# NSDA STARTER FILES – AFF

# NOTES

Included in this file is

1. A 1AC that is intended for novices or debaters with some experience in other formats, but who are new to policy debate.\*
2. A2 Topicality files for the generic T arguments included in the NEG starter files
3. A2 DA files for the disadvantage included in the NEG starter files

\*To be specific, my criteria for the 1AC being reasonable for novices or other new policy debaters is that the file can be read in 8 minutes by a student with minimal spreading experience, relies on more common arguments that help introduce students to policy debate, and of course falls within the limited novice topic areas approved by the NSDA.

Any questions or feedback can be directed to bosch1kd@cmich.edu

# 1AC - Agriculture

## Harms

#### Current trends in agricultural water use WILL lead to water shortages

Jenny Kehl 2020

Global Studies and School of Freshwater Sciences, University of Wisconsin, Milwaukee; Moving beyond the Mirage: Water Scarcity and Agricultural Use Inefficiency in USA, MDPI, doi:10.3390/w12082290

Water scarcity and food security are inextricably linked with environmental sustainability. Agriculture is the largest water user, requiring approximately 70% of all water used in the United States [1] for human production and consumption. With such a high percentage of all water flowing to one sector, we cannot advance environmental sustainability without addressing water inefficiencies in the agricultural sector. Agriculture generates over USD 60 billion per year for the U.S. economy [2]. Yet, food insecurity is worsening at an unprecedented pace, largely as a function of water scarcity and use inefficiency. The main factor of food insecurity in the U.S. is the large quantity of water-intensive crops grown in regions with extreme levels of water stress. This is arguably the most widespread inefficient use of water in agriculture as it spans across the country and includes the crops of the greatest production volume and highest monetary value. It is also the least environmentally sustainable inefficiency; growing water-intensive crops in water stressed regions obviously further exacerbates existing water scarcity. Significant segments of the U.S. agricultural production system are no longer environmentally or economically sustainable, they need to be reorganized to reduce water stress, increase food security, maintain economic viability, and to preserve the water resources and ecosystem services upon which the agricultural system ultimately depends. As several of the most extremely water-stressed regions of the U.S. are pressed to produce the most water-intensive crops, mighty rivers such as the Colorado and expansive aquifers such as the Ogallala are being depleted at non-renewable rates. The purpose of this research is to provide empirical evidence that agriculture needs to be restructured to adjust for water inefficiencies that are not environmentally sustainable and will eventually lead to the economic collapse of regions that depend on high-volume, high-value cash crops. This research identifies water-use inefficiences for the four major agricultural crops of highest volume and value for the U.S. economy: wheat, soybeans, corn, and cotton, all of which are highly water intensive crops. The data are used to locate areas where water-intensive crops are grown in large quantities in water stressed regions. The data results are represented in Geographic Information System (GIS) maps of graduated levels of water stress overlaid with the quantity of water-intensive commodities produced in that region, followed by analysis and discussion.

#### Water collapse coming soon in the SQUO

Heggie 2020

Jon, National Geographic Journalist, Why is America running out of water, National Geographic, https://www.nationalgeographic.com/science/article/partner-content-americas-looming-water-crisis#:~:text=Along%20with%20decreasing%20rainfall%20comes,lakes%2C%20reservoirs%2C%20and%20rivers.

In March 2019, storm clouds rolled across Oklahoma; rain swept down the gutters of New York; hail pummeled northern Florida; floodwaters forced evacuations in Missouri; and a blizzard brought travel to a stop in South Dakota. Across much of America, it can be easy to assume that we have more than enough water. But that same a month, as storms battered the country, a government-backed report issued a stark warning: America is running out of water. Within as little as 50 years, many regions of the United States could see their freshwater supply reduced by as much as a third, warn scientists. Of all the freshwater basins that channel rain and snow into the rivers from which we draw the water we rely on for everything from drinking and cooking to washing and cleaning, nearly half may be unable to meet consumers’ monthly demands by 2071. This will mean serious water shortages for Americans. Shortages won’t affect only the regions we’d expect to be dry: with as many as 96 out of 204 basins in trouble, water shortages would impact most of the U.S., including the central and southern Great Plains, the Southwest, and central Rocky Mountain states, as well as parts of California, the South, and the Midwest. And if 50 years seems like a long way off, the reality is much sooner: shortages could occur in 83 basins as early as 2021. With 40 out of 50 states expecting water shortages, it’s time to start thinking about where our water is going. From the snow-capped Rockies to the flat expanses of the prairies, and from the wetlands of Florida to the deserts of Arizona, the U.S. is a country of geographical extremes with rainfall patterns to match: Louisiana gets over 60 inches of rainfall a year, while in Nevada, less than 10 inches of rain falls annually in valleys and deserts. But climate change is impacting precipitation. In broad terms, while the wettest regions of the U.S. are getting wetter, the drier areas are getting drier, and there are some seasonal shifts in water patterns—rising temperatures mean the snowmelt that feeds many rivers begins and ends earlier, contributing to summer water shortages. Even where precipitation is projected to increase, mostly in the nation’s northern regions, the trend is toward more intense concentrations of rainfall that are difficult to capture and use. At the same time, 145 basins are expected to be drier, especially in the Southwest, southern Great Plains, and Florida. In the West, California has already faced some of its worst droughts in recorded history. Along with decreasing rainfall comes rising temperatures. By 2050 the U.S. could be as much as 5.7°F warmer, and extreme weather events, such as heatwaves and drought, could be more intense and occur more frequently. As temperatures warm, evaporation increases, further decreasing water in lakes, reservoirs, and rivers. For example, every degree of warming in the Salt Lake City region could drop the annual water flow of surrounding streams by as much as 6.5 percent—for cities in the western U.S. that rely on cool temperatures to generate snow and rain, warmer weather is bad news. As the U.S. water supply decreases, demand is set to increase. On average, each American uses 80 to 100 gallons of water every day, with the nation’s estimated total daily usage topping 345 billion gallons—enough to sink the state of Rhode Island under a foot of water. By 2100 the U.S. population will have increased by nearly 200 million, with a total population of some 514 million people. Given that we use water for everything, the simple math is that more people mean more water stress across the country. Natural springs like the Morrison Spring, Florida release freshwater from aquifers to feed rivers and other bodies of water. 120 million Americans rely on these ancient subterranean lakes for drinking water, but they’re becoming depleted. And we are already tapping into our reserves. Aquifers, porous rocks and sediment that store vast volumes of water underground, are being drained. Nearly 165 million Americans rely on groundwater for drinking water, farmers use it for irrigation―37 percent of our total water usage is for agriculture—and industry needs it for manufacturing. Groundwater is being pumped faster than it can be naturally replenished. The Central Valley Aquifer in California underlies one of the nation’s most agriculturally productive regions, but it is in drastic decline and has lost about ten cubic miles of water in just four years. Decreasing supply and increasing demand are creating a perfect water storm, the effects of which are already being felt. The Colorado River carved its way 1,450 miles from the Rockies to the Gulf of California for millions of years, but now no longer reaches the sea. In 2018, parts of the Rio Grande recorded their lowest water levels ever; Arizona essentially lives under permanent drought conditions; and in South Florida’s freshwater aquifers are increasingly susceptible to salt water intrusion due to over-extraction. With a potential disaster looming, there are doubts about the effectiveness and environmental impacts of traditional responses, including expanding reservoirs and mining more aquifers. New solutions are needed. Desalination plants can produce as much as 50 million gallons of freshwater a day—California has 11 desalination plants, and another 10 are being planned. But despite costs that are half of what they once were, desalinated water is still about twice as expensive as extracted freshwater. Water transfers from wet to dry regions, such as from the Colorado River basin to California, are another expensive option already in use. Proposals have periodically forwarded to pipe water south from Alaska and Canada, but costs and complexity have prevented any further planning or development. The Atlantic Ocean is a huge source of water, but it’s expensive to process to make it useable. Regardless, desalination plants are springing up across the US in response to a looming water crisis. Perhaps the simplest solution is to use less water. Los Angeles has grown by a million people since the 1970s, but water usage is still the same. Water meters and careful pricing help discourage waste, while fixing aging infrastructure will keep more water in the system—a water mains break in the U.S. approximately every two minutes. In the agriculture sector, reducing irrigation by as little as two percent could avert shortages in one-third of the affected basins; farmers could save water by using drip irrigation, soil moisture sensors, and planting more drought-resistant crops. And every American can save more water at home in multiple ways, from taking shorter showers to not rinsing dishes under a running faucet before loading them into a dishwasher, a practice that wastes around 20 gallons of water for each load. These are such small actions, but taken by many, they could amount to the biggest water savings―and we’re going to need every drop.

