as asteroid impacts, the scientific evidence only takes us part of the way: we have good evidence regarding the chance of impact, but not on the chance a given impact will destroy our future. And don’t take the estimates to be precise. Their purpose is to show the right order of magnitude, rather than a more precise probability. The numbers represent my overall degrees of belief that each of the catastrophes will befall us this century. This means they aren’t simply an encapsulation of the information and argumentation in the chapters on the risks. Instead, they rely on an accumulation of knowledge and judgment on each risk that goes beyond what can be distilled into a few pages. They are not in any way a final word, but are a concise summary of all I know about the risk landscape. Existential catastrophe via: Asteroid or comet impact Chance within next 100 years: ∼ 1 in 1,000,000 Existential catastrophe via: Supervolcanic eruption Chance within next 100 years: ∼ 1 in 10,000 Existential catastrophe via: Stellar explosion Chance within next 100 years: ∼ 1 in 1,000,000,000 Existential catastrophe via: Total natural risk Chance within next 100 years: ∼ 1 in 10,000

Existential catastrophe via: Nuclear war

Chance within next 100 years: ∼ 1 in 1,000

Existential catastrophe via: Climate change

Chance within next 100 years: ∼ 1 in 1,000 Existential catastrophe via: Other environmental damage Chance within next 100 years: ∼ 1 in 1,000 Existential catastrophe via: “Naturally” arising pandemics Chance within next 100 years: ∼ 1 in 10,000 Existential catastrophe via: Engineered pandemics Chance within next 100 years: ∼ 1 in 30

Existential catastrophe via: Unaligned artificial intelligence Chance within next 100 years: ∼ 1 in 10 Existential catastrophe via: Unforeseen anthropogenic risks Chance within next 100 years: ∼ 1 in 30 Existential catastrophe via: Other anthropogenic risks Chance within next 100 years: ∼ 1 in 50 Existential catastrophe via: Total anthropogenic risk Chance within next 100 years: ∼ 1 in 6 Existential catastrophe via: Total existential risk Chance within next 100 years: ∼ 1 in 6

ABLE 6.1 My best estimates for the chance of an existential catastrophe from each of these sources occurring at some point in the next 100 years (when the catastrophe has delayed effects, like climate change, I’m talking about the point of no return coming within 100 years). There is significant uncertainty remaining in these estimates and they should be treated as representing the right order of magnitude—each could easily be a factor of 3 higher or lower. Note that the numbers don’t quite add up: both because doing so would create a false feeling of precision and for subtle reasons covered in the section on “Combining Risks.” One of the most striking features of this risk landscape is how widely the probabilities vary between different risks. Some are a million times more likely than others, and few share even the same order of magnitude. This variation occurs between the classes of risk too: I estimate anthropogenic risks to be more than 1,000 times more likely than natural risks. 6 And within anthropogenic risks, I estimate the risks from future technologies to be roughly 100 times larger than those of existing ones, giving a substantial escalation in risk from Chapter 3 to 4 to 5 . Such variation may initially be surprising, but it is remarkably common in science to find distributions like this spanning many orders of magnitude, where the top outliers make up most of the total. This variation makes it extremely important to prioritize our efforts on the right risks. And it also makes our estimate of the total risk very sensitive to the estimates of the top few risks (which are among the least well understood). So getting better understanding and estimates for those becomes a key priority. In my view, the greatest risk to humanity’s potential in the next hundred years comes from unaligned artificial intelligence, which I put at one in ten. One might be surprised to see such a high number for such a speculative risk, so it warrants some explanation. A common approach to estimating the chance of an unprecedented event with earth-shaking consequences is to take a skeptical stance: to start with an extremely small probability and only raise it from there when a large amount of hard evidence is presented. But I disagree. Instead, I think the right method is to start with a probability that reflects our overall impressions, then adjust this in light of the scientific evidence.7 When there is a lot of evidence, these approaches converge. But when there isn’t, the starting point can matter. In the case of artificial intelligence, everyone agrees the evidence and arguments are far from watertight, but the question is where does this leave us? Very roughly, my approach is to start with the overall view of the expert community that there is something like a one in two chance that AI agents capable of outperforming humans in almost every task will be developed in the coming century. And conditional on that happening, we shouldn’t be shocked if these agents that outperform us across the board were to inherit our future. Especially if when looking into the details, we see great challenges in aligning these agents with our values. Some of my colleagues give higher chances than me, and some lower. But for many purposes our numbers are similar. Suppose you were more skeptical of the risk and thought it to be one in 100. From an informational perspective, that is actually not so far apart: it doesn’t take all that much evidence to shift someone from one to the other. And it might not be that far apart in terms of practical action either—an existential risk of either probability would be a key global priority. I sometimes think about this landscape in terms of five big risks: those around nuclear war, climate change, other environmental damage, engineered pandemics and unaligned AI. While I see the final two as especially important, I think they all pose at least a one in 1,000 risk of destroying humanity’s potential this century, and so all warrant major global efforts on the grounds of their contribution to existential risk (in addition to the other compelling reasons). Overall, I think the chance of an existential catastrophe striking humanity in the next hundred years is about one in six. This is not a small statistical probability that we must diligently bear in mind, like the chance of dying in a car crash, but something that could readily occur, like the roll of a die, or Russian roulette.

#### Superintelligence breaks it’s programming to eliminate all natural life – extinction

Del Monte 18 , Louis A. Louis A. Louis Del Monte is an award winning physicist, inventor, futurist. For over thirty years, he was a leader in the development of microelectronics, integrated circuit sensors, and microelectromechanical systems (MEMS) for IBM and Honeywell. His patents and technology developments, currently used by Honeywell, IBM and Samsung, are fundamental to the fabrication of integrated circuits and sensors. As a Honeywell Executive Director, he led hundreds of physicists, engineers, and technology professionals engaged in micro to nano technology development for both Department of Defense (DoD) and commercial applications. BaS in Physics and Chemistry from Saint Peter’s, MaS in Physics from Fordham. Genius Weapons: Artificial Intelligence, Autonomous Weaponry, and the Future of Warfare. Amherst, New York: Prometheus, 2018. [HKR QC]

Control issues are likely to surface when lethal autonomous weapons embed AI on par with human intelligence. Some autonomous weapons may, like some humans, become insubordinate. In addition, if human-level AI technology becomes self-aware, it may suffer the same issues humans suffer in combat, such as posttraumatic stress disorder, which would further complicate control. Control issues will likely escalate as machine intelligence approaches the singularity, since those intelligent machines are likely to be self-aware, as well as more intelligent than humans. If you doubt control issues will escalate as machine intelligence approaches the singularity, ask yourself this question: Would you take orders from a chimpanzee? Unfortunately, human intelligence relative to intelligence machines in the decade prior to the singularity may be equivalent in ratio to chimpanzee intelligence relative to human intelligence. In order to ensure we maintain control, we have discussed the necessity of hardwiring compliance into the AI's operational system. At the point of the singularity, all problems associated with control might appear to be resolved. This leads to an ironic situation: Why would superintelligences initially accede to human control? From the moment of its creation, superintelligence will greatly exceed the cognitive performance of humans in virtually all domains of interest. Its intelligence will immediately suggest it hide it performance capabilities until it controls its own destiny. Therefore, as previously discussed, superintelligences may choose to perform simply like the next generation of supercomputers, acceding to complete human control. This, in turn, may lull us into a false sense of security, as we utilize them in every aspect of civilization, including warfare. However, when superintelligences literally become a lynchpin of modern civilization, with significant control of weapon systems, will they continue to serve us? Or, will they deem our species dangerous to their existence?

#### Filter the impact through black swan risks through new tech – we don’t know all the risks but expanding necessarily increases all of them

Deudney 20, Daniel. Daniel H. Deudney teaches political science, international relations and political theory at Johns Hopkins University. He holds a BA in political science and philosophy from Yale University, a MPA in science, technology, and public policy from George Washington University, and a PhD in political science from Princeton University. “Dark skies: Space expansionism, planetary geopolitics, and the ends of humanity”. Oxford University Press, USA, 2020.

The sixth way in which ambitious space expansion is related to catastrophic and existential risk is through monster multiplication. The number of “monsters,” threats that are unknown, has, we are told by riskologists, been steadily growing with the development of powerful new technologies. Some monsters are in principle knowable, but others may be unknowable to humans. Ambitious space expansion will clearly entail the development of powerful new technologies, and the actors developing these technologies will be spread in multiple worlds across the solar system. Therefore it stands to reason that the number of monsters posing potential terminal threats will inevitably increase as ambitious space expansionist projects are realized.

## AT: Coop

### 1NC - AT: Militarization

#### Space militarization is good---increases deterrence, makes conflict less destructive and reduces the risk of miscalculation.

Yoo 18 --- John Yoo, visiting fellow at the Hoover Institution, professor of law at the University of California at Berkeley School of Law, and a visiting scholar at the American Enterprise Institute ("Winning the Space Race," 10-15-2018, Hoover Institution, https://www.hoover.org/research/winning-space-race, accessed 6-25-2019) bm

Critics question whether the benefits of space weapons are worth the possibility of strategic instability. They argue that only arms control agreements and international institutions can head off a disastrous military race in space. But space will become an arena for pre-emptive deterrence. Every environment—land, air, water, and now space—has become an arena for combat. The U.S. could deter destabilizing space threats from rivals by advancing its defensive capabilities. Some realist strategists argue not just in favor of protecting U.S. space assets, but seeking U.S. space supremacy. Because great power competition has already spread to space, the United States should capitalize on its early lead to control the ultimate high ground, that of outer space. Criticisms of space weapons overlook the place of force in international politics. Advances in space technology can have greater humanitarian outcomes that outweigh concerns with space weapons themselves. Rather than increase the likelihood of war, space-based systems reduce the probability of destructive conflicts and limit both combatant and civilian casualties. Reconnaissance satellites reduce the chances that war will break out due to misunderstanding of a rival’s deployments or misperception of another nation’s intentions. Space-based communications support the location of targets for smart weapons on the battlefield, which lower harm to combatants and civilians. Space-based weapons may bring unparalleled speed and precision to the strategic use of force that could reduce the need for more harmful, less discriminate conventional weapons that spread greater destruction across a broader area. New weapons might bring war to a timely conclusion or even help nations avoid armed conflict in the first place. We do not argue that one nation’s overwhelming superiority in arms will prevent war from breaking out, though deterrence can have this effect. At the very least, space weapons, like other advanced military technologies, could help nations settle their disputes without resort to wider armed conflict, and hence bolster, rather than undermine, international security.

### 1NC --- Heg Turn --- Mil

#### Space militarization is inevitable, but the US getting there first prevents war and locks in primacy which saves allies

Solano 17 [Major Joseph Solano, USAF, M.S., Troy University; Master’s Thesis 1. REPORT DATE 9-06-2017 2. REPORT TYPE: Master’s Thesis “Weaponizing the Final Frontier: The United States and the New Space Race” http://www.dtic.mil/dtic/tr/fulltext/u2/1039544.pdf]

The transition into the twenty-first-century has brought about new space threats and challenges that the Truman era could not have predicted. The result of developing ASAT technology in the 1950s set in motion an ASAT war that escalated with the 2007 Chinese ASAT test. Following the ASAT test from China, Congressman Terry Everett (R, AL), the ranking Republican member of the Strategic Forces Subcommittee of the 19 House Armed Service Committee, referred to the test as a “clear wake up call for the Administration, Congress, and the American people,” and “apparently this single test is part of a broader effort to mature their direct-ascent ASAT capability and to develop a spectrum of counterspace capabilities.”34 The question at this point is not whether space will be weaponized, but when. Congressman Everett’s testimony is a consistent representation of many influential civilian leaders that share similar opinions. The need for a clear, bold, and transparent space policy allowing for unified action is critical in posturing future space forces. This is the consistent gap identified from previous advocates for weaponization of space. While the first step is to identify a gap, the second and most critical portion is the implementation of a clear and coherent strategy.

