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"Free the Land": A Call for Local Governments to Address Climate-Induced Food Insecurity in Environmental Justice Communities

Liza Guerra Garcia

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“FREE THE LAND”¹: A CALL FOR LOCAL GOVERNMENTS TO ADDRESS CLIMATE-INDUCED FOOD INSECURITY IN ENVIRONMENTAL JUSTICE COMMUNITIES

Liza Guerra Garcia[†]

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1. Remembering the words of visionary leader Chokwe Lumumba, the former mayor of Jackson, Mississippi, who died in office on February 25, 2014. A human rights lawyer who came from the Black Revolutionary Movement, he would often be heard opening his speeches, “Free the land!” See Douglas Martin, *Chokwe Lumumba, 66, Dies; Activist Who Became Mayor*, N.Y. TIMES, Feb. 27, 2014, § B, at 19, available at LEXIS.

† Former Legal Analyst for the Center for Earth, Energy & Democracy; JD, William Mitchell College of Law, 2003. In 2007, Garcia was a delegate to the Sixth United Nations Permanent Forum on Indigenous Issues, North American Preparatory Session, and in 2009, she was a participant in the drafting of the Anchorage Declaration at the Indigenous Peoples Global Summit on Climate Change. She has also served as a law clerk to the Honorable Kathleen A. Mottl for the Tenth Judicial District, State of Minnesota. She is a member of the United Confederation of Taino People, the indigenous people of Boriken (Puerto Rico). The author extends her appreciation to the *William Mitchell Law Review* editors and staff for their insight and assistance during the drafting of this article.

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I. INTRODUCTION

Food insecurity is one of the greatest threats facing cities determined to adapt to a changing climate. Urban environmental justice communities—indigenous peoples, communities of color, and low-income communities—are particularly vulnerable and will unequally experience the effects of food insecurity caused by climate change. If permitted, this will deepen existing inequalities based on race, ethnicity, and income. State and local governments developing climate-resilient adaptation plans for food security must incorporate policies that concomitantly eliminate disparities within urban environmental justice communities. This includes removing policies that block agricultural development of arable urban land.² Meaningful and equitable access to land and water for affordable food production is essential to ensuring climate resiliency for environmental justice communities.

2. See Sarah B. Schindler, *Of Backyard Chickens and Front Yard Gardens: The Conflict Between Local Governments and Locavores*, 87 TUL. L. REV. 231, 235–36 (2012) (“Localities used their police powers, acting in the interest of the public health, safety, welfare, and morals, to zone agricultural uses out of residential areas. . . . Now, as conceptions of harm are changing, localities can use those same police powers that originally justified bans on urban agriculture to instead justify more permissive uses of residential property for agricultural purposes to further broader public health and welfare goals.”).

This article reviews the intersection of projected climate change impacts with existing disparities among Minnesota's environmental justice communities and how land use policies and laws must respond to projected food insecurity within these communities.

II. CLIMATE CHANGE

Humanity is at a crossroads where a global collective decision about preserving human life and ecosystems rests in the hands of an elite group of political and private actors.³ For those legal scholars, practitioners, and others who continue to debate the contours of climate change, this article is aligned with the latest science and not the politick. An overwhelming consensus of scientists⁴ maintain that emissions of greenhouse gases (GHG)⁵ at

3. See Suzanne Goldenberg, *Just 90 Companies Caused Two-Thirds of Man-Made Global Warming Emissions*, GUARDIAN (Nov. 20, 2013, 11:07 AM), <http://www.theguardian.com/environment/2013/nov/20/90-companies-man-made-global-warming-emissions-climate-change>.