## PLAN

#### The USFG should pass an amendment to the Clean Water Act using the powers provided by the 1972 Clean Water Act, including

1. Substantially increasing funding for Section 319 grants
2. Increasing spending on Geographic Programs
3. Increasing spending for the Environmental Quality incentives program
4. Amending EQIP to support projects that reduce nutrient and sediment runoff
5. Doubling funding for the Regional Conservation Partnership Program
6. Increasing funding for Clean Water State Revolving Funds

## Advantage 1 - Warming

#### Industrial agriculture furthers global warming

Sanderson 2021

[Matthew R. Sanderson, social scientist, Kansas State University and Stan Cox, Research Scholar, Ecosphere Studies, The Land Institute, “Big Agriculture Is Leading to Ecological Collapse,” FOREIGN POLICY, 5—17—21, https://foreignpolicy.com/2021/05/17/big-industrialized-agriculture-climate-change-earth-systems-ecological-collapse-policy/, accessed 5-25-21] \*card edited for ableist language\*

Today, there is more carbon dioxide in the atmosphere than at any point in the past 3.6 million years. On April 5, atmospheric carbon dioxide exceeded 420 parts per million—marking nearly the halfway point toward doubling the carbon dioxide levels measured prior to the Industrial Revolution, a mere 171 years ago. Even amid a pandemic-induced economic shutdown—during which global annual emissions dropped 7 percent—carbon dioxide and methane levels set **records in 2020**. The last time Earth held this much carbon dioxide in its atmosphere, sea levels were nearly 80 feet higher and the planet was 7 degrees Fahrenheit warmer. The catch: Homo sapiens did not yet exist. Change is in the air. U.S. Director of National Intelligence Avril Haines announced climate change is “at the center of the country’s national security and foreign policy.” Business-as-usual is no longer a viable strategy as more institutions consider a future that will look and feel much different. In this context, it is striking to read a recent piece in Foreign Policy arguing “big agriculture is best.” “Big agriculture is best” cannot be an argument supported by empirical evidence. By now, it is vitally clear that Earth systems—the atmosphere, oceans, soils, and biosphere—are in various phases of collapse, putting nearly one-half of the world’s gross domestic product at risk and undermining the planet’s ability to support life. And big, industrialized agriculture—promoted by U.S. foreign and domestic policy—lies at the heart of the multiple connected crises we are confronting as a species. The litany of industrial agriculture’s toll is long and diverse. Consider the effects of industrial animal agriculture, for example. As of this writing, animal agriculture accounts for 14.5 percent of total anthropogenic greenhouse gas emissions annually. It is also the source of 60 percent of all nitrous oxide and 50 percent of all methane emissions, which have 36 times and 298 times, respectively, the warming potential of carbon dioxide. As industrial animal agriculture has scaled up, agricultural emissions of methane and nitrous oxide have been going in one direction only: up. Efforts to scale industrial agriculture are undermining the planet’s capacity to support life at more local scales too. Consider Brazil, home to the Amazon Rainforest, which makes up 40 percent of all remaining rainforest and 25 percent of all terrestrial biodiversity on Earth. Forest loss and species extinctions have only increased as industrial agriculture has scaled up in Brazil. Farmers are burning unprecedented amounts of forest to expand their operations in pursuit of an industrial model. In August 2019, smoke blocked the sun in São Paulo, Brazil, 2,000 miles away from the fires in the state of Amazonas. In India, the pace of agricultural industrialization is hastening as indicated by rising agricultural production and declining employment in agriculture, which now accounts for less than one-half of India’s workforce. Agriculture has been scaled with all the tools of the Green Revolution: a high-input farming system comprised of genetically modified seeds and accompanying synthetic fertilizers and pesticides. As agriculture has industrialized in India, the use of pesticides and fertilizers has risen as well. Although it has become more difficult to breathe the air in Brazil, it has become harder to find clean freshwater in India, where pesticide contamination is rising. There, the costs of the industrial agriculture model are plainly ecological and human: Unable to drink the water or pay back the loans they took out to finance their transition to industrial farming, an alarming number of Indian farmers are drinking pesticides instead. Almost a quarter-million Indian farmers have died by suicide since 2000, and 10,281 farmers and farm laborers killed themselves in 2019 alone. In Punjab, the country’s breadbasket, environmental destruction coexists with a raging opioid epidemic ensnaring nearly two-thirds of households in the state. If the events in Brazil and India sound familiar to U.S. readers, it is because there are analogous stories in the United States—where industrial agriculture is rendering entire landscapes uninhabitable. The U.S. Corn Belt, which spans the region from Ohio to Nebraska, produces 75 percent of the country’s corn, but around 35 percent of the region has completely lost its topsoil. Industrial agriculture has been pursued with special zeal in Iowa, where there are 25 million hogs and 3 million people. There, water from the Raccoon River enters the state capital of Des Moines—home to 550,000 people—with nitrates, phosphorus, and bacteria that have exceeded federal safe water drinking standards. At a larger scale, nutrient runoff from industrial agriculture in the U.S. Midwest has created an annual dead zone—a hypoxic area low in or devoid of oxygen—that is the size of Massachusetts. The ecological consequences of industrial agriculture manifest alongside a growing human toll. Rural communities are experiencing rising suicide rates, especially among young people, along with increases in “deaths of despair” from alcohol and drugs—an expanding human dead zone. Although tragic, these outcomes are neither inevitable nor natural. They are outcomes of U.S. policy choices. Industrialized agriculture has been a hallmark of U.S. foreign policy in the post-World War II era. Under the guise of development for all and the mantra of “feed the world,” the United States has used policy to dump surplus grain in low-income countries—undermining markets for smallholder farmers—and cultivate foreign markets as importers of high-input, industrial agriculture technologies to scale agriculture. At home, federal policy since the 1970s has explicitly promoted scaling industrial agriculture through the “get big or get out” imperative. Society did not arrive at this precipice because agriculture was too small or because industrialized agriculture respected the laws of physics. Instead, we are peering into an abyss of systemic socioecological collapse because every effort has been made to use industrialization to break through all known ecological and human limitations to scaling agriculture.

**Warming causes global extinction of multiple species**

Ng 2019 – Yew-Kwang, professor of economics, Nanyang Technological University and will join the School of Economics and a fellow of the Academy of Social Sciences in Australia and a member of Advisory Board, “KEYNOTE: Global Extinction and Animal Welfare: Two Priorities for Effective Altruism” Global Priorities Institute, Oxford University, https://doi.org/10.1111/1758-5899.12647, 02-07-2019 pbr/msdi21

Catastrophic climate change Though by no means certain, CCC causing global extinction is possible due to interrelated factors of non-linearity, cascading effects, positive feedbacks, multiplicative factors, critical thresholds and tipping points (e.g. Barnosky and Hadly, 2016; Belaia et al., 2017; Buldyrev et al., 2010; Grainger, 2017; Hansen and Sato, 2012; IPCC 2014; Kareiva and Carranza, 2018; Osmond and Klausmeier, 2017; Rothman, 2017; Schuur et al., 2015; Sims and Finnoff, 2016; Van Aalst, 2006).7 A possibly imminent tipping point could be in the form of ‘an abrupt ice sheet collapse [that] could cause a rapid sea level rise’ (Baum et al., 2011, p. 399). There are many avenues for positive feedback in global warming, including: the replacement of an ice sea by a liquid ocean surface from melting reduces the reflection and increases the absorption of sunlight, leading to faster warming; the drying of forests from warming increases forest fires and the release of more carbon; and higher ocean temperatures may lead to the release of methane trapped under the ocean floor, producing runaway global warming. Though there are also avenues for negative feedback, the scientific consensus is for an overall net positive feedback (Roe and Baker, 2007). Thus, the Global Challenges Foundation (2017, p. 25) concludes, ‘The world is currently completely unprepared to envisage, and even less deal with, the consequences of CCC’. The threat of sea-level rising from global warming is well known, but there are also other likely and more imminent threats to the survivability of mankind and other living things. For example, Sherwood and Huber (2010) emphasize the adaptability limit to climate change due to heat stress from high environmental wet-bulb temperature. They show that ‘even modest global warming could ... expose large fractions of the [world] population to unprecedented heat stress’ p. 9552 and that with substantial global warming, ‘the area of land rendered uninhabitable by heat stress would dwarf that affected by rising sea level’ p. 9555, making extinction much more likely and the relatively moderate damages estimated by most integrated assessment models unreliably low. While imminent extinction is very unlikely and may not come for a long time even under business as usual, the main point is that we cannot rule it out. Annan and Hargreaves (2011, pp. 434–435) may be right that there is ‘an upper 95 per cent probability limit for S [temperature increase] ... to lie close to 4°C, and certainly well below 6°C’. However, probabilities of 5 per cent, 0.5 per cent, 0.05 per cent or even 0.005 per cent of excessive warming and the resulting extinction probabilities cannot be ruled out and are unacceptable. Even if there is only a 1 per cent probability that there is a time bomb in the airplane, you probably want to change your flight. Extinction of the whole world is more important to avoid by literally a trillion times.

#### AND Warming leads to water scarcity

Heggie 2020

Jon, National Geographic Journalist, Why is America running out of water, National Geographic, https://www.nationalgeographic.com/science/article/partner-content-americas-looming-water-crisis#:~:text=Along%20with%20decreasing%20rainfall%20comes,lakes%2C%20reservoirs%2C%20and%20rivers.

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In the agriculture sector, reducing irrigation by as little as two percent could avert shortages in one-third of the affected basins; farmers could save water by using drip irrigation, soil moisture sensors, and planting more drought-resistant crops. And every American can save more water at home in multiple ways, from taking shorter showers to not rinsing dishes under a running faucet before loading them into a dishwasher, a practice that wastes around 20 gallons of water for each load. These are such small actions, but taken by many, they could amount to the biggest water savings―and we’re going to need every drop.

#### Water inefficiency causes short term spikes and long term increases in food prices, triggering food insecurity

Kehl 2020

Jenny Kehl. Global Studies and School of Freshwater Sciences, University of Wisconsin, Milwaukee; Moving beyond the Mirage: Water Scarcity and Agricultural Use Inefficiency in USA, MDPI, doi:10.3390/w12082290

The current patterns of water consumption in the U.S. agricultural landscape are a complex web of regulations, subsidies, market pressures, perverse incentives and regional water stress. The specific problem we are analyzing and exposing with empirical evidence is that, in the current U.S. agricultural landscape, many water-intensive crops are grown in the most water-stressed regions, which is not environmentally or economically sustainable. Water stress decreases food supply and increases food price, including an average 40% increase in the price of staples every five years beginning in the years 2008–2013 [3]. Extreme droughts are also more frequent and more severe, such as the recent “500-year scale” droughts in California and Texas, two of the USA’s largest food producers. Water-use for food production in these regions is already highly inefficient, and is worsening in most regions, rather than improving inefficiency, as water stress expands. The problem is also a function of short-term economic planning for rapid growth and shortsighted use of methods exceeding ecological limits. These dynamics result in water inefficiency [4], hide the actual quantity of water exports [5,6], and jeopardize long-term agricultural capacity, but can be corrected. The U.S. needs to develop a spectrum of policy options [7], based on ecological and political economy factors, to incentivize the transition to water efficiency in agriculture. The primary obstacles to this transition are the lack of empirical evidence, which this study is trying to overcome, and the legacy of subsidies for water and energy that has been distorted to support inefficiency and exacerbate water stress.

#### Food insecurity causes extinction

John Castellaw 17, Teaching Fellow at the College of Business and Global Affairs at the University of Tennessee, on the National Security Advisory Council of the U.S. Global Leadership Coalition, former Chief of Staff for the U.S. Central Command, Lieutenant General, Marine Corps (Ret.), 5/1/2017, “Opinion: Food Security Strategy Is Essential to Our National Security”, 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.

## Advantage 2 – Economy

#### Water pollution costs billions annually

Mateo-Sagasta & Marjani Zadeh, 2018

[Javier Mateo-Sagasta, Senior Researcher, International Water Management Institute and Sara Marjani Zadeh, Food and Agriculture Organization of the United Nations, “Chapter 1. Setting the Scene,” MORE PEOPLE, MORE FOOD, WORSE WATER? A GLOBAL REVIEW OF WATER POLLUTION FROM AGRICULTURE, ed. Mateo-Sagasta, Marjani Zadeh & Turral, Food and Agriculture Organization of the United Nations, International Water Management Institute and CGIAR Research Program on Water, Land, and Ecosystems, 2018, p. 6-7]

The annual costs of water pollution from agriculture exceed billions of dollars. The costs of agricultural pollution are generally non-market externalities, which are borne by society as a whole. Water pollution from agriculture has direct negative impacts on human health, for example, the well-known blue baby syndrome in which high levels of nitrates in water can cause methaemoglobinemia – a potentially fatal illness – in infants. Pesticide accumulation in water and the food chain, with demonstrated ill effects on humans, led to the widespread banning of certain broad-spectrum and persistent pesticides (such as DDT and many organophosphates); however, some of these pesticides are still used in poorer countries, causing acute and likely chronic health effects. Aquatic ecosystems are also affected by agricultural pollution. For example, eutrophication caused by the accumulation of nutrients in lakes and coastal waters has impacts on biodiversity and fisheries (Rabalais et al., 2009). Water-quality degradation may also have severe direct impacts on productive activities, including agriculture itself. For example, dam siltation caused by the mobilization of sediment due to erosion is an increasing challenge (Basson, 2008), which has cost many millions of dollars. Irrigation using saline or brackish water has limited agricultural production on hundreds of thousands of hectares worldwide (Mateo-Sagasta, 2010). A nationwide study in the United States estimated that farm nitrogen pollution costs Americans in the range of US$59–US$340 billion a year (Sobota et al., 2015). In the European Union, van Grinsven et al. (2013) estimated the annual cost of pollution by agricultural nitrogen to be in the range of €35–€230 billion per year. Many of these costs are associated with damages to aquatic ecosystems, deteriorating water quality and the associated human health impacts. Despite data gaps, methodological challenges and limited assessments, the Organisation for Economic Co-operation and Development (OECD) estimated that, in its member countries alone, the environmental and social costs of water pollution caused by agriculture probably exceed billions of dollars annually (OECD, 2012). This is particularly apparent when impacts from other agricultural pollutants (see Chapter 3), beyond nitrogen, are accounted for.

#### Current inefficiencies will cause economic collapse

Jenny Kehl 2020

Global Studies and School of Freshwater Sciences, University of Wisconsin, Milwaukee; Moving beyond the Mirage: Water Scarcity and Agricultural Use Inefficiency in USA, MDPI, doi:10.3390/w12082290

Water scarcity and food security are inextricably linked with environmental sustainability. Agriculture is the largest water user, requiring approximately 70% of all water used in the United States [1] for human production and consumption. With such a high percentage of all water flowing to one sector, we cannot advance environmental sustainability without addressing water inefficiencies in the agricultural sector. Agriculture generates over USD 60 billion per year for the U.S. economy [2]. Yet, food insecurity is worsening at an unprecedented pace, largely as a function of water scarcity and use inefficiency. The main factor of food insecurity in the U.S. is the large quantity of water-intensive crops grown in regions with extreme levels of water stress. This is arguably the most widespread inefficient use of water in agriculture as it spans across the country and includes the crops of the greatest production volume and highest monetary value. It is also the least environmentally sustainable inefficiency; growing water-intensive crops in water stressed regions obviously further exacerbates existing water scarcity. Significant segments of the U.S. agricultural production system are no longer environmentally or economically sustainable, they need to be reorganized to reduce water stress, increase food security, maintain economic viability, and to preserve the water resources and ecosystem services upon which the agricultural system ultimately depends. As several of the most extremely water-stressed regions of the U.S. are pressed to produce the most water-intensive crops, mighty rivers such as the Colorado and expansive aquifers such as the Ogallala are being depleted at non-renewable rates. The purpose of this research is to provide empirical evidence that agriculture needs to be restructured to adjust for water inefficiencies that are not environmentally sustainable and will eventually lead to the economic collapse of regions that depend on high-volume, high-value cash crops. This research identifies water-use inefficiences for the four major agricultural crops of highest volume and value for the U.S. economy: wheat, soybeans, corn, and cotton, all of which are highly water intensive crops. The data are used to locate areas where water-intensive crops are grown in large quantities in water stressed regions. The data results are represented in Geographic Information System (GIS) maps of graduated levels of water stress overlaid with the quantity of water-intensive commodities produced in that region, followed by analysis and discussion.

#### Economic collapse causes world war

Sundaram 2019   
[Jomo Kwame Sundaram, a former economics professor, was United Nations Assistant Secretary-General for Economic Development, and received the Wassily Leontief Prize for Advancing the Frontiers of Economic Thought in 2007. Vladimir Popov, a former senior economics researcher in the Soviet Union, Russia and the United Nations Secretariat, is now Research Director at the Dialogue of Civilizations Research Institute in Berlin. Economic Crisis Can Trigger World War. February 12, 2019. www.ipsnews.net/2019/02/economic-crisis-can-trigger-world-war/]

KUALA LUMPUR and BERLIN, Feb 12 2019 (IPS) - Economic recovery efforts since the 2008-2009 global financial crisis have mainly depended on unconventional monetary policies. As fears rise of yet another international financial crisis, there are growing concerns about the increased possibility of large-scale military conflict. More worryingly, in the current political landscape, prolonged economic crisis, combined with rising economic inequality, chauvinistic ethno-populism as well as aggressive jingoist rhetoric, including threats, could easily spin out of control and ‘morph’ into military conflict, and worse, world war. Crisis responses limited The 2008-2009 global financial crisis almost ‘bankrupted’ governments and caused systemic collapse. Policymakers managed to pull the world economy from the brink, but soon switched from counter-cyclical fiscal efforts to unconventional monetary measures, primarily ‘quantitative easing’ and very low, if not negative real interest rates. But while these monetary interventions averted realization of the worst fears at the time by turning the US economy around, they did little to address underlying economic weaknesses, largely due to the ascendance of finance in recent decades at the expense of the real economy. Since then, despite promising to do so, policymakers have not seriously pursued, let alone achieved, such needed reforms. Instead, ostensible structural reformers have taken advantage of the crisis to pursue largely irrelevant efforts to further ‘casualize’ labour markets. This lack of structural reform has meant that the unprecedented liquidity central banks injected into economies has not been well allocated to stimulate resurgence of the real economy. From bust to bubble Instead, easy credit raised asset prices to levels even higher than those prevailing before 2008. US house prices are now 8% more than at the peak of the property bubble in 2006, while its price-to-earnings ratio in late 2018 was even higher than in 2008 and in 1929, when the Wall Street Crash precipitated the Great Depression. As monetary tightening checks asset price bubbles, another economic crisis — possibly more severe than the last, as the economy has become less responsive to such blunt monetary interventions — is considered likely. A decade of such unconventional monetary policies, with very low interest rates, has greatly depleted their ability to revive the economy. The implications beyond the economy of such developments and policy responses are already being seen. Prolonged economic distress has worsened public antipathy towards the culturally alien — not only abroad, but also within. Thus, another round of economic stress is deemed likely to foment unrest, conflict, even war as it is blamed on the foreign. International trade shrank by two-thirds within half a decade after the US passed the Smoot-Hawley Tariff Act in 1930, at the start of the Great Depression, ostensibly to protect American workers and farmers from foreign competition! Liberalization’s discontents Rising economic insecurity, inequalities and deprivation are expected to strengthen ethno-populist and jingoistic nationalist sentiments, and increase social tensions and turmoil, especially among the growing precariat and others who feel vulnerable or threatened. Thus, ethno-populist inspired chauvinistic nationalism may exacerbate tensions, leading to conflicts and tensions among countries, as in the 1930s. Opportunistic leaders have been blaming such misfortunes on outsiders and may seek to reverse policies associated with the perceived causes, such as ‘globalist’ economic liberalization. Policies which successfully check such problems may reduce social tensions, as well as the likelihood of social turmoil and conflict, including among countries. However, these may also inadvertently exacerbate problems. The recent spread of anti-globalization sentiment appears correlated to slow, if not negative per capita income growth and increased economic inequality. To be sure, globalization and liberalization are statistically associated with growing economic inequality and rising ethno-populism. Declining real incomes and growing economic insecurity have apparently strengthened ethno-populism and nationalistic chauvinism, threatening economic liberalization itself, both within and among countries. Insecurity, populism, conflict Thomas Piketty has argued that a sudden increase in income inequality is often followed by a great crisis. Although causality is difficult to prove, with wealth and income inequality now at historical highs, this should give cause for concern. Of course, other factors also contribute to or exacerbate civil and international tensions, with some due to policies intended for other purposes. Nevertheless, even if unintended, such developments could inadvertently catalyse future crises and conflicts. Publics often have good reason to be restless, if not angry, but the emotional appeals of ethno-populism and jingoistic nationalism are leading to chauvinistic policy measures which only make things worse. At the international level, despite the world’s unprecedented and still growing interconnectedness, multilateralism is increasingly being eschewed as the US increasingly resorts to unilateral, sovereigntist policies without bothering to even build coalitions with its usual allies. Avoiding Thucydides’ iceberg Thus, protracted economic distress, economic conflicts or another financial crisis could lead to military confrontation by the protagonists, even if unintended. Less than a decade after the Great Depression started, the Second World War had begun as the Axis powers challenged the earlier entrenched colonial powers.