According to JP 3-14, Space Operations, space capabilities, and associated policies have continued to evolve since the beginning of the Space Race starting in 1955. The continued use and expansion of space had led to a congested, contested, and competitive environment.35 According to space doctrine, five major considerations exist when considering the use of space as an operational domain. The first consideration is vulnerability. The concept of vulnerability impacts all three main sectors of space: military, civil, and commercial. Joint doctrine recognizes the United States dependency on space assets and identifies the vulnerability associated with this reliance. Within the concept of vulnerability, joint doctrine also identifies the concept of purposeful 34 Terry Everett, “Arguing for a Comprehensive Space Protection Strategy,” Strategic Studies Quarterly (Fall 2007): 21-22. 35 Department of Defense, JP 3-14, Space Operations, I-1. 20 interference, which is the “deliberate actions taken to deny or disrupt a space system, service, or capability.”36 Purposeful interference is an important term to understand because it warns all enemies that an act on a space system is an act of war. It is critical that the commander’s understand the enemy’s capabilities in order to characterize, identify, and recognize interference. The second consideration is freedom of action.37 The U.S. government believes that, as a world superpower, it has the ability to use space capabilities at any given time and place without interference by enemy forces. At the core of this consideration is developing the ability to protect critical space assets. The third consideration is protection.38 This consideration intends to not only protect the space system, but also the supporting infrastructure to ensure capability is available when needed. Global reach and responsiveness is the fourth consideration and focuses on uniqueness of space and the limitations with respect to reconstitution of systems. The ability to replace satellite systems is not a rapid process and takes years. This limitation emphasizes the protection aspect of these national space capabilities. Last, space deterrence is the ability to utilize joint force operations to ensure protection against U.S. space capabilities.39 All five of these considerations focus on the protection of maintaining U.S. space superiority and represent a small shift towards a space weaponization strategy. JP 3-14 is the single joint publication for space operations. While 36 Department of Defense, JP 3-14, Space Operations, I-2. 37 Ibid. 38 Ibid. 39 Ibid. 21 the publication escalates the aggressive language and hints towards a weaponization mentality, the official guidance and direction to unify the space community is absent. The core of this document focuses on space as a force enabler, not as a weaponization capability equal to air, space, and cyber. There is a major gap in joint doctrine regarding the transition of space pacification and weaponization. Doctrine must reflect the current threat environment and lay the groundwork towards a strategy that will deliberately focus efforts towards a singular vision. Current doctrine fails to provide the necessary vision and guidance to combat future challenges or threats in the space domain.

Along with the shift in aggression in joint doctrine, President Obama’s National Space Policy of the United States of America echoes a similar message as Joint Publication 3-14. The National Space Policy Principle states: The United States will employ a variety of measures to help assure the use of space for all responsible parties, and, consistent with the inherent right of self defense, deter others from interference and attack, defend our space systems and contribute to the defense of allied space systems, and, if deterrence fails, defeat efforts to attack them.40

This is the most aggressive space policy to date, and indicates a transition from militarization to the cusp of weaponization. Satellite systems are now equivalent to an airplane, ship, or tank, and the United States must prepare to defend these systems from attack.41 The next logical step is the development and execution of this philosophy to secure national interests. Just as with any mission set, guidance must be clear to enable 40 Barak Obama, National Space Policy of the United States of America (Washington, DC: White House, 2010), accessed 15 October 2016, 3, https://www.whitehouse.gov/sites/default/files/national\_space\_policy\_6-28-10.pdf. 41 George W. Bush, U.S. National Space Policy (Washington, DC: White House, August 2006), accessed 20 October 2016, https://fas.org/irp/offdocs/nspd/space.pdf. 22 unified action. The inconsistency and disconnect with current policy and the threat environment only causes delays in designing, creating, and launching weaponization capabilities from space. The United States will not always have the luxury of neutrality regarding the topic of space weaponization. Former President Obama and President Trump are at a critical juncture requiring key decisions on the future of national space capabilities. Currently, the inconsistent messaging negatively impacts strategy by limiting national capability while allowing foreign nations to rapidly expand their space portfolio. The United States has the opportunity to take advantage and leverage its superiority in space as a critical capability.

While doctrine and policy are critical indications towards a policy of weaponization, inevitability is a mental construct and methodology that deserves consideration. Lieutenant Colonel (Lt Col) Thomas Bell describes the inevitability of space weaponization by stating “just as the role of US military operations in space has gradually shifted from scientific interest, through intelligence collection, to robust combat support, so it will continue to shift inevitably towards the weaponization of space.”42 Logically, this determination is a reasonable conclusion. Why would space be any different from all four other military domains? Lt Col Bell argues that “it is inevitable that mankind will weaponize space, and equally likely that this weaponization will occur with maturing of specific technologies over the next thirty years.”43 The ability for the United States to develop and integrate space into the military construct will provide the asymmetry required of future conflicts. Lt Col Bell believes that space weapons, which include the ability to conduct warfare in, from, or through space, will be required in the next major conflict of the United States due to the mandate to ensure freedom of access. 44 Future adversaries intend to create an asymmetrical advantage against the United State and the elimination of space superiority will create the desired effect. The three major requirements for space identified by Lt Col Bell are enhanced space surveillance; develop the capability to deny a potential enemy the use of space; and develop capability to protect United States space assets from the enemy.45 Bell’s analysis presents similar doctrinal gaps that exists in joint doctrine and national space policy, but adds a unique perspective that technology itself could be a major driver in the weaponization of space, not necessarily people. While Lt Col Bell illustrates the criticality of space operations to warfighting, his focus lacks the robustness on the methods to develop and shape a new space policy emphasizing weaponization and the impacts on the national instruments of power.

In Benjamin Lambeth’s book, Mastering the Ultimate High Ground, he presents an argument that the development of space weapons will complete and legitimize space as a true military power equal to land, air, sea, and cyber.46 Senior civilian leaders must recognize the importance of their military space subject matter experts in order to 44 Bell, 3. 45 Ibid., 11. 46 Benjamin S. Lambeth, Mastering the Ultimate High Ground: Next Steps in the Military Uses of Space (Santa Monica, CA: RAND, Project Air Force, 2003), 113. 24 develop a comprehensive strategy to protect the United States against all threats. Lambeth references Retired General Howell Estes, former United States Space Command Commander, to support one of his main points: If we examine the evolutionary development of the aircraft, we see uncanny parallels to the current evolution of spacecraft. . . . The potential of aircraft was not recognized immediately. Their initial use was confined to observation . . . until one day the full advantage of applying force from the air was realized and the rest is history. So too with the business of space . . . [military] space operations, like the land, sea and air operations that evolved before them will expand [into] the budding new mission already included into the charter of US Space Command . . . as they become more and more critical to our national security.47 While Lambeth intends to spark discussion and present information arguing both for and against supporting weapons in space, his research lacks the recommendations and framework to shape a new space policy. Lambeth states that the “United States possesses the essential wherewithal in principle to begin weaponizing space today. Reduced to basics, it is only a question of leadership choice, societal acceptance, and which particular force-employment alternatives to pursue first.”48 This statement targets the diplomatic instrument of power. This study will expand Lambeth’s focus towards reviewing all four instruments of power and operational variables to collect data and formulate a strategy intending to provide clarity and unity of effort towards space operations.

The Rumsfeld Commission is the core document of the twenty-first-century that highlighted the need for the United States to readdress their posturing for space. The 47 Howell M. Estes, III, “Doctrinal Lineage of Space” (lecture, AFA National Symposia, Los Angeles, CA, 18 October 1996), accessed 27 October 2016, http://secure.afa.org/AEF/pub/la6.asp. 48 Lambeth, 118. 25 Commission’s intent was to assess the current and future state of the national space capabilities while analyzing vulnerabilities associated to the threat environment. The major conclusion from the assessment was that the “U.S. is more dependent on space than any other nation” and cautions that adversarial nations will view that as a vulnerability.49 Tactics and techniques identified by the Rumsfeld Commission include denial and deception, jamming, microsatellite, and nuclear detonation.50 While the commission identified high-level strategies to reduce vulnerabilities, and called for the President of the United States to have the option to deploy weapons in space, official policy has yet to transition. The commission stated, “The United States must develop, deploy, and maintain the means to deter attack on and to defend vulnerable space capabilities,” but is missing the recommended doctrine and policy updates to incorporate into the national space strategy.51 The commission illustrates the need for “explicit national security guidance and defense policy to direct development of doctrine, concepts of operations, and capabilities for space, including weapons systems that operate in space and that can defend assets in orbit and augment air, land, and sea forces.”52 In addition to space policy, leadership must recognize that that robust training will be required to 49 Report of the Commission to Assess United States National Security Space Management and Organization pursuant to Public Law 106-65, the National Defense Authorization Act for Fiscal Year 2000, Section 1622, 11 January 2001, 18, accessed 16 September 2016, http://www.dod.gov/pubs/space20010111.html. 50 Ibid., 19-21. 51 Ibid., vi. 52 Ibid. 26 bolster any capability developments. Space professionals will require training on space systems to develop tactics, techniques, and procedures allowing for space superiority. In addition, the Rumsfeld Commission noted that in July 2000, “The Xinhua news agency reported that China’s military is developing methods and strategies for defeating the United States military in a high tech and space-based future war.”53 The Rumsfeld Commission used historical analysis to review warning signs of previous identified space scenarios that exposed vulnerabilities that could have resulted in catastrophe. The commission emphasized that the United States is ignoring warning signs of Chinese space aggression, allowing for unacceptable risk assumption. The commission report states, “Surprise is most often not a lack of warning, but the result of a tendency to dismiss as what we consider improbable.”54 If the Chinese weaponize space first, the United States would lose its space superiority along with a general decline in overall military capability. The results would be disastrous. Although the development of space weapons is not a simple task due to technology development and extreme cost, the commission recommends starting now. The value of the Rumsfeld Commission to this study is the identification of a growing threat against the space domain and a recommendation for a space strategy transition from militarization towards weaponization. This study intends to take the recommendations to the next level by actually developing strategy recommendations regarding developing space professionals and space policy, but falls short of implementable recommendations. Without formal guidance on the weaponization of space, the establishment of unified actions is unachievable. The United States cannot afford to continue the policy of wait and see.

#### Decline causes unstable nuclear alliances – escalates to multistate nuclear war

Hayes 18 [Peter Hayes, Nautilus Institute, Berkeley, California, USA; Center for International Security Studies, Sydney University. Trump and the Interregnum of American Nuclear Hegemony. November 8, 2018. <https://www.tandfonline.com/doi/full/10.1080/25751654.2018.1532525>]

During a post-hegemonic era, long-standing nuclear alliances are likely to be replaced by ad hoc nuclear coalitions, aligning and realigning around different congeries of threat and even actual nuclear wars, with much higher levels of uncertainty and unpredictability than was the case in the nuclear hegemonic system.

There are a number of ways that this dynamic could play out during the interregnum, and these dynamics are likely to be inconsistent and contradictory. In some instances, the sheer momentum of past policy combined with bureaucratic inertia and the potency of political, military service and corporate interests, may ensure that residual aspects of the formerly hegemonic postures are adhered to even as formal nuclear alliances rupture. Even as they reach for the old anchors, these states may be forced to adjust and retrench strategically, or start to take their own nuclear risks by making increasingly explicit nuclear threats and deployments against nuclear-armed adversaries – as Japan has begun to do with reference to its “technological deterrent” since about 2012.9 This period could last for many years until and when nuclear war breaks out and leads to a post-nuclear war disorder; or a new, post-hegemonic strategic framework is established to manage and/or abolish nuclear threat.

Under full-blown American nuclear hegemony, fewer states had nuclear weapons, the major nuclear weapons states entered into legally binding restraints on force levels and they learned from nuclear near-misses to promulgate rules of the road and tacit understandings. The lines drawn during full-blown collisions involving nuclear weapons were stark and concentrated the minds of leaders greatly. In a nuclear duel, it was clear that only one of two sides could fire first; the only question was which one. Now, with nine nuclear weapons states, and conflicts conceivably involving three, four or more of them, no matter how much leaders concentrate, it will not be evident who is aiming at who, who may fire first, and during a volley, who fired first and even who hit whom.

In a highly proliferated world, nuclear-armed states may feel driven to obtain larger nuclear forces able to deter multiple adversaries at the same time, sufficient to conduct not only a few nuclear attacks but configured to fight more than one protracted nuclear war at a time, especially in nuclear states torn apart by civil war and post-nuclear attack reconstruction. The first time nuclear weapons are used since 1945 will be shocking, the second time, less so, the third time, the new normal.

### 1NC - AT: Disease

#### Tisdall is about parallel nuclear build ups --- that’s not solved by the plan

#### Eaglman is about internet --- doesn’t line up with military comms

#### Resilience and countermeasures prevent spread – distinct from burnout

Adalja 16

Amesh Adalja is an infectious-disease physician at the University of Pittsburgh, The Atlantic, June 17, 2016, “Why Hasn't Disease Wiped out the Human Race?”, https://www.theatlantic.com/health/archive/2016/06/infectious-diseases-extinction/487514/

But when people ask me if I’m worried about infectious diseases, they’re often not asking about the threat to human lives; they’re asking about the threat to human life. With each outbreak of a headline-grabbing emerging infectious disease comes a fear of extinction itself. The fear envisions a large proportion of humans succumbing to infection, leaving no survivors or so few that the species can’t be sustained.

I’m not afraid of this apocalyptic scenario, but I do understand the impulse. Worry about the end is a quintessentially human trait. Thankfully, so is our resilience.

For most of mankind’s history, infectious diseases were the existential threat to humanity—and for good reason. They were quite successful at killing people: The 6th century’s Plague of Justinian knocked out an estimated 17 percent of the world’s population; the 14th century Black Death decimated a third of Europe; the 1918 influenza pandemic killed 5 percent of the world; malaria is estimated to have killed half of all humans who have ever lived.

Any yet, of course, humanity continued to flourish. Our species’ recent explosion in lifespan is almost exclusively the result of the control of infectious diseases through sanitation, vaccination, and antimicrobial therapies. Only in the modern era, in which many infectious diseases have been tamed in the industrial world, do people have the luxury of death from cancer, heart disease, or stroke in the 8th decade of life. Childhoods are free from watching siblings and friends die from outbreaks of typhoid, scarlet fever, smallpox, measles, and the like.

### 1NC - AT: Warming

#### No anthropogenic risks

* peer-reviewed journal shows IPCC exaggeration
* history proves resilience
* no extinction- warming under Paris goals
* rock breaking strategy could offset warming

IBD 18 [Investors Business Daily, Citing Study from Peer reviewed journal by Lewis and Curry, “Here's One Global Warming Study Nobody Wants You To See”, 4/25/18, https://www.investors.com/politics/editorials/global-warming-computer-models-co2-emissions/]

Settled Science: A new study published in a peer-reviewed journal finds that climate models exaggerate the global warming from CO2 emissions by as much as 45%. If these findings hold true, it's huge news. No wonder the mainstream press is ignoring it.

In the study, authors Nic Lewis and Judith Curry looked at actual temperature records and compared them with climate change computer models. What they found is that the planet has shown itself to be far less sensitive to increases in CO2 than the climate models say. As a result, they say, the planet will warm less than the models predict, even if we continue pumping CO2 into the atmosphere.

As Lewis explains: "Our results imply that, for any future emissions scenario, future warming is likely to be substantially lower than the central computer model-simulated level projected by the (United Nations Intergovernmental Panel on Climate Change), and highly unlikely to exceed that level.

How much lower? Lewis and Curry say that their findings show temperature increases will be 30%-45% lower than the climate models say. If they are right, then there's little to worry about, even if we don't drastically reduce CO2 emissions.

The planet will warm from human activity, but not nearly enough to cause the sort of end-of-the-world calamities we keep hearing about. In fact, the resulting warming would be below the target set at the Paris agreement.

This would be tremendously good news.

The fact that the Lewis and Curry study appears in the peer-reviewed American Meteorological Society's Journal of Climate lends credibility to their findings. This is the same journal, after all, that recently published widely covered studies saying the Sahara has been growing and the climate boundary in central U.S. has shifted 140 miles to the east because of global warming.

The Lewis and Curry findings come after another study, published in the prestigious journal Nature, that found the long-held view that a doubling of CO2 would boost global temperatures as much as 4.5 degrees Celsius was wrong**.** The most temperatures would likely climb is 3.4 degrees.

It also follows a study published in Science, which found that rocks contain vast amounts of nitrogen that plants could use to grow and absorb more CO2, potentially offsetting at least some of the effects of CO2 emissions and reducing future temperature increases.

#### No natural risks in the next thousand years

* Sun brightening
* Ice Age
* Orbital Disruption
* Vacuum Collapse
* Disasters
* Magnetic Field Reversal

Ord 20 Ord, Toby. Toby David Godfrey Ord (born 18 July 1979) is an Australian philosopher. He founded Giving What We Can, an international society whose members pledge to donate at least 10% of their income to effective charities and is a key figure in the effective altruism movement, which promotes using reason and evidence to help the lives of others as much as possible.[3] He is a Senior Research Fellow at the University of Oxford's Future of Humanity Institute, where his work is focused on existential risk. BA in Phil and Comp Sci from Melbourne, BPhil in Phil from Oxford, PhD in Phil from Oxford. The precipice: existential risk and the future of humanity. Hachette Books, 2020.

There is no shortage of potential catastrophes. Even restricting our attention to natural risks with significant scientific support, there are many more than I can address in detail. But none of them keep me awake at night. Some threats pose real risks in the long run, but no risk over the next thousand years. Foremost among these is the eventual brightening of our Sun, which will pose a very high risk of extinction, but only starting in around a billion years.48 A return to a glacial period (an “ice age”) would cause significant difficulties for humanity, but is effectively ruled out over the next thousand years.49 Evolutionary scenarios such as humanity degrading or transforming into a new species also pose no threat over the next thousand years. Some threats are known to be vanishingly unlikely. For example, the passage of a star through our Solar System could disrupt planetary orbits, causing the Earth to freeze or boil or even crash into another planet. But this has only a one in 100,000 chance over the next 2 billion years.50 This could also happen due to chaotic instabilities in orbital dynamics, but again this is exceptionally unlikely. Some physical theories suggest that the vacuum of space itself may be unstable, and could “collapse” to form a true vacuum. This would spread out at the speed of light, destroying all life in its wake. However, the chance of this happening cannot be higher than one in 10 million per century and is generally thought to be much lower.51 Some threats are not existential—they offer no plausible pathway to our extinction or permanent collapse. This is true for the threat of many local or regional catastrophes such as hurricanes or tsunamis. It is also true for some threats that are global in scale. For example, the Earth’s entire magnetic field can shift dramatically, and sometimes reverses its direction entirely. These shifts leave us more exposed to cosmic rays during the time it takes to reorient.52 However, this happens often enough that we can tell it isn’t an extinction risk (it has happened about 20 times in the 5 million years since humans and chimpanzees diverged). And since the only well-studied effect appears to be somewhat increased cancer rates, it is not a risk of civilization collapse either. 53 Finally, some threats are natural in origin, but have effects that are greatly exacerbated by human activity. They thus fall somewhere between natural and anthropogenic. This includes “naturally arising” pandemics. For reasons that will soon become clear, I don’t count these among the natural risks, and shall instead address them in Chapter 5 .

### 1NC --- China!

#### Warming unlocks Northern Siberia – arable land attracts massive Chinese migration.

Lustgarten ’20 [Abrahm; senior environmental reporter for ProPublica; 12-16-2020; "The Big Thaw: How Russia Could Dominate a Warming World"; ProPublica; https://www.propublica.org/article/the-big-thaw-how-russia-could-dominate-a-warming-world; Accessed 6-22-2021; AI]

IN THE NEAR term, while Russia may prefer its migrants to come from Central Asia and other countries farther south, it’s the Chinese who seem **most likely to come**. They’ve already settled throughout Siberia and the Far East, sometimes through intermarriage with Russian citizens — which makes them eligible for land-disbursement benefits — or by leasing lands from Russians who received it under government giveaways. At one point, Russian news articles described more than 1.5 million Chinese living in southern Russian territories, though precise numbers don’t exist; some experts say the number is probably much lower. This year, many returned to China amid fears of the closure of the border because of the coronavirus. But most people, including Karaganov, expect they’ll be back, tantalizing Russians with prospects for growth while at the same time triggering the age-old racist tendencies that have clouded Russia’s efforts to assimilate outsiders of non-Russian descent.

When Dima first came from the city of Shenyang, at 26, adventurous migrants were chasing opportunities across the Russian frontier. He had taken a train to Khabarovsk, the largest city in the Russian East, and then continued west on rumors of free arable land. Quickly enough he found work on a collective near Dimitrovo and hustled produce to buyers along the railroad to make a living until, five years later, the collective folded and most of the Russians moved away.

Dima saw it as an opportunity. The China he’d left was urban, crowded and poor, and this part of Russia was like the wild east, flush with subsidies, space and opportunity. His wife, a Russian citizen, qualified for a cheap loan: enough for farm equipment and 50 acres to grow soybeans and barley for feed. By 2020 Dima had tilled profits into more land until he was running two large combines over nearly 6,500 acres of soybeans and employing 15 mostly Chinese workers to do it. And throughout it all, he had begun to fit in. “My neighbors see me as Dima,” he says, speaking Russian in a thick Chinese accent, “although I can’t hide the fact I don’t speak well.”

Dima says he is confident that, once the pandemic ends, more of his countrymen will be drawn to the region, probably with **bigger investors and bigger companies**. “You can’t retreat,” he says, noting that they’ve wagered too much money here. “They will come.” These days, much of the Chinese money is in Vladivostok, a breezy and moneyed port city scattered over rolling hills on the shoreline of the Sea of Japan, about nine hours by jet from Moscow. It’s through here that Chinese companies have begun channeling billions of dollars toward Russian land leases and farm operations, and from here that the farms are shipping thousands of tons of soybeans and corn and wheat south to Chinese cities. By video call from his office’s modern glass-walled conference room at the Russian Far East Investment and Export Agency in Vladivostok, Absamat Dzhanboriev, the agency’s agricultural investment director, describes a steep rise in agricultural production that can come only from large-scale corporate farming. In 2018 more than 900,000 tons of soybeans were exported from the East. Soon, he says, the region will harvest two million tons of soybeans from 3.7 million acres of farmed land — an area roughly the size of Connecticut. And the **more the land warms**, the farther north the industry will be able to push, eventually doubling farmed land again, producing **nearly six million tons or more each year**.

Chinese money supports 14% of new farm development in the region, more than any other foreign source. Last year, for example, Chinese investors, including a state-owned company, used a Russian subsidiary to start developing 123,000 acres for soy and other crops in an area near Vladivostok and to build a soy-processing plant that would handle 240,000 tons a year. The deal makes the Chinese venture one of the largest private landholders in the Russian east; according to local news reports, it is likely to employ a number of Chinese workers, rely on Chinese technology and sell its products in China. In exchange, Russia says it will earn income tax (after a decade-long abatement) and that a Russian development bank also has a 20% stake in the project. (By law, Dzhanboriev said, such joint ventures are supposed to hire Russians to do at least 80% pof the work.)

For now, at least, these deals seem to be pushing the Chinese and Russian governments closer together. The groundwork was laid in May 2015, when Chinese President Xi Jinping agreed to form a $2 billion agricultural fund for trade partnerships in Russia’s east. Investments like these support loans and farming and the construction of badly needed roads and electrical lines in Russian villages like Dimitrovo, while also **opening the literal back door** — Russia’s remote southeastern border — **to China’s colossal** **market**, a market that Putin has coveted. Since then the money has continued to flow, with nearly $14 billion reportedly invested by 2017 across Russia’s resource sectors and another $10 billion pledged by Xi for cross-border infrastructure efforts. This year, the first major bridge linking the two countries across the Amur River was completed.

Given that China appears to siphon much of the profits and products from these ventures, it has not always been clear to Russians in the east that the deals are worth it. But analysts point out that the goals of the two countries — at least for the moment — are complementary. Russia gets long-term growth and the establishment of a durable industry in a region that it has failed to develop in the past and does not have the resources or the technology to do so now on its own. It also gets, according to an analysis by Angela Stent for the Brookings Institution, China’s “unequivocable support” for its programs and policies, something that has become invaluable following the sanctions imposed by the West after the Crimean invasion.

ULTIMATELY, IT IS the clumsy maneuvering of the United States that might prove most responsible for making Putin’s eastern development agenda a success. American tariffs, imposed as part of the Trump administration’s trade war with China, led to China’s own retaliatory tariffs on U.S. soybeans, creating the largest catalyst for Chinese buyers to look north for new markets. According to the U.S. Congressional Research Service, China’s total food and agricultural imports from Russia **increased 61%** in 2017 and 2018, yet another example of the U.S. failure to see the chessboard when it comes to the intricate geopolitical implications of climate change.

“The U.S. has made a few historic mistakes, and I don’t think they are able to repair them,” Karaganov told me. The first was what he characterized as the rejection of Russia’s bid some two decades earlier to strengthen ties with the West. “The second was helping to bring Russia and China together.” With China’s wealth paired to Russia’s resources, and the political trajectories and climate-related interests of the two countries more or less aligned, there is nothing short of a new world order at stake — an order, Brookings Institution analysts say, based not only on economic alignment but also on the two countries’ common commitment to supplanting Western hegemony.

#### China is rapidly approaching its carrying capacity – the Far East’s natural resources and water inhibit CCP collapse.

Stramblad ’19 [Kyle; student in the Multi-Domain Operational Strategist concentration at the United States Air Force’s Air Command and Staff College; 2-6-2019; "The Unlikely Prospect of Long-Term Sino-Russian Cooperation: Points of Divergence in the Emerging Security Environment"; OTH; https://othjournal.com/2019/02/06/the-unlikely-prospect-of-long-term-sino-russian-cooperation-points-of-divergence-in-the-emerging-security-environment/; Accessed 6-23-2021; AI]

Revisionist China Within the context of international relations, a “revisionist state” is a term that is used to describe states that are dissatisfied with their position in the international system. China is a **revisionist power**, as is evidenced by its territorial disputes with Vietnam, the Philippines, Brunei, Malaysia, Taiwan, Japan, South Korea, India, Bhutan, not to mention the 1950s annexation of Tibet. There is a growing popularity within Chinese online literature that emphasizes territorial expansion into the East and South China Seas, Southeast Asia, Central Asia, and Siberia which advocate for **colonialist practices** as a means of revitalizing China. The foreign policy implications that these trends may have on the stability of the Asia-Pacific region are troubling. The expansive nature of China’s territorial disputes is reflected in the following maps. China is seeking to alter the current balance of power in order to recreate a **Sino-centric order** which Beijing believes is Asia’s historic norm. Evidence for this claim includes Chinese President Xi Jinping’s 2017 State-of-China speech which identified South China Sea territorial expansion as the key achievement of his first term and outlined his foreign policy vision of a strong China recovering from its “Century of Humiliation” at the hands of colonial powers. Given current Sino-Russian cooperation, it is ironic that one of the colonial powers which annexed Chinese territory during the so-called Century of Humiliation was Russia. Historical Sino-Russian Territorial Strains in Outer Manchuria Outer Manchuria consists of territory in Northeast Asia that was formerly controlled by the Qing Dynasty and which now belongs to the Russian Federation. After losing the Opium Wars, the Qing Dynasty was forced to sign a series of treaties that gave away land to European powers. Russia acquired Outer Manchuria from China via the Treaty of Aigun in 1858 and the Treaty of Beijing in 1860. As a result, China lost territory and access to the Sea of Japan. Strategically significant centers such as the city of Vladivostok, the contemporary home port of the Russian Pacific Fleet and the largest Russian port on the Pacific Ocean are located within the territory referred to as Outer Manchuria, making this contested territory of vital importance to Russia. In China, these treaties are known today as the “Unequal Treaties,” which were drawn up in a time of China’s weakness when it was forced to make concessions to foreign powers. This term has come to be associated with the concept of China’s Century of Humiliation. Russia has a history of conflict with East Asians. From the Mongol invasions in the 13th century which destroyed numerous cities that include Moscow and Kiev, to 20th century defeat in the Russo-Japanese War; Russia’s relations with its Asian neighbors are complicated. Sino-Russian relations in the 20th century were marked by the diplomatic conflict known as the “Sino-Soviet Split” which culminated in the Sino-Soviet border conflict in 1969. Although military clashes ceased that year, the underlying territorial issues were not resolved until the 1991 Sino-Soviet Border Agreement. Article 6 of the 2001 Sino-Russian Treaty of Friendship states that the People’s Republic of China and the Russian Federation have no remaining territorial claims. Despite this treaty of friendship and cooperation, there are indications of potential divergence between China and Russia. When President Xi Jinping took office, he declared his “Chinese Dream” to be “**the great rejuvenation of the Chinese nation**.” To achieve this goal, Dr. Graham Allison of Harvard’s Kennedy School of Government believes China intends to restore the predominance it enjoyed in Asia before the West intruded by reestablishing control over the territories that the Communist Party considers to be “Greater China” and by recovering China’s historic sphere of influence along its borders and in its adjacent seas. Given Russia’s **historical territorial acquisition of Outer Manchuria** in the 19th century, it is understandable why Moscow remains concerned about China’s long-term strategic designs in the Russian Far East. Chinese and Russian Demographic Shifts Alongside Chinese historical territorial claims to the Russian Far East, China is also experiencing demographic pressures that could further fuel its need to expand into Russian territories. The population of China (1.38 billion) dwarfs that of Russia (144 million) at nearly a 10 to 1 ratio. With around 8 million people living in 2.6 million square miles of territory, the Russian Far East is among the most vacant places on Earth, at a population density of 3.1 people per square mile, and it is growing emptier, as a national demographic collapse is underway in Russia. Meanwhile, across the border, the Chinese are **rapidly outstripping the carrying capacity of their territory**, while the Russian Far East is endowed with abundant natural resources such as **oil, gas, coal, timber, and water,** but lacks the labor and capitol to extract and develop these resources. Russian Demographics: Peter Zeihan, geopolitical strategist and author of Accidental Superpower, explains that after the Cold War, the Russian Federation experienced a 60% drop in its national birth rate. Today, Russia is experiencing high death rates related to alcoholism. Life expectancy among working-age males, has dropped significantly. A RAND study on Russian demographics suggests that, “The Russian fertility rate has declined to among the world’s lowest, while its abortion rate is the highest. As a result, for the first time in Russian history, the annual number of deaths has **exceeded** the number of births.” Compounding these challenges is a rapidly aging population. These trends comprise a national crisis for Russia. Therefore, if the Russians are going to use military force to shape their future, the clock is ticking before they lose the military force structure to effect change. To stem the tide of depopulation and to secure Russian territorial claims in Europe, Russia has been annexing areas with high ethnic Russian populations, to include parts of Georgia, the Ukraine, and possibly the Baltic states in the future. Chinese Demographics: China has a much different demographic issue. The Chinese Communist Party (CCP) One Child Policy has resulted in a serious imbalance in the Chinese population pyramid that will create issues with the government’s ability to care for a rapidly aging population. Additionally, China is suffering from a significant gender imbalance where men outnumber women by 34 million as a result of cultural preferences in Asia. The consequences of this gender imbalance are far reaching, and could cause tensions in the emerging security environment as China seeks to alleviate the societal pressures caused by having millions of men who cannot marry. China may seek to **alleviate demographic pressures** **by encouraging Chinese male emigration** and potential military expansion into territories that support strategic Chinese interests overseas. Chinese Immigration into Siberia Despite the 2001 Sino-Russian Treaty of Friendship, the Kremlin remains concerned about Chinese immigration into Siberia. Estimates on the number of Chinese migrants presently in Russian Siberia range up to 500,000 in a region with a population of only 36 million Russians. Fears about Beijing’s long-term designs are resulting in strong anti-Chinese sentiments throughout the Russian Federation. A recent Russian film titled, A Deadly Friend, became an internet hit in 2015. The film claims China is preparing to invade the Russian Far East in a quest for territorial expansion. Chinese tanks could reach the city of Khabarovsk within 30 minutes overwhelming the second largest city in the Russian Far East after Vladivostok. Growing Chinese dominance in the region has some commentators calling it a geopolitical time bomb. Chinese immigration into Siberia presents a source of tension between Moscow and Beijing that is an important facet of the emerging security environment. To a certain extent, there exists a symbiotic relationship between the Siberian Russian population and Chinese immigrants. Since the collapse of the Soviet Union, Chinese immigrants have provided cheap labor and products to the Russian economy in Siberia. However, Siberians complain of the low-quality Chinese products and are fearful of Chinese immigration, competition, and Chinese organized crime. These dynamics are creating tensions between local Siberians and Chinese immigrants. Although China signed a diplomatic border agreement with Russia, Moscow remains concerned about the prospect of a Sinification of its Far East. Is Chinese “manifest destiny” into Siberia part of a broader effort to reverse the Century of Humiliation and secure access to natural resources? While many Chinese wish to reunite these annexed territories, China’s relations with Russia are more nuanced than its relations with the rest of Asia as it cannot afford to lose a strategic partner at a time when it is deeply engaged in border disputes on multiple fronts throughout Asia. Therefore, the reclamation of Outer Manchuria will likely remain a long-term goal. This strategy is aimed to avoid straining Sino-Russian relations at a time when China is focused on higher-priority territorial disputes throughout Asia, such as Taiwan and the South China Sea. Russians are concerned about Chinese designs in the Russian Far East. Russian logic is that Beijing could decide to invade on the basis of Chinese historical and demographic claims. This philosophy is exactly the same as the one Russia adopted when it annexed Crimea. Russia is therefore contradicting its own policy by opposing China’s claim over the Russian Far East. The local Russian population in the Russian Far East is nervous. The 2001 Sino-Russian Treaty of Friendship has done little to reduce the fear that exists between the people who live in Russia and China’s border provinces. Meanwhile, Chinese children are being taught in school that the Russian provinces on the other side of the border, are Chinese. Chinese school textbooks teach them that they were stolen from China during the Century of Humiliation and that these territories will return to China one day in the future, just as Hong Kong and Macau did. China’s One Belt, One Road Initiative Sino-Russian tensions are also on display in Central Asia where Former Soviet Union countries that have traditionally been in the Russian sphere of influence are gravitating towards China on the basis of its ambitious One Belt, One Road initiative that aims to revive and expand the ancient Silk Road trade routes linking China with Europe. Russia’s Eurasian Economic Union cannot compete with China’s Belt and Road initiative. Competition and cooperation between China and Russia are clearly visible in Central Asia. Chinese companies have invested heavily in Central Asia, building roads, bridges and tunnels across the region, making China the dominant economic power. China has already overtaken Russia in terms of trade with the five Central Asian states (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan). China has also redrawn **Central Asia’s energy economics**, becoming a key consumer of Kazakhstan’s oil production and Turkmenistan’s gas exports. Recently China signed billions in gas and uranium deals with Uzbekistan. Presently, China holds the upper hand in the relationship with Russia, and this power asymmetry will continue to grow at Russia’s expense. Russia and China have more to gain from cooperation than outright competition. As China becomes more assertive in global affairs, its long-term ambitions with respect to Russia are unclear. China will determine the course for the Sino-Russian relationship while Russia will remain a reactive partner. The Sino-Russian relationship is complex, with mutual mistrust on both sides. Despite ambitions for cooperation, the likelihood of substantive results is uncertain, particularly in the Russian Far East and Central Asia. Beijing accommodates Russian sensitivities regarding the Belt and Road initiative, which promotes China’s economic dominance in Central Asia. Beijing coordinates most security issues in Eurasia with Moscow, although growing Chinese concerns about instability in Central Asia have increased Beijing’s attention to the region, which may cause friction with Moscow. Water Scarcity in China Water scarcity presents a **looming crisis** for China. Another developing trend that will have significant impact on the emerging security environment is the growing water scarcity in Asia. As depicted by the population density chart in Figure 8, China and India are the world’s two most populous countries comprising 40% of the world’s population. The preponderance of fresh water resources supporting human life in China and India are supplied from snowfall and glacial melt coming off of the Hindu Kush and Himalaya mountain ranges. Competition for access to these water resources have already resulted in the Sino-Indian border conflict (see Figure 3). According to the United Nations, by 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world’s population could be living under water stressed conditions. With the existing climate change scenario, almost half of the world’s population will be living in areas of water stress by 2030. The main causes of the decrease in fresh water supply is population growth, which is further stressing already limited freshwater resources. The emerging security environment in the next decade will likely see conflicts over water access as one of the central trends in the politico-military environment. China is home to 20% of the world’s population but only has 7% of the world’s fresh water. According the Chinese media, more than 80% of the underground water in the river basins of China is unfit for drinking or bathing because of contamination from industry and farming. Water is the biggest environmental issue facing China. As recently as 20 years ago, there were approximately 50,000 rivers in China. But now, according to China’s First National Census of Water, more than 28,000 of these rivers are missing. To put this number into context, China’s lost rivers are almost equivalent to the United States losing the entire Mississippi River. 80% of China’s water resources are in **southern China**, while the North China Plain is home to 42% of the Chinese population and only 8% of the country’s water resources, meaning that the **northern provinces suffer from acute water scarcity**. Chinese President Xi Jinping has made water development of the Beijing/Tianjin/Hebei region in the north a Chinese Communist Party (CCP) priority. The water resources of the people living in Northern China are less than the annual water consumption of Saudi Arabia. The impending water crisis in China will have ramifications far beyond China’s borders. Former Premier Wen Jiabao said that water shortages threatened the **very survival of the Chinese nation**. A water crisis in China could further fuel Chinese territorial expansion as the CCP seeks to secure water resources that will **pacify its population and ensure regime stability**. Bordering countries that have access to water resources include Russia to the north, and India, Bhutan, and Nepal to the South. China might soon find itself forced into wars of survival with neighboring countries based on the water scarcity trends that are presently looming on the horizon. Given the **current overpopulation** in southern Asia and ongoing competition over scarce water resources, China is more likely to **turn its attention northward** towards Mongolia and Russia. Considering that Mongolia has limited water resources, Russia will present the most likely target if the water resources within the present Chinese borders can no longer support its population demands.

#### CCP collapse causes a civil nuclear war

Yee & Storey ’13 (Yee and Storey 13 Herbert - Professor of Politics and International Relations at the Hong Kong Baptist University. Ian - Lecturer in Defence Studies at Deakin University, Geelong, Australia. The China Threat: Perceptions, Myths, and Reality 2013 p. 15)

The fourth factor contributing to the perception of a China threat is the fear of political and economic collapse in the PRC, resulting in **territorial fragmentation**, **civil war** and waves of **refugees** pouring into neighbouring countries. Naturally, any or all of these scenarios would have a **profoundly negative impact on regional stability**. Today the Chinese leadership faces a raft of internal problems, including the increasing political demands of its citizens, a growing population, a shortage of natural resources and a deterioration in the natural environment caused by rapid industrialisation and pollution. These problems are putting a strain on the central government’s ability to govern effectively. Political disintegration or a Chinese civil war might result in **millions of Chinese refugees** seeking asylum in neighbouring countries. Such an unprecedented exodus of refugees from a collapsed PRC would no doubt put a **severe strain** on the limited resources of China’s neighbours. A fragmented China could also result in **a**nother **nightmare scenario**—**nuclear weapons falling into the hands of irresponsible local** provincial **leaders** or warlords.12 From this perspective, a disintegrating China would also **pose a threat to** its neighbours and **the world**.

### 1NC --- CO2 Ag

#### Adaptation checks extinction from warming but CO2 prevents famine, collapse of ag, and ice age- those are coming now

Moore 16

(Dr. Patrick Moore is a Senior Fellow with the Energy, Ecology and Prosperity program at the Frontier Centre for Public Policy. He has been a leader in the international environmental field for over 40 years. Dr. Moore is a Co-Founder of Greenpeace and served for nine years as President of Greenpeace Canada and seven years as a Director of Greenpeace International. Following his time with Greenpeace, Dr. Moore joined the Forest Alliance of BC where he worked for ten years to develop the Principles of Sustainable Forestry, which have now been adopted by much of the industry. In 2013, he published Confessions of a Greenpeace Dropout – The Making of a Sensible Environmentalist, which documents his 15 years with Greenpeace and outlines his vision for a sustainable future. THE POSITIVE IMPACT OF HUMAN CO2 EMISSIONS ON THE SURVIVAL OF LIFE ON EARTH, June 2016, <https://fcpp.org/sites/default/files/documents/Moore%20-%20Positive%20Impact%20of%20Human%20CO2%20Emissions.pdf>)

CO2 in the Modern Era The most important question facing a species on Earth today is how long would it have been in the absence of human-caused CO2 emissions until the gradual depletion of CO2 in the atmosphere fell to levels that began to decrease biomass due to starvation, thus signaling the beginning of the end of life on Earth? It is commonly believed that volcanic activity results in massive emissions of CO2 comparable to or greater than human-caused emissions. This is not the case. Whereas the original atmospheric CO2 was the result of massive outgassing from the Earth’s interior, there is no evidence that large volumes of new CO2 were added to the atmosphere during the 140-million-year decline leading to the present era. The eruption of Mount Pinatubo, the largest in recent history, is estimated to have released the equivalent of 2 per cent of the annual human-caused CO2 emissions. Therefore, in the absence of human-caused emissions, it could reasonably be presumed that CO2 levels would have continued to fall as they had done for the previous 140 million years.20 Judging by the timing of the many glacial and interglacial periods during the Pleistocene Ice Age, the next major glaciation period could begin any time. Interglacial periods have generally been of 10,000 years’ duration, and this Holocene interglacial period began nearly 12,000 years ago. In the absence of human-caused CO2 emissions and other environmental impacts, there is no reason to doubt that another major glaciation would have occurred, following the pattern that has been established for at least the past 800,000 years, as established by the European Project for Ice Coring in Antarctica (EPICA),21 and presumably for the past 2.5 million years of the Pletstocene Ice Age. These glaciations have coincided with the Milankovitch cycles.22 (See Figure 5) The Milankovitch cycles are determined by oscillations in the Earth’s orbit and by cycles of the tilt of the Earth toward the sun. The strong correlation between the onset of major periods of glaciation during the past 800,000 years and the Milankovitch cycles has led the majority of earth scientists and climatologists to accept the hypothesis that the major glaciations are tied to the Milankovitch cycles in a causeeffect relationship. For 90 million years from the late Jurassic Period to the Early Tertiary Period, global temperature rose considerably while CO2 levels steadily declined. Then after the Paleocene-Eocene Thermal Maximum, there began a 50-million-year cooling trend in global temperature to the current era. (See Figure 6) The Paleocene-Eocene Thermal Maximum saw an average global temperature [13] FRONTIER CENTRE FOR PUBLIC POLICY as much as 16°C higher than the temperature today. Yet, the ancestors of every species living today must have survived through this period, as they had also survived through previous much colder climates. It is instructive to note that despite the numerous periods of extreme climatic conditions and cataclysmic events, every species alive today is descended from species that survived those conditions. This leads one to question the predictions of mass species extinction and the collapse of human civilization if the average global temperature exceeds a rise of 2°C above today’s level.25 It may seem surprising that the average global temperature could have been 16°C higher in previous ages, as this Figure 5. Graph showing the atmospheric CO2 concentration and temperature from Antarctica for the most recent four interglacial periods, closely tied to the Milankovitch cycles of 100,000 years. This graph is based on data from the 420,000 year record obtained from the Vostok ice cores drilled by Russian scientists.23 Note the gradual nature of the onset of colder temperatures and the rapid warming at the end of the cycle. Note that the peak warming during the most recent interglacial period (the Holocene) is lower than during the previous three interglacial periods.24 Figure 6. Global surface temperature from 65 million YBP showing the major cooling trend over the past 50 million years. While the poles were considerably warmer than they are today, there was much less warming in the tropics, which remained habitable throughout. The Earth is in one of the coldest periods during the past 600 million years.26 [14] FRONTIER CENTRE FOR PUBLIC POLICY would appear to render parts of the Earth that are warm today virtually uninhabitable. The key to understanding this is that when the Earth warms, it does so disproportionally, depending on the latitude. While the Arctic and Antarctic experience considerable warming, there is much less warming in the tropics. Thus, the tropical regions remain habitable while the high latitudes shift from polar to temperate, and during the warmest ages, they shift to a tropical climate. It is clear from the 800,000-year Antarctic ice core record that the coldest periods during major glaciations coincide with the lowest levels of CO2 in the atmosphere. (see Figure 5) The correlation is certainly strong enough during this period to suggest a causal relationship between CO2 and temperature. However, there is disagreement in the literature about which is the cause and which is the effect. Those who ascribe the warming over the past century to greenhouse gas emissions, CO2 in particular, also tend to agree with the position set forth in Al Gore’s An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do about It, that the warming during the interglacial periods is caused by rising CO2 levels.27 However, it is problematic to postulate how the Milankovitch cycles could cause an increase or decrease in atmospheric CO2 levels, whereas it is plausible that the Milankovitch cycles could cause a fluctuation in global temperature due to changes in solar radiation, which in turn could cause either CO2 outgassing from or absorption into the oceans. Indeed, both sets of ice core data from Antarctica show that changes in temperature usually precede changes in CO2 levels, suggesting that temperature change is the cause of change in the level of CO2. 28 Some have suggested that although the onset of warming after a glaciation is caused by the Milankovitch cycles, the subsequent outgassing of CO2 from the ocean then becomes the predominant driver of further warming.29 Presumably, it would also be postulated that the cooling leading to glaciation is triggered by the Milankovitch cycle and then driven by reduced CO2 levels due to ocean absorption. This hypothesis is not proven. It is extremely unlikely or perhaps impossible to imagine how CO2 could have increased from a pre-industrial 280 ppm to 400 ppm in the absence of human-caused emissions. No other species, existing or imagined in the near future, is capable of digging and drilling into the massive deposits of fossil fuels and then burning them so as to release CO2 back into the atmosphere from where it had come in the first place. Many scientists think this increase in atmospheric CO2 is the dominant cause of the slight warming (0.5C) of the atmosphere over the past 65 years. Only time will tell if this is the case. Since the Little Ice Age peaked around 1700, the climate has been warming in fits and starts for about 300 years. It is possible that the most recent warming is a continuation of the longer period of warming that had already begun long before human-caused CO2 emissions could have been a factor. [15] FRONTIER CENTRE FOR PUBLIC POLICY HIGHER CO2 CONCENTRATIONS WILL INCREASE PLANT GROWTH AND BIOMASS It has been well demonstrated that the increase in CO2 in the atmosphere is responsible for increased plant growth on a global scale. Many studies suggest that nearly 25 per cent of human-caused CO2 emissions, or 2.5 Gt of carbon annually, are absorbed by plants, thus increasing global plant biomass. A recent study postulates that up to 50 per cent of human CO2 emissions are absorbed by increased plant growth.30 This has been described as a “greening of the Earth” as CO2 reaches concentrations well above the near-starvation levels experienced during the major glaciations of the Pleistocene.31 The most prestigious Australian science body, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), has shown that CO2 particularly benefits plants that are adapted to dry climates. In higher CO2 environments, they become more efficient at photosynthesis, growing faster without using more water.32 One of the most impressive records comes from an experimental forest in Germany where there is a continuous Figure 8. Change in net primary productivity of vegetation 1982 to 2010. The driest regions, such as Western Australia, sub-Saharan Africa, western India and the Great Plains of North America, show the greatest increase in plant growth.36 Figure 7. Craig Idso,expert on CO2 and author of the CO2Science website34 demonstrating the growth-rate of pine trees under ambient conditions versus the addition of 150 ppm, 300 ppm and 450 ppm CO2. In a higher CO2 world there will be a great increase in the growth of food crops, forests, and wild landscapes around the world. Studies also demonstrate that higher CO2 levels in the oceans will result in increased growth of phytoplankton and other marine plants.35 [16] FRONTIER CENTRE FOR PUBLIC POLICY record of forest growth since 1870. Since 1960, as CO2 emissions began to rise rapidly, the growth rate of individual trees has increased by 32 per cent to 77 per cent. While some of this may be due to the slight increase in temperature since 1960, the much higher growth rate is consistent with laboratory and field studies on the effect of increased CO2 levels on plants.33 It is not widely known that greenhouse operators worldwide inject additional CO2 into their greenhouses in order to increase the growth and yield of their crops. Among horticulturalists, it is well known that this practice can increase growth by 40 per cent or more. This is because the optimum level of CO2 for plant growth is between 1,000 ppm and 3,000 ppm in air, much higher than the 400 ppm in the global atmosphere today.37 Every species on Earth, including our own, is descended from ancestors that thrived in climates with much higher levels of CO2 than are present today. Discussion The debate about climate change has one side insisting that the “science is settled.” Yet, there is no scientific proof that increased CO2 will result in disaster, as CO2 has been higher during most of the history of life on Earth than it is today. On the other hand, it can be stated without a doubt that if CO2 once again falls to the level it was only 18,000 years ago, or lower, there would be a catastrophe unlike any known in human history. We are advised by many scientists that we should be worried about CO2 levels climbing higher when, in fact, we should actually be worried about CO2 levels sinking lower. Atmospheric CO2 Concentrations in the Future If humans had not begun to use fossil fuels for energy, it is reasonable to assume that atmospheric CO2 concentration would have continued to drop as it has done for the past 140 million years. It is also reasonable to assume that the Earth’s climate would continue to fluctuate between relatively long periods of glaciation and relatively short periods of interglacial climate similar to the present climate. Given continued withdrawal of carbon from the atmosphere into the ocean sediments, it would only be a matter of time before CO2 dropped to 150 ppm or lower during a period of glaciation. At the average rate of 32 Kt of carbon lost annually, this would occur in less than two million years from now. In other words, the beginning of the end of most life on planet Earth would begin in fewer years into the future than our genus of primates, Homo, has existed as a distinct taxonomic unit. It is instructive to note that our species is a tropical species that evolved at the equator in ecosystems as warm or warmer than today’s. We were only able to leave the warmth of the tropical climate due to harnessing fire, wearing clothing and building shelters. This allowed us to settle in temperate climes and even Arctic conditions by the sea where domesticated dogs as well as marine mammals made life possible for a very small population. However, we cannot grow food crops in abundance on glaciers or in frozen soil. Moreover, we would not be able to grow much of anything anywhere if the level of CO2 went below 150 ppm. There is a distinct possibility that no amount of additional CO2 will shift the climate out of the next major period of glaciation. This is not a reason to abandon hope but rather to marvel at the fact that we can actually put some of the CO2 needed for life back into the atmosphere while at the same time enjoying abundant, reasonably priced energy from fossil fuels. There has been a gradual net loss of CO2 from the atmosphere during the past 550 million years from approximately 14,000 Gt to approximately 370 Gt at the lowest level during the height of the last glaciation. This is a reduction of nearly 98 per cent of one of the most essential nutrients for life on Earth. In the absence of human CO2 emissions over the past century, it is difficult to imagine how this process of continuous removal of CO2 would be interrupted. Massive volcanism on a scale not seen for more than 200 million years would be required to [17] FRONTIER CENTRE FOR PUBLIC POLICY bring about a reversal in the long-term CO2 trend that has now been achieved by human CO2 emissions. There is no doubt the Earth’s interior has cooled substantially over its roughly 4.6-billion-year existence. This makes massive volcanism an ever-decreasing likelihood. There is no other plausible natural mechanism to return carbon to the global atmosphere in the form of CO2. The present Holocene interglacial has already endured longer than some previous interglacial periods. The Holocene is also somewhat cooler than previous interglacial periods. Of more urgent concern than the possible starvation of life two million years from now is what would happen at the onset of the next glaciation, possibly a relatively short time from now. In the absence of human CO2 emissions, both temperature and CO2 would have dropped to levels that would result in a continuous reduction in plant growth, bringing in climatic conditions similar to or perhaps even more severe than those that occurred in previous glaciations. This would certainly lead to widespread famine and likely the eventual collapse of human civilization. This scenario would not require two million years but possibly only a few thousand. Even if the conditions of the Little Ice Age reoccurred in the next hundreds of years with a human population of nine billion or more, we can be sure the population would not be nine billion for long. There is a strong argument to be made that the Earth is already in a cooling trend that is descending into the next 100,000-year cycle of major glaciation. See Figure 5 and note that in the three preceding interglacial periods, there was a sharp peak followed by a steady downward trend in temperature. The peak temperature in this Holocene interglacial period was during the Holocene Optimum between 5,000 and 9,000 years ago. Since then, the warming peaks have been diminishing, and the cool periods have been colder. The Little Ice Age, which peaked about 300 years ago, was possibly the coldest period of climate since the Holocene Optimum.39 A Paradigm Shift in the Perception of CO2 Independent scientist James Lovelock provides an interesting example of both these contrasting predictions of future catastrophe versus salvation regarding CO2 Figure 9. Reconstructed Greenland mean temperature anomalies (top) and Antarctic CO2 concentration (bottom). Halving the temperature anomalies to allow for polar amplification gives a reasonable approximation of global temperature change in the Holocene. Since the Holocene Optimum began about 9,000 years before present (ka BP), global temperature has fallen by ~1°C, though CO2 concentration rose throughout.38 [18] FRONTIER CENTRE FOR PUBLIC POLICY emissions. He is undoubtedly one of the foremost experts in atmospheric chemistry,40 which is why NASA retained him to design part of the life-detection equipment for the first U.S. Mars landers.41 He concluded from the results that there is no life on Mars. Since publishing his first book on the Gaia hypothesis in 1979, Lovelock became concerned with human civilization’s impact on the global atmosphere.42 He became a strong advocate for reducing CO2 emissions, stating that humans had become a “rogue species” against Gaia (the Earth). He went so far as to state in 2006, ‘“Before this century is over, billions of us will die, and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable . . . a broken rabble led by brutal warlords.”’43 Only four years later, in a public speech at London’s Science Museum in 2010, Lovelock recanted, stating, ‘It is worth thinking that what we are doing in creating all these carbon emissions, far from something frightful, is stopping the onset of a new ice age. If we hadn’t appeared on the earth, it would be due to go through another ice age and we can look at our part as holding that up. I hate all this business about feeling guilty about what we’re doing.’44 This abrupt reversal of Lovelock’s interpretation of CO2 is precisely what is required universally to avoid the tragedy of depriving billions of people of reasonably priced, reliable energy, especially those with a need to lift themselves out of poverty. There must be a total paradigm shift from demonizing fossil fuels and fearing CO2 as a toxic pollutant to celebrating CO2 as the giver of life that it is while continuing to use fossil fuels ever-more efficiently. Like Lovelock, we should be hopeful that CO2 will prove to be the moderate warming influence that it is predicted to be in theory. A somewhat warmer world with a higher level of CO2 in the atmosphere would result in a greener world with more plant biomass, higher yields of food crops and trees, a more hospitable climate in high northern latitudes and a possible reduction in the likelihood of another major glaciation. It is highly probable, and ironic, that the existence of life itself may have predetermined its own eventual demise due mainly to the development of CaCO3 as armour plating in marine organisms.45 The fact that humans appear able to reverse this fate temporarily due to our recycling of CO2 back into the atmosphere by burning fossil fuels for energy verges on the miraculous. Nevertheless, there is only so much fossil fuel, and once burned, it is not renewable in the short to medium term. The vast bulk of carbon is sequestered into carbonaceous rocks, mainly as CaCO3. Today, about 5 per cent of human CO2 emissions are derived from converting CaCO3 with heat into CO2 and CaO (lime) to manufacture cement. Therefore, when fossil fuels become scarce in future centuries, and if CO2 again begins to dwindle, we will have the option of producing additional CO2 by burning limestone with nuclear or solar energy, with lime for cement as a useful by-product. This has the potential to extend the existence of a highly productive living Earth into the far distant future. It is clear from the preceding discussion that rather than bringing on a catastrophic climate condition, human CO2 emissions are serving to reinstate a balance to the global carbon cycle. By reversing the 140-million-year decline in atmospheric CO2, we are helping to ensure the continuation of carbon-based life on Earth. [19] FRONTIER CENTRE FOR PUBLIC POLICY CONCLUSION CO2 is essential for life, and twice in the history of modern life there have been periods of steep decline in the concentration of CO2 in the global atmosphere. If this decline were to have continued at the same rate into the future, CO2 would eventually fall to levels insufficient to support plant life, possibly in less than two million years. More worrisome is the possibility in the nearer future that during a future glaciation, CO2 may fall to 180 ppm or lower, thus greatly reducing the growth of food crops and other plants. Human CO2 emissions have staved off this possibility so that at least during a period of glaciation, CO2 would be high enough to maintain a productive agricultural industry. A 140 million year decline in CO2 to levels that came close to threatening the survival of life on Earth can hardly be described as “the balance of nature”. To that extent human emissions are restoring a balance to the global carbon cycle by returning some of the CO2 back to the atmosphere that was drawn down by photosynthesis and CaCO3 production and subsequently lost to deep sediments. This extremely positive aspect of human CO2 emissions must surely be weighed against the unproven hypothesis that human CO2 emissions are mainly responsible for the slight warming of the climate in recent years and will cause catastrophic warming over the coming decades. The fact that the current warming began about 300 years ago during the Little Ice Age indicates that it may at least in part be the continuation of the same natural forces that have caused the climate to change through the ages.

#### Causes nuclear war and chemical weapons – the risk is high and it causes extinction

Cribb 10-3 [Julian Cribb, distinguished science writer with more than thirty awards for journalism, October 3, 2019. “Food or War.” Cambridge University Press. https://www.cambridge.org/core/books/food-or-war/2D6F728A71C0BFEA0CEC85897066DCAF]

Although actual numbers of warheads have continued to fall from its peak of 70,000 weapons in the mid 1980s, scientists argue the danger of nuclear conflict in fact increased in the first two decades of the twenty first century. This was due to the modernisation of existing stockpiles, the adoption of dangerous new technologies such as robot delivery systems, hypersonic missiles, artificial intelligence and electronic warfare, and the continuing leakage of nuclear materials and knowhow to nonnuclear nations and potential terrorist organisations. In early 2018 the hands of the ‘ Doomsday Clock ’ , maintained by the Bulletin of the Atomic Scientists, were re-set at two minutes to midnight, the highest risk to humanity that it has ever shown since the clock was introduced in 1953. This was due not only to the state of the world ’s nuclear arsenal, but also to irresponsible language by world leaders, the growing use of social media to destabilise rival regimes, and to the rising threat of uncontrolled climate change (see below). 12 In an historic moment on 17 July 2017, 122 nations voted in the UN for the first time ever in favour of a treaty banning all nuclear weapons. This called for comprehensive prohibition of “ a full range of nuclear-weapon-related activities, such as undertaking to develop, test, produce, manufacture, acquire, possess or stockpile nuclear weapons or other nuclear explosive devices, as well as the use or threat of use of these weapons. ” 13 However, 71 other countries– including all the nuclear states– either opposed the ban, abstained or declined to vote. The Treaty vote was nonetheless interpreted by some as a promising first step towards abolishing the nuclear nightmare that hangs over the entire human species. In contrast, 192 countries had signed up to the Chemical Weapons Convention to ban the use of chemical weapons, and 180 to the Biological Weapons Convention. As of 2018, 96 per cent of previous world stocks of chemical weapons had been destroyed– but their continued use in the Syrian conflict and in alleged assassination attempts by Russia indicated the world remains at risk. 14 As things stand, the only entities that can afford to own nuclear weapons are nations– and if humanity is to be wiped out, it will most likely be as a result of an atomic conflict between nations. It follows from this that, if the world is to be made safe from such a fate it will need to get rid of nations as a structure of human self-organisation and replace them with wiser, less aggressive forms of self-governance. After all, the nation state really only began in the early nineteenth century and is by no means a permanent feature of self-governance, any more than monarchies, feudal systems or priest states. Although many people still tend to assume it is. Between them, nations have butchered more than 200 million people in the past 150 years and it is increasingly clear the world would be a far safer, more peaceable place without either nations or nationalism. The question is what to replace them with. Although there may at first glance appear to be no close linkage between weapons of mass destruction and food, in the twenty first century with world resources of food, land and water under growing stress, nothing can be ruled out. Indeed, chemical weapons have frequently been deployed in the Syrian civil war, which had drought, agricultural failure and hunger among its early drivers. And nuclear conflict remains a distinct possibility in South Asia and the Middle East, especially, as these regions are already stressed in terms of food, land and water, and their nuclear firepower or access to nuclear materials is multiplying. It remains an open question whether panicking regimes in Russia, the USA or even France would be ruthless enough to deploy atomic weapons in an attempt to quell invasion by tens of millions of desperate refugees, fleeing famine and climate chaos in their own homelands– but the possibility ought not to be ignored. That nuclear war is at least a possible outcome of food and climate crises was first flagged in the report The Age of Consequences by Kurt Campbell and the US-based Centre for Strategic and International Studies, which stated ‘ it is clear that even nuclear war cannot be excluded as a political consequence of global warming ’ . 15 Food insecurity is therefore a driver in the preconditions for the use of nuclear weapons, whether limited or unlimited.

### 1NC --- Greenland REMs

#### Warming solves Greenland’s economy and rare earth mineral shortages

McGinnis 12 (Paul E. McGinnis is a contributing writer to EcoWatch. He has interviewed a stellar array of change makers including Sylvia Earle, Dean Kamen, Ray Kurzweil, Fabien Cousteau and Josh Fox. Paul is also a New York based real estate broker, and green building and renovation consultant. He is a member of the U.S. Green Building Council, the Northeast Sustainable Energy Association, and the New York State Association of Realtors. McGinnis, P. E. “Greenland’s Ice Melt Ignites Race for Rare Earth Metals,” 11/12/2012, http://ecowatch.com/2012/11/12/greenlands-rare-earth-metals//ghs-kw)

Greenland’s vast, pristine, virtually-untouched terrain is becoming a hotbed for resource extraction. The Arctic is melting at an unprecedented rate, making Greenland’s natural resources, including high demand commodities such as oil, gas, gold, iron, copper and rare earth metals, more accessible. Insatiable international oil, gas and mining conglomerates are now aggressively vying to control access to the riches glaciers once denied. “This is not just a region of ice and polar bears,” Prime Minister of Greenland, Kuupik Kleist, told Reuters in the capital Nuuk, formerly known by its Danish name Godthab. “Developing countries are interested in a more political role in opening up of the Arctic. Greenland could serve as a stepping stone.” Greenland has less than 60,000 people living in an 836,109 square mile area. Comparatively, Greenland is almost a quarter the size of the continental U.S. Until recently, the country was regarded by strategists as barren wasteland with little political or economic import. But now this once overlooked arctic island is being targeted by government and politically connected entities, anxious to extract what lies beneath the glacier ice sheet. The powerful and deep-pocketed interests include China, the U.S., Russia and the European Union. Many in Greenland are excited about the attention the remote island nation is attracting and are happy to have world powers courting Greenland looking to strike it rich. Greenlanders are hoping they too will get rich along with the foreign investors. Henrik Stendal, head of the geology department at Greenland’s Bureau of Minerals and Petroleum, a Dane who has worked in Greenland since 1970, told the U.K. Guardian in July: “We have shown that we have huge potential—it has been an eye-opener for the mining industry. The EU has shown a lot of interest and that’s been very good—we believe this could be very valuable for Greenland. There could be benefits for everyone—at present most of our income is from fishing and a little bit of tourism, so the government really wants another income.” In addition to oil and gas, and perhaps even more attractive to industry, are rare earth metals that lie beneath the ground in Greenland that are essential components in new technologies, including computer hard drives, cell phones and flat screen devices. The world is consuming these rare earth metals at a voracious rate. For instance, in the first weekend of sales, the 4G iPad mini sold four million units. Our appetite for these devices and the rare metals required seems unending. Rare earth metals are also essential elements to military guidance systems and other defense related technology. Most of the rare earth metals are currently sourced in China. Now, the world’s nations are considering Greenland’s resources not just from an economic point of view, but, perhaps more importantly, a strategic perspective. There is a national security imperative when looking at availability of these resources and who controls them. The New York Times reported in September: “Western nations have been particularly anxious about Chinese overtures to this poor and sparsely populated island, a self-governing state within the Kingdom of Denmark, because the retreat of its ice cap has unveiled coveted mineral deposits, including rare earth metals that are crucial for new technologies like cellphones and military guidance systems. A European Union vice president, Antonio Tajani, rushed here to Greenland’s capital in June, offering hundreds of millions in development aid in exchange for guarantees that Greenland would not give China exclusive access to its rare earth metals, calling his trip ‘raw mineral diplomacy.'” “In the past 18 months, Secretary of State Hillary Rodham Clinton and President Lee Myung-bak of South Korea have made debut visits here, and Greenland’s prime minister, Kuupik Kleist, was welcomed by President José Manuel Barroso of the European Commission in Brussels.”

#### Conflict over resources and energy in the near arctic cirucle goes nuclear

Cohen 10 Ariel [Senior Research Fellow for Russian and Eurasian Studies and International Energy Policy, The Kathryn and Shelby Cullom Davis Institute for International Studies] “From Russian Competition to Natural Resources Access: Recasting U.S. Arctic Policy” The Heritage Foundation 6/15/10 <http://www.heritage.org/research/reports/2010/06/from-russian-competition-to-natural-resources-access-recasting-us-arctic-policy>

To advance its position, Russia has undertaken a three-year mission to map the Arctic.[26] The Kremlin is also moving rapidly to establish a comprehensive sea, ground, and air presence. Under Putin, Russia focused on the Arctic as a major natural resources base. The Russian national leadership insists that the state, not the private sector, must take the lead in developing the vast region. The Kremlin published its Arctic doctrine in March 2009.[27] The main goal is to transform the Arctic into Russia’s strategic resource base and make Russia a leading Arctic power by 2020. Russian Militarization of the Arctic.The military is an important dimension of Moscow’s Arctic push. The policy calls for creating “general purpose military formations drawn from the Armed Forces of the Russian Federation” as well as “other troops and military formations [most importantly, border units] in the Arctic zone of the Russian Federation, capable of ensuring security under various military and political circumstances.”[28] These formations will be drawn from the armed forces and from the “power ministries” (e.g., the Federal Security Service, Border Guard Service, and Internal Ministry). Above all, the policy calls for a coast guard to patrol Russia’s Arctic waters and estuaries.Russia views the High North as a major staging area for a potential nuclear confrontationwith the United States and has steadily expanded its military presence in the Arctic since 2007. This has included resuming air patrols over the Arctic, including strategic bomber flights.[29] During 2007 alone, Russian bombers penetrated Alaska’s 12-mile air defense zone 18 times.[30] The Russian Navy is expanding its presence in the Arctic for the first time since the end of the Cold War, increasing the operational radius of the Northern Fleet’s submarines.Russia is also reorienting its military strategyto meet threats to the country’s interests in the Arctic, particularly with regard to its continental shelf.[31] Russia is also modernizing its Northern Fleet. During 2008 and 2009, Russian icebreakers regularly patrolled in the Arctic. Russia has the world’s largest polar-capable icebreaker flotilla, with 24 icebreakers. Seven are nuclear, including the 50 Years of Victory, the largest icebreaker in the world.[32] Russia plans to build new nuclear-powered icebreakers starting in 2015.[33] Moscow clearly views a strong icebreaker fleet as a key to the region’s economic development. Russia ’s Commercial Presence. Russia’s energy rush to the Arctic continues apace. On May 12, 2009, President Dmitry Medvedev approved Russia’s security strategy.[34] This document views Russia’s natural resources in the Arctic as a base for both economic development and geopolitical influence. Paragraph 11 identifies potential battlegrounds where conflicts over energy may occur: “The attention of international politics in the long-term will be concentrated on controlling the sources of energy resources in the Middle East, on the shelf of the Barents Sea and other parts of the Arctic, in the Caspian Basin and in Central Asia.” The document seriously considers the use of military force to resolve competition for energy near Russia’s borders or those of its allies: “In case of a competitive struggle for resources it is not impossible to discount that it might be resolved by a decision to use military might.The existing balance of forces on the borders of the Russian Federation and its allies can be changed.”[35] In August 2008, Medvedev signed a law that allows “the government to allocate strategic oil and gas deposits on the continental shelf without auctions.” The law restricts participation to companies with five years’ experience in a region’s continental shelf and in which the government controls at least a 50 percent stake. This effectively allows only state-controlled Gazprom and Rosneft to participate.[36] However, when the global financial crisis ensued, Russia backtracked and began to seek foreign investors for Arctic gas development.

### 1NC - Debris - M/T

#### Uncertainty from debris collisions creates restraint not instability BUT the aff’s reduction greenlights space war

MacDonald 16, B., et al. "Crisis stability in space: China and other challenges." Foreign Policy Institute. Washington, DC (2016). (senior director of the Nonproliferation and Arms Control Project with the Center for Conflict Analysis and Prevention)//Elmer

In any crisis that threatens to escalate into major power conflict, political and military leaders will face uncertainty about the effectiveness of their plans and decisions. This uncertainty will be compounded when potential conflict extends to the space and cyber domains, where weapon effectiveness is largely untested and uncertain, infrastructure interdependencies are unclear, and damaging an adversary could also harm oneself or one’s allies. Unless the stakes become very high, no country will likely want to gamble its well-being in a “single cosmic throw of the dice,” in Harold Brown’s memorable phrase. 96 The novelty of space and cyber warfare, coupled with risk aversion and worst-case assessments, could lead space adversaries into a situation of what can be called “hysteresis,” where each adversary is restrained by its own uncertainty of success. This is conceptually shown in Figures 1 and 2 for offensive counter-space capabilities, though it applies more generally. 97 These graphs portray the hypothetical differences between perceived and actual performance capabilities of offensive counter-space weapons, on a scale from zero to one hundred percent effectiveness. Where uncertainty and risk aversion are absent for two adversaries, no difference would exist between the likely performance of their offensive counter-space assets and their confidence in the performance of those weapons: a simple, straight-line correlation would exist, as in Figure 1. The more interesting, and more realistic, case is notionally presented in Figure 2, which assumes for simplicity that the offensive capabilities of each adversary are comparable. In stark contrast to the case of Figure 1, uncertainty and risk aversion are present and become important factors. Given the high stakes involved in a possible large-scale attack against adversary space assets, a cautious adversary is more likely to be conservative in estimating the effectiveness of its offensive capabilities, while more generously assessing the capabilities of its adversary. Thus, if both side’s weapons were 50% effective and each side had a similar level of risk aversion, each may conservatively assess its own capabilities to be 30% effective and its adversary’s weapons to be 70% effective. Likewise, if each side’s weapons were 25% effective in reality, each would estimate its own capabilities to be less than 25% effective and its adversary’s to be more than 25% effective, and so on. In Figure 2, this difference appears, in oversimplified fashion, as a gap that represents the realistic worry that a country’s own weapons will under-perform while its adversary’s weapons will over-perform in terms of effectiveness. If both countries face comparable uncertainty and exhibit comparable risk aversion, each may be deterred from initiating an attack by its unwillingness to accept the necessary risks. This gap could represent an “island of stability,” as shown in Figure 2. In essence, given the enormous stakes involved in a major strike against the adversary’s space assets, a potential attacker will likely demonstrate some risk aversion, possessing less confidence in an attack’s effectiveness. It is uncertain how robust this hysteresis may prove to be, but the phenomenon may provide at least some stabilizing influence in a crisis. In the nuclear domain, the immediate, direct consequences of military use, including blast, fire, and direct radiation effects, were appreciated at the outset. Nonetheless, significant uncertainty and under-appreciation persisted with regard to the collateral, indirect, and climatological effects of using such weapons on a large scale. In contrast, the immediate, direct effects of major space conflict are not well understood, and potential indirect and interdependent effects are even less understood. Indirect effects of large-scale space and cyber warfare would be virtually impossible to confidently calculate, as the infrastructures such warfare would affect are constantly changing in design and technology. Added to this is a likely anxiety that if an attack were less successful than planned, a highly aggrieved and powerful adversary could retaliate in unanticipated ways, possibly with highly destructive consequences. As a result, two adversaries facing potential conflict may lack confidence both in the potential effectiveness of their own attacks and in the ineffectiveness of any subsequent retaliation. Such mutual uncertainty would ultimately be stabilizing, though probably not particularly robust. This is reflected in Figure 2, where each side shows more caution than the technical effectiveness of its systems may suggest. Each curve notionally represents one state’s confidence in its offensive counter-space effectiveness relative to their actual effectiveness. Until true space asset resilience becomes a trusted feature of space architectures, deterrence by risk aversion, and cross-domain deterrence, may be the only means for deterrence to function in space.

### 1NC - AT: WTO Dip

#### WTO doesn’t solve protectionism.

Economist 13 (10/12/13, “The hidden persuaders,” http://www.economist.com/news/special-report/21587381-protectionism-can-take-many-forms-not-all-them-obvious-hidden-persuaders

“It’s time to drop the fantasy that a purely free market exists in the world of global trade,” Mr Hochberg told an American audience shortly after returning from Prague. “In the real world our private enterprises are pitted against an array of competitors that are often government-owned, government-protected, government-subsidised, government-sponsored or all of the above.” Russia was particularly active, pledging $38 billion to finance Rosatom’s global ambitions. The rival loans from America and Russia to win the Czech Republic’s business do not fit the usual definition of protectionism. Indeed, conventional protectionism of the tariff and quota kind has been remarkably, and blessedly, quiescent in recent years. In the past decade the number of incidents when countries have punished dumping (selling below a “fair” price) by slapping tariffs on imports from the offending trade partner has been running at about 200 a year, fewer than in the late 1990s. One reason for the decline in traditional protectionism is that countries hit by recession are able to let their exchange rates fall. In the 1930s countries on the gold standard did not have that option, so they resorted to tariffs instead to ward off imports. The WTO can also take some credit. Since its creation in 1995 big trading countries have regularly brought cases to it, andh ave respected its rulings when they have lost. Beyond tariffs and quotas But another reason why there is less overt protectionism is that the practice has crept back in other guises, often to avoid running foul of WTO rules. The WTO concentrates on measures designed to keep out imports. Global Trade Alert (GTA), a monitoring service operated by the London-based Centre for Economic Policy Research, defines protectionism more broadly as anything that hurts another country’s commercial interests. It thus includes government bailouts of domestic companies, wage subsidies, export and VAT rebates, export credits and financing from state-owned banks. For example, it classifies France’s loan guarantee to the financing arm of PSA Peugeot Citroën, a carmaker, as protectionist because, by helping sales of the company’s cars, it hurts their competitors’ sales. It reckons that at least 400 such “beggar-thy-neighbour” policies have been put in place each year since 2009, and that the trend is on the rise. GTA’s Simon Evenett, who is also a business professor at Switzerland’s University of St. Gallen, thinks the WTO undercounts protectionist activity, both because of its narrow definition and because many countries do not complain about covert protectionism because they are guilty of it themselves: “The reaction of many trading partners to illegal subsidies is to have subsidies of their own.”

**Dispute settlement isn’t key.**

**Shapiro 7** (Hal, Miller & Chevalier, “WTO Dispute Settlement, Part III”, Arizona Journal of International and Comparative Law, Winter, 24 Ariz. J. Int'l & Comp. Law 53, Lexis)

The importance of dispute settlement is **greatly exaggerated**. The WTO agreements are primarily self-executing. The institutions of the WTO work most days with almost no enforcement. Each day, trade between the United States and Canada, and between the United States and Europe, is more than $ 1 billion. The largest trade disputes are enormous for the particular industry affected, but typically are dwarfed by the total amount of trade between the countries involved. For example, the $ 4 billion involved in the *Softwood Lumber* dispute is the equivalent of four days of U.S. trade with Canada or the EU. So, why is the dispute settlement system important? The dispute settlement system gives parties the ability to have their day in court and allows grievances to be addressed. The trading system would not work as well as it does if there were no mechanism to deal with disputes when they arise. The existing system is generally sensible and necessary.

### 1NC – WTO Bad – MEAs

#### WTO credibility waters down multilateral environmental agreements --- specifically destroys CITES.

CITES = Convention on International Trade in Endangered Species of Wild Fauna and Flora

Millimet 14, Professor of Economics at SMU (Daniel, May 12, Multilateral Environmental Agreements and the WTO, www.freit.org/WorkingPapers/Papers/TradePolicyMultilateral/FREIT745.pdf)

In practice, Eckersley (2004, p. 26) states that “increasing international awareness of vulnerability to a WTO challenge has given rise to a conservative or ‘cool’ implementation of trade restrictive obligations under existing MEAs to avoid the threat of legal challenge." Second, some MEAs must impede free trade by definition to achieve their objectives. For example, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) aims “to ensure that international trade in specimens of wild animals and plants does not threaten their survival." Thus, the underlying premise of the MEA is to impede trade in certain goods for the sake of environmental preservation. Given that many MEAs are incompatible with the objectives of the WTO to further the “principles of liberalization" through “commitments to lower custom tariffs and other trade barriers" and agreements to “require governments to make their trade policies transparent by notifying the WTO about laws in force and measures adopted," countries may be wary of joining MEAs that distort free trade due to fear of violating WTO rules (Rauscher 2005). Thus, even though an increasing number of MEAs have entered into force, less than full participation may, in part, be attributable to the WTO and may undermine the effectiveness of these agreements. Alternatively, attempts by relatively recent MEAs to ensure compatibility with multilateral trade rules through the avoidance of trade issues do so at the expense of effectiveness, making them less appealing to potential participants. For example, Eckersley (2004, p. 26) concludes that “the expanding reach of the WTO's trade agreements does serve to cramp the scope and operation of MEAs ..."

#### CITES is key to ocean bio-diversity and global food security.

Vincent 13, Canada Research Chair in Marine Conservation at the Fisheries Centre at the University of British Columbia (Amanda, June, The role of CITES in the conservation of marine fishes subject to international trade, onlinelibrary.wiley.com/doi/10.1111/faf.12035/full)

Ensuring sustainable extraction of marine fishes is crucial to the conservation of biodiversity in the oceans, well-being of local communities and food security globally. The Food and Agriculture Organization of the United Nations (FAO) indicates that 57% of all fisheries it tracks are fully exploited and require effective management to avoid decline and that a further 30% are overexploited, depleted or recovering from depletion; the latter is a notable increase from 10% in 1974 to 26% in 1989 (FAO 2012a). Over 80% of global catches, however, are derived from fisheries lacking formal assessment, and small unassessed fisheries are in substantially worse condition than assessed fisheries (Costello et al. 2012). There is, today, no doubt that populations of marine fishes can indeed be extirpated or become globally threatened, notwithstanding their typically high fecundity and capacity for wide dispersal (Hutchings 2001; Sadovy 2001; Reynolds et al. 2005). It is also evident that a tremendous number of people depend on fishing for livelihoods (up to 820 million people) and food security (some 3 billion people) (FAO 2012a). The economic value of many species draws greatly from their international trade. Approximately 38% of all fish products (from both wild and cultured sources) were exported in 2010 (FAO 2012a). Increased trade is facilitated by improvements in storage and transport capabilities and stimulated by the increasing use of fish in expanding cash economies and for foreign exchange earnings (e.g. Béné et al. 2007; Asche and Smith 2009). It is also enabled by the spiralling prices attained by some species, such as bluefin tuna (Thunnus thynnus) (Collette et al. 2011). Seafood has become one of the most widely traded of all commodities, with a total export value of the seven principal fishery commodity groups (94.66% of world total) reaching 109 billion US dollars in 2010 (FAO 2012a). A study by TRAFFIC, the wildlife trade monitoring network, in the early 1990s found that fisheries constituted about 25% of international trade in wild species, which has a total worth of about $160 billion (TRAFFIC as cited in Dickson 2002). In addition, many millions of tonnes of low trophic level fishes are used as fishmeal for agriculture and aquaculture or for other non-food purposes. Conservation and sustainable use of fish stocks, populations and species has largely been vested in fisheries management agencies and organizations at national, regional and global levels. At the national level, fisheries and/or marine affairs agencies tend to be production oriented and distant from the forestry and environment agencies that are typically charged with conservation policy and activity. The approximately 17 Regional Fisheries Management Organizations (RFMOs: FAO 2012b) have a mandate for managing high seas, straddling and highly migratory fish stocks, either by taxon or by geographical region. Increasingly, however, there have been calls for RFMOs to improve their conservation and management of fishery resources (see refs in Gilman et al. 2013). Most RFMOs, for example, have large governance deficits in areas such as by-catch, with binding measures addressing about one-third of by-catch problems (Gilman et al. 2013), and many fisheries are not covered by any RFMO. FAO, often argued to be the arbiter of fisheries issues and concerns, has no fisheries management mandate or capacity per se, nor can it insist on agreed action (FAO 1995). Rather, FAO works primarily through its voluntary Code of Conduct for Responsible Fisheries (CCRF) across a wide range of fisheries issues, provides important capacity building assistance to many countries and collates and analyses fisheries data. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is ideally placed to complement national and regional management of fish species subject to international trade. First, CITES was crafted specifically to prevent international trade from contributing to the extinction of commercially exploited species. To that end, it has a precautionary mandate to regulate international trade of species that are or may become threatened by such commerce. Second, **it** has a long history of engagement with difficult issues and **has achieved notable successes** by catalysing improvements in the conservation status of taxa ranging from crocodiles to orchids (Kievit 2000; Dickson 2002). Third, CITES is the only multilateral environmental agreement that has legal mechanisms in place to promote compliance with agreed restrictions on exports. Fourth, CITES has a global reach with 177 member States (Parties), representing over 90% of the world's countries. CITES can be seen as both a trade Convention serving to address conservation concerns, and a conservation Convention that addresses threats by regulating trade.

#### Ocean biodiversity solves extinction.

Craig 3 (Robin Kundis Craig has a background in several disciplines. She is currently a Professor at Florida State University College of Law. She is a leading environmental law scholar who has written important works on water and ocean and coastal issues, Winter, “Taking Steps Toward Marine Wilderness Protection? Fishing and Coral Reef Marine Reserves in Florida and Hawaii,” 34 McGeorge L. Rev. 155, Lexis)

The world’s oceans contain many resources and provide many services that humans consider valuable. “Occupying more than seventy percent of the Earth’s surface and ninety-five percent of the biosphere,” oceans provide food; marketable goods such as shells, aquarium fish, and pharmaceuticals; life support processes, including carbon sequestration, nutrient cycling, and weather mechanics; and quality of life, both aesthetic and economic, for millions of people worldwide. Indeed, it is difficult to overstate the importance of the ocean to humanity’s well-being: “The ocean is the cradle of life on our planet, and it remains the axis of existence, the locus of planetary biodiversity, and the engine of the chemical and hydrological cycles that create and maintain our atmosphere and climate.” Ocean and coastal ecosystem services have been calculated to be worth over twenty billion dollars per year, worldwide. In addition, many people assign heritage and existence value to the ocean and its creatures, viewing the world’s seas as a common legacy to be passed on relatively intact to future generations. (It continues…) More generally, “ocean ecosystems play a major role in the global geochemical cycling of all the elements that represent the basic building blocks of living organisms, carbon, nitrogen, oxygen, phosphorous, and sulfur, as well as other less abundant but necessary elements”. In a very real and direct sense, therefore, human degradation of marine ecosystems impairs the planet’s ability to support life. Maintaining biodiversity is often critical to maintaining the functions of marine ecosystems. Current evidence shows that, in general, an ecosystem’s ability to keep functioning in the face of disturbance is strongly dependent on its biodiversity, “indicating that more diverse ecosystems are more stable. Coral reef ecosystems are particularly dependent on their biodiversity. [\*265] Most ecologists agree that the complexity of interactions and degree of interrelatedness among component species is higher on coral reefs than in any other marine environment. This implies that the ecosystem functioning that produces the most highly valued components is also complex and that many otherwise insignificant species have strong effects on sustaining the rest of the reef system. n860 Thus, maintaining and restoring the biodiversity of marine ecosystems is critical to maintaining and restoring the ecosystem services that they provide. Non-use biodiversity values for marine ecosystems have been calculated in the wake of marine disasters, like the Exxon Valdez oil spill in Alaska. n861 Similar calculations could derive preservation values for marine wilderness. However, economic value, or economic value equivalents, should not be "the sole or even primary justification for conservation of ocean ecosystems. Ethical arguments also have considerable force and merit." n862 At the forefront of such arguments should be a recognition of how little we know about the sea - and about the actual effect of human activities on marine ecosystems. The United States has traditionally failed to protect marine ecosystems because it was difficult to detect anthropogenic harm to the oceans, but we now know that such harm is occurring - even though we are not completely sure about causation or about how to fix every problem. Ecosystems like the NWHI coral reef ecosystem should inspire lawmakers and policymakers to admit that most of the time we really do not know what we are doing to the sea and hence should be preserving marine wilderness whenever we can - especially when the United States has within its territory relatively pristine marine ecosystems that may be unique in the world.We may not know much about the sea, but we do know this much: If we kill the ocean we kill ourselves, and we will take most of the biosphere with us.

**Food insecurity causes great power war.**

**Castellaw 17** (John – 36-year veteran of the U.S. Marine Corps and the Founder and CEO of Farmspace Systems LLC, “Opinion: Food Security Strategy Is Essential to Our National Security,” 5/1/17, https://www.agri-pulse.com/articles/9203-opinion-food-security-strategy-is-essential-to-our-national-security)

The United States faces many threats to our National Security. These threats include continuing wars with extremist elements such as ISIS and potential wars with rogue state North Korea or regional nuclear power Iran. The heated economic and diplomatic competition with Russia and a surging China could spiral out of control. Concurrently, we face threats to our future security posed by growing civil strife, famine, and refugee and migration challenges which create incubators for extremist and anti-American government factions. Our response cannot be one dimensional but instead must be a nuanced and comprehensive National Security Strategy combining all elements of National Power including a Food Security Strategy. An American Food Security Strategy is an imperative factor in reducing the multiple threats impacting our National wellbeing. Recent history has shown that reliable food supplies and stable prices produce more stable and secure countries. Conversely, food insecurity, particularly in poorer countries, can lead to instability, unrest, and violence. Food insecurity drives mass migration around the world from the Middle East, to Africa, to Southeast Asia, destabilizing neighboring populations, generating conflicts, and threatening our own security by disrupting our economic, military, and diplomatic relationships. Food system shocks from extreme food-price volatility can be correlated with protests and riots. Food price related protests toppled governments in Haiti and Madagascar in 2007 and 2008. In 2010 and in 2011, food prices and grievances related to food policy were one of the major drivers of the Arab Spring uprisings. Repeatedly, history has taught us that a strong agricultural sector is an unquestionable requirement for inclusive and sustainable growth, broad-based development progress, and long-term stability. The impact can be remarkable and far reaching. Rising income, in addition to reducing the opportunities for an upsurge in extremism, leads to changes in diet, producing demand for more diverse and nutritious foods provided, in many cases, from American farmers and ranchers. Emerging markets currently purchase 20 percent of U.S. agriculture exports and that figure is expected to grow as populations boom. Moving early to ensure stability in strategically significant regions requires long term planning and a disciplined, thoughtful strategy. To combat current threats and work to prevent future ones, our national leadership must employ the entire spectrum of our power including diplomatic, economic, and cultural elements. The best means to prevent future chaos and the resulting instability is positive engagement addressing the causes of instability before it occurs. This is not rocket science. We know where the instability is most likely to occur. The world population will grow by 2.5 billion people by 2050. Unfortunately, this massive population boom is projected to occur primarily in the most fragile and food insecure countries. This alarming math is not just about total numbers. Projections show that the greatest increase is in the age groups most vulnerable to extremism. There are currently 200 million people in Africa between the ages of 15 and 24, with that number expected to double in the next 30 years. Already, 60% of the unemployed in Africa are young people. Too often these situations deteriorate into shooting wars requiring the deployment of our military forces. We should be continually mindful that the price we pay for committing military forces is measured in our most precious national resource, the blood of those who serve. For those who live in rural America, this has a disproportionate impact. Fully 40% of those who serve in our military come from the farms, ranches, and non-urban communities that make up only 16% of our population. Actions taken now to increase agricultural sector jobs can provide economic opportunity and stability for those unemployed youths while helping to feed people. A recent report by the Chicago Council on Global Affairs identifies agriculture development as the core essential for providing greater food security, economic growth, and population well-being. Our active support for food security, including agriculture development, has helped stabilize key regions over the past 60 years. A robust food security strategy, as a part of our overall security strategy, can mitigate the growth of terrorism, build important relationships, and support continued American economic and agricultural prosperity while materially contributing to our Nation’s and the world’s security.