4. See *The Scientific Consensus on Climate Change*, WEATHER UNDERGROUND, <http://www.wunderground.com/resources/climate/928.asp> (last visited Nov. 7, 2014) ("Over 95% of actively publishing climate scientists agree that the earth is warming and that human activity is the cause."); see also Christopher B. Field et al., Intergovernmental Panel on Climate Change, *Summary for Policymakers*, in CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY: CONTRIBUTION OF WORKING GROUP II TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1-32 (C.B. Field et al. eds., 2014) [hereinafter WORKING GROUP II REPORT]. Dr. Michel Jarraud, Secretary-General of the World Meteorological Organization (Working Group II), stated that this report is the "biggest scientific assessment in the whole history of scientific discipline ever." Michel Jarraud, Sec'y-Gen., World Meteorological Org., Press Conference at the 38th Session of the Intergovernmental Panel on Climate Change (IPCC) in Yokohama (Mar. 31, 2014), http://www.ipcc.ch/news_and_events/press_information.shtml (follow "Webcast of IPC press conference" hyperlink) (discussion at minutes 9:50 to 10:52). He maintained that the report is the most solid evidence one can get from any scientific discipline. *Id.* The report was based on more than 12,000 peer-reviewed scientific studies. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, WORKING GROUP II FACT SHEET: CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY (2014).

5. The term "greenhouse gas" has been defined by various academic and government institutions, but the general consensus is that it is "[a] gas which, like a greenhouse window, allows sunlight to enter and then prevents heat from escaping—in this case, from Earth's atmosphere. The most common greenhouse gases are water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), halocarbons, and ozone (O₃)." THE NAT'L ACAD. OF SCI., WHAT YOU NEED

their current rate must be halted to preserve what is left of the atmosphere and permit the earth—and its ecosystems, humanity, and the biodiversity of plant and animal life⁶—a fighting chance to survive. If the current greenhouse emission trajectory continues unchecked, destruction that has not been seen on planet Earth since the last great extinction is likely to ensue.⁷

Society can “no longer plead ignorance” of climate science.⁸ If society does not deal with the climate crisis, the law will become meaningless. Thus, called to address an unprecedented climate challenge, local, regional, and national laws and policies must equitably address not only climate mitigation,⁹ but adaptation¹⁰ and resiliency¹¹ within communities throughout the country.

TO KNOW ABOUT ENERGY Glossary (2008), *available at* <http://needtoknow.nas.edu/energy/glossary/index.php>; *see, e.g.*, 36 U.S.C. § 150301 (2012) (providing a congressional grant of power to the National Academy of Sciences).

6. Rosemary Lyster, *Adaptation and Climate Justice*, in RESEARCH HANDBOOK ON CLIMATE CHANGE ADAPTATION LAW 32, 36 (Jonathan Verschuuren ed., 2013) (“[A]ccording to the IPCC there is high confidence that climate change will result in extinction of many species and reduce the diversity of ecosystems, partly because the expected rapid rate of climate change outpaces the resiliency of many such systems.”).

7. *See, e.g.*, Anthony D. Barnosky et al., *Has the Earth’s Sixth Mass Extinction Already Arrived?*, 471 NATURE 51, 51 (2011); Rodolfo Dirzo et al., *Defaunation in the Anthropocene*, 345 SCIENCE 401 (2014); Seth Borenstein, *World on Brink of Sixth Great Extinction, Species Disappearing Faster than Ever Before*, HUFFINGTON POST, http://www.huffingtonpost.com/2014/05/29/sixth-great-extinction-species-disappearing_n_5412571.html (last updated July 29, 2014, 5:59 AM).

8. Jarraud, *supra* note 4 (discussion at minutes 10:30 to 11:40).

9. *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, RENEWABLE ENERGY SOURCES AND CLIMATE CHANGE MITIGATION: SPECIAL REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Ottmar Edenhofer et al. eds., 2012); Gabriel Blanco et al., Intergovernmental Panel on Climate Change, *Drivers, Trends and Mitigation*, in CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE: CONTRIBUTION OF WORKING GROUP III TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 567 (Ottmar Edenhofer et al. eds., 2014); Henry D. Jacoby et al., U.S. Global Change Research Program, *Mitigation*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT 648–60 (Jerry Melillo et al. eds., 2014) [hereinafter CLIMATE CHANGE IMPACTS IN THE UNITED STATES].