## Solvency

#### The plan is key to solving nonpoint source pollution and fixing agricultural inefficiencies

**DeGood 2020**

[Kevin DeGood, Director, Infrastructure Policy, CAP, “A Call to Action on Combating Nonpoint Source and Stormwater Pollution,” Center for American Progress, 10—27—20, https://www.americanprogress.org/issues/economy/reports/2020/10/27/492149/call-action-combating-nonpoint-source-stormwater-pollution/, accessed 3-19-21]

Using the CWA and funding to the fullest Setting a total maximum daily load for the Maumee River or even an aggressive binational target such as the 40 percent phosphorus reduction for Lake Erie would only be meaningful if there were adequate funding and political will to drive implementation over time. At present, there is neither sufficient funding nor the political will to achieve the goals of the Clean Water Act. A 2008 report produced jointly by state water associations and staff from the U.S. Environmental Protection Agency shows the perils of continuing with a business-as-usual approach: Continuing the status quo, on the other hand, will ensure increasingly degraded ecosystems, lost aquatic habitat and species diversity, abandonment of water quality standards in vulnerable watersheds, increased drinking water risks, and the greater future costs associated with lost economic opportunity, vanishing recreational resources, and increased treatment, recovery and restoration.103 These words apply to the U.S. EPA as much as to state and local governments. The CWA provides the agency with substantial legal authority to drive water quality improvements—especially the authority to reject inadequate state water quality standards and pollution control plans as well as impaired waters lists that have clear omissions. As the Lake Erie example in Ohio demonstrates, when the EPA asserts its authority, it can catalyze a long-overdue impairment listing and TMDL plan. For regional and national water bodies with persistent impairment challenges, including but not limited to phosphorus, nitrogen, and sediment, the U.S. EPA should require states to establish quantitative water quality criteria that ratchet down over time. Each state within the watershed would be responsible for revising its pollution control plan to achieve aggressive quantitative targets, including quickly developing TMDLs. At a minimum, the EPA should require that each state submit an updated plan showing how it would reduce pollutant loading in proportion to state contributions as determined from a three-year baseline period. For states that fail to submit sufficiently aggressive pollution control plans, the EPA should use its authority to write plans and revoke state primacy for CWA implementation. The 2012 Great Lakes Water Quality Agreement and subsequent U.S. Action Plan for Lake Erie serve as rough templates for how the U.S. EPA should set goals and push states to make progress around the country. The agreement sets a numeric goal of reducing total phosphorus by 40 percent through proportional reduction commitments by the United States and Canada. For instance, to achieve shared water quality goals in the Central Basin of Lake Erie, the United States committed to reducing its annual total phosphorus load by 3,316 tons and Canada committed to a reduction of 212 metric tons.104 To date, The United States has not made measurable progress on its phosphorus reduction goal for Lake Erie.105 A central challenge for the GLWQA—and water quality standards generally—is that “[a]doption of agricultural management practices to control phosphorus losses are reliant on voluntary actions by farmers.”106 Because the CWA does not regulate nonpoint source pollution the way it does point sources, any successful plan to meet water quality standards will rely heavily on voluntary actions induced by sizable financial incentives. In this case, the financial incentives should come primarily from Washington with a state match. \* First, Congress must substantially increase funding for the Section 319 grant program from its current level of $165 million to at least $1 billion, with 15 percent of funds set aside for competitive distribution to those states making the most progress toward achieving national water quality standards. \* Second, Congress should increase spending on Geographic Programs from its current level of $510 million to $1 billion annually.107 \* Third, Congress should increase spending for the Environmental Quality Incentives Program at the U.S. Department of Agriculture to $7 billion annually, with $200 million set aside for Conservation Innovation Grants. Additionally, EQIP should be amended to require that not less than 35 percent of funds go to projects explicitly designed to reduce nutrient and sediment runoff from agricultural lands. \* Fourth, Congress should double funding for the Regional Conservation Partnership Program from its current level of $300 million annually to $600 million, with at least 35 percent of funds set aside for projects primarily intended to improve water quality.108 \* Fifth, Congress should increase funding for Clean Water State Revolving Funds from $1.6 billion to $10 billion annually. States should be required to distribute 20 percent of the capitalization as grants to wastewater authorities in disadvantaged communities facing the greatest need. Additionally, 20 percent of the capitalization should be set aside for green infrastructure projects. These amounts may seem like a lot, but it’s essential to remember the economic value of clean water. For instance, in FY 2020, the Great Lakes Restoration Initiative (GLRI) provided $320 million, which is a modest sum compared with the economic value of the Great Lakes and the economies connected to them.109 A report by the U.S. EPA states that the economic value of recreation, tourism, and fishing tied to Lake Erie alone is $12 billion annually, or 37 times more than the GLRI expenditure.110 Moreover, the collective annual economic output of the Great Lakes states is just shy of $6 trillion annually.111 In addition to carrots, Congress must also be willing to bring a few sticks, including either reducing a state’s share of Geographic Programs, EQIP, RCPP, and CWSRF grant funds or raising the state’s matching requirement. For instance, if a state within the Great Lakes region fails to meet its pollution control targets, the EPA should reduce its share of GLRI grant funds under the Geographic Programs subaccount. Under federal law, Section 319 grant funds “shall not exceed 60 percent” of the total cost of a state’s nonpoint source management program.112 For states that fail to make adequate progress, the state match should be raised to 50 percent. And five years after implementation of the cost-share penalty, if the state has still not made adequate progress on water quality goals, the state share should be raised to 60 percent. Similarly, CWSRFs require states to provide a 20 percent match.113 Again, for states that fail to make adequate progress, the match should be raised to 25 percent. If after five years water quality has still not improved sufficiently, the state match should be raised to 35 percent. Taken together, these investments, combined with more aggressively leveraging existing authority under the CWA, will deliver more rapid and substantial water quality improvements, leading to healthier communities and sustainable economic growth. Conclusion It’s easy to take water for granted. After all, lakes and rivers are ancient bodies that change imperceptibly over eons. For many people, water is something that’s just there. Typically, public and political attention around water pollution spikes in response to acute events, such as harmful algal blooms that threaten drinking water supplies and jobs tied to tourism and fishing. When the public health or economic threat subsides, the political will to sustain pollution control measures that would lead to meaningful water quality improvements tends to wane. This is where pressure from Washington comes into play. The Clean Water Act—and Congress’ power of the purse—provide the U.S. Environmental Protection Agency with substantial authority to hold states accountable for achieving real water quality improvements over time. Through a combination of carrots and sticks, the federal government can provide a sustained focus on reducing water pollution that transcends the typical boom-and-bust public and political attention cycles. Clean water is essential to the United States’ economy, public health, and environmental sustainability. Yet it won’t happen on its own. Water requires stewardship. The twin forces of population growth and global climate change will further degrade precious water resources unless the federal government takes a more aggressive leadership role, leveraging its fiscal resources and legal authority to elevate the issue week after week, month after month, and year after year.

#### Mandates like the plan are key to creating sustainable agriculture practices and curbing warming

Negowetti 2017

[Nicole Negowetti, Policy Director, The Good Food Institute and former Associate Professor, Law, Valparaiso University, “Exposing the Invisible Costs of Commercial Agriculture: Shaping Policies with True Costs Accounting to Create a Sustainable Food Future,” VALPARAISO UNIVERSITY LAW REVIEW v. 51 n. 2, 2017, p. 474-482]

E. Informing Agricultural Policymaking with True Costs Accounting mUnderstanding the actual impacts of industrial agriculture would be useful for pricing water and fertilizer, which will help to accurately reflect the true economic and environmental costs of these inputs.229 Such an approach encourages use that is appropriate in terms of economics and sustainability.230 Patrick Holden offers a striking example of how failure to properly account for the costs of industrial agriculture not only affects consumer behavior, but also influences farming decisions: One ton of ammonium nitrate costs a U.S. farmer about US$387. The benefit to the farmer is between US$666 and US$2,666 per U.S. ton, but the negative costs—the damage to the environment, pollution, human health, depletion of natural capital—are between US$990 and US$5,172 per U.S. ton of ammonium nitrate. So in other words, if the damage done was charged to the farmer or the nitrogen fertilizer manufacturer, it would completely cancel out the business case for using it and transform agriculture all over the world, but that’s not happening.231 Understanding the dollar value of environmental harm associated with industrial agriculture would assist policymakers in accurately evaluating the justifications for subsidies and other support programs and would better explain environmental harms to the public.232 The emerging data assigning actual costs of industrial commodity crop production should be guiding considerations for agricultural policymakers.233 The current agricultural policies in the United States support unsustainable food production by promoting large-scale industrialized commodity crop growing.234 For example, the Farm Bill has provided a variety of subsidy vehicles, such as direct payments and crop insurance payments to commodity crop producers.235 However, an accurate understanding and accounting of the external costs of our food system, governments and policymakers can craft appropriate policies such as subsidies, incentives, and taxes to farmers and producers to increase transparency in our food system. According to Olivier De Schutter, former United Nations Special Rapporteur, on the right to food, “governments have few sources of leverage over increasingly globalized food systems–but public procurement is one of them. When sourcing food for schools, hospitals[,] and public administrations, governments have a rare opportunity to support more nutritious diets and more sustainable food systems in one fell swoop.”236 Reforms to the current hands–off approach regarding commodity crop production’s environmental impacts should be guided by the goal of achieving a sustainable food system.237 As defined by the 1990 Farm Bill, sustainable agriculture is: [A]n integrated system of plant and animal production practices having a site-specific application that will, over the long term, satisfy human food and fiber needs; enhance environmental quality and the natural resources base upon which the agricultural economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; and enhance the quality of life for farmers and society as a whole.238 The term “sustainable agriculture” is generally focused on obtaining and maintaining three main objectives: environmental health, economic profitability, and social and economic equity.239 The Union of Concerned Scientists explains that sustainable agriculture views a farm as a type of ecosystem, an agroecosystem, made up of elements like soil, plants, insects, and animals, and when taken together, can produce high yields and profits for farmers while protecting human health, animal health, and the environment.240 Although defined and explained in various ways, “the underlying principle of sustainability is the desire to meet current needs of society while still preserving sufficient resources for future generations to meet their needs.”241 Current agricultural practices utilize the equivalent of 1.5 planets to provide the resources we use to help absorb our waste.242 However, these demands on natural resources are clearly unsustainable and threaten the ability of our planet to accommodate future generations.243 Creating a sustainable food system necessarily requires consideration of modern agriculture’s impact on land, water, and biodiversity, and account for the contribution of agriculture on climate change.244 As aptly stated by Nadia El–Hage Scialabba, Food and Agriculture Organization Senior Natural Resources Officer: Unveiling the hidden costs of mainstream agriculture is necessary to convince decision-makers that investing in conversion to sustainable food and agriculture systems is a much cheaper option than current expenditures for environmental mitigation and public health. True food prices entail reflecting producers’ efforts to meet their needs for the time required to reproduce the value, while the cost of environmental damage should not [be] paid by society through higher food prices but by those who irresponsibly abuse common goods offered by our natural environment.245 True cost accounting is a critical piece of any analysis of sustainability because distorted costs—lack of consideration of the tremendous environmental effects—continue to justify exclusions from environmental laws and government incentives in support of such practices.246 The result is the consumer paying a price for food products at the store, through taxes in the form of government subsidies, and again in the destruction of the environment.247 To achieve sustainability in agriculture, governments must implement regulatory and incentive-based tools to require such practices.248 The ultimate (and daunting) challenge is to revise current policies to ensure an affordable and healthful food supply while creating an agricultural system that is environmentally, economically, and socially sustainable.249 Rather than merely incorporating true-cost into the retail price of food product, true-cost accounting calls for “policy initiatives, and a range of incentives, taxes, and subsidy redistribution” to promote sustainable farming practices and ensure that those polluting pay more than those who are utilizing more environmentally-friendly measures.250 Certainly, one solution would be to amend key environmental laws to minimize or eliminate the exemptions from coverage that are currently afforded to large-scale commodity crop operations to ensure that agricultural impacts to the environment are regulated “to the same extent and with the same standards as other industrial operations.”251 However advantageous such an approach may be, it is impractical, considering the current economic and political landscape, to expect new legislation to thoroughly address pollution from commodity crop production.252 nIn consideration of the environmental effects of industrial commodity crop production, several scholars and commentators have proposed reforms to agricultural policy, focusing primarily on the Farm Bill.253 In particular, the proposals focus on two categories of reforms: first, to the Farm Bill’s subsidy programs, and second, a mandatory disclosure of the agri-chemicals used in crop production.254 The goal of these measures is the same—to encourage farmers to use less fertilizers and instead incorporate more sustainable practices.255 The following sections briefly summarize those proposals.256

1. Subsidy Reforms

According to Professor Mary Jane Angelo, addressing the environmental effects of modern agricultural practices will require: dramatic shift to a more sustainable system of agriculture. To accomplish such a transformative shift, mere tinkering with existing regulatory regimes will not be sufficient. A complete overhaul of existing agricultural policy is warranted, and a significant component of such an overhaul would be a complete rethinking of commodity subsidy programs.257 In the United States and in other industrialized countries, subsidies are predominately provided to farmers who grow commodity crops, such as corn and soy.258 Annual agricultural subsidies in the United States for commodity crops, such as corn and soybeans, are $3.52 billion and $1.56 billion respectively, while all fruit and vegetable subsidies are only $0.37 billion.259 As discussed above, production of these crops on an industrial scale has devastating environmental effects.260 To bring about true cost accounting, subsidies should be redirected towards sustainable farmers who minimize negative externalities.261 Several commentators have recommended variations of “conservation compliance,” requiring large-scale commodity crop operations that choose to accept federal subsidy payments to assume responsibility for implementing stewardship practices.262 The 2014 Farm Bill included Highly Erodible Land Conservation (“HELC”) and Wetland Conservation (“WC”) provisions applicable to all land that is considered highly erodible or a wetland to reduce soil loss and to protect wetlands.263 Crop producers are now required to adopt basic soil conservation measures to obtain crop insurance subsidies.264 To comply with these provisions, crop producers are prohibited from planting or producing an agricultural commodity on highly erodible land unless they comply with an NRCS approved conservation plan or system, plant or produce commodity crop on converted wetland, or convert a wetland to produce a crop.265 While labeled a victory by some environmentalists, others criticize the provisions for only partially addressing the environmental consequences of large-scale commodity crop production.266 For example, Breggin and Myers argue that the measure “[sets] the bar too low” by addressing only sediment pollution, while ignoring nutrient and pesticide pollution resulting from commodity crop operations.267 The authors also propose that “large-scale commodity crops” adopt baseline stewardship measures for nutrient pollution that have been implemented, which are “appropriate to the particular crop, geography, climate, and other local circumstances of the operation.”268 Professor Angelo has also argued in support of extensive subsidy reforms and has proposed a system that ties subsidy levels to the adoption by farmers of different levels of sustainable practices.269 A tiered system could be created where large-scale commodity crop growers would “reduce their use of fertilizers, pesticides, and water, and employ certain best management practices to limit erosion, depletion of organic matter in soils, contamination of ground and surfacewater, and harm to surrounding biodiversity, receive a tier-one level of subsidy.”270 Growers who meet existing United States Department of Agriculture (“USDA”) organic certification standards could receive a higher level of subsidy.271 This subsidy would reward organic growers by encouraging more growers to produce organic crops, which would lower consumer prices, and thus increase consumer demand for these products.272 A third tier of subsidies could also be provided to growers who do not meet organic standards, but engage in identified sustainable practices.273 Another proposal involves the use of progressive tax rates assigned to farms using chemicals in excess of the desired threshold and farms using chemicals below the target level would be rewarded through decreased taxes or subsidies.274 According to Professor C. Ford Runge, imposing a negative pollution tax could reduce the use of chemical inputs on farms.275 The French Ministry of the Environment recommended such a tax on pesticides and fertilizers that would be imposed directly on farmers and adjusted based on the environmental toxicity of each chemical.276 Based on maximum acceptable levels of each chemical input—determined by a set crop on a regional basis—tax revenues would be refunded to farmers who use less than the maximum amount.277 To incentivize organic farmers who use no chemicals, they would receive a payment equal to farmers who use chemicals up to the ceilings.278 This tax system would address chemical use on every farm in an economically and administratively efficient way.279

2. Disclosure Professor Ruhl has proposed the adoption of a “Farm Release Inventory,” an approach similar to the TRI, which would require farms to publicly report releases to regarding the quantity, type, and timing of fertilizers they apply.280 Experience with the TRI has shown that simply requiring industrial operations to report to the public the types and amount of toxic releases from industrial facilities results in significant reductions of toxic releases, in part because the industry will voluntarily reduce its emissions to avoid being seen as the “bad neighbor,” and in part because citizens often use the information to put political pressure on the industry to find ways to reduce releases or substitute less toxic materials.281 Breggin and Myers have also supported this proposal and argue that large crop operations should publicly disclose information about their application of agricultural chemicals in exchange for receipt of any form of federal farm subsidy.282 Documentation of the actual amounts of agricultural chemicals used will increase public access to information on the sources and quantities of chemical pollution potentially entering surface waters and groundwater, while at the same time helping to discourage practices that result in the overuse of fertilizers and pesticides through penalties.283

III. CONCLUSION Obtaining more accurate and comprehensive data about the true costs of industrial commodity crop production should be a key priority of agencies, such as the EPA and USDA. Such information would be valuable to policymakers to enact measures to appropriately address pollution from commodity crop producers. Achieving a sustainable food system—one that meets the current needs of society while still preserving sufficient resources for future generations—demands an accurate assessment of all significant externalities of our modern agriculture. Furthermore, agricultural producers, businesses, and government agencies must take true cost accounting into consideration when shaping agricultural policies.

# A2 BLOCKS