10. The federal government has defined “adaptation” as the “adjustment in natural or human systems in anticipation of or response to a changing environment in a way that effectively uses beneficial opportunities or reduces negative effects.” Exec. Order No. 13,653 § 8(b), 78 Fed. Reg. 66,819, 66,822 (Nov. 1, 2013). The IPCC similarly defines “adaptation” as “the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit

A. *The Science of Climate Change*

Greenhouse gases are the single greatest cause of anthropogenic climate change.¹² The largest emitters of GHGs are fossil fuel companies—those that produce, manufacture, or sell oil, gas, or coal.¹³ Other significant sources of GHGs include iron, steel, and cement production and agriculture.¹⁴ Human activities emitting levels of GHGs into the earth's atmosphere instigates the

beneficial opportunities." Intergovernmental Panel on Climate Change, *Summary for Policymakers*, in *MANAGING THE RISKS OF EXTREME EVENTS AND DISASTERS TO ADVANCE CLIMATE CHANGE ADAPTATION 5* (C.B. Field et al. eds., 2012).

11. "Resilience" is defined as "the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions." Exec. Order No. 13,653 § 8(c), 78 Fed. Reg. at 66,822. The IPCC defines "resilience" as "[t]he ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions." Intergovernmental Panel on Climate Change, *supra* note 10, at 5.

12. "The largest contribution to total radiative forcing is caused by the increase in the atmospheric concentration of CO₂ since 1750." Intergovernmental Panel on Climate Change, *Summary for Policymakers*, in *CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS: CONTRIBUTION OF WORKING GROUP I TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 13* (T.F. Stocker et al. eds., 2013) [hereinafter Intergovernmental Panel on Climate Change, *Summary for Policymakers*]. "Radiative forcing" is a term used to describe the measurement of various factors (like GHGs) and their heat-trapping capacity that pushes the earth away from its natural energy balance. For a description of the radiative forcing and the impact of greenhouse gases in laymen's terms, see Intergovernmental Panel on Climate Change, *FAQ 2.1: How Do Human Activities Contribute to Climate Change and How Do They Compare with Natural Influences?*, in *CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, 2007*, at 100–02 (Susan Solomon, et al. eds., 2007); see also David L. Chandler, *Explained: Radiative Forcing*, MIT NEWS (Mar. 10, 2010), <http://newsoffice.mit.edu/2010/explained-radforce-0309> ("In short, radiative forcing is a direct measure of the amount that the Earth's energy budget is out of balance.").

13. See EPA, *INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2012*, at ES-8 to -9, -12 (2014) (finding that fossil fuel combustion is the principle cause of increased carbon dioxide emissions since 1750); *id.* at iii (stating the national greenhouse gas inventory is submitted to the United Nations in accordance with the Framework Convention on Climate Change).

14. EPA, *supra* note 13, at ES-8 to -9; see also *Climate Change Science Overview*, EPA, <http://www.epa.gov/climatechange/science/overview.html> (last visited Nov. 7, 2014); Intergovernmental Panel on Climate Change, *Summary for Policymakers*, *supra* note 12, at 17–19.

warming of the earth to levels never seen in human history.¹⁵ Because GHGs in the atmosphere trap the earth's radiating heat, average global temperatures have increased, disrupting ecosystems and impacting human lives.¹⁶

B. *Impacts and Projections*

Since 1895, the average temperature in the United States has increased between 1.3 and 1.9 degrees Fahrenheit with most of the increase occurring after 1970.¹⁷ According to the U.S. Global Research Program, “[t]he most recent decade was the nation’s and the world’s hottest on record, and 2012 was the hottest year on record in the continental United States.”¹⁸ Average global temperatures are slated to increase between 2.6 and 4.8 degrees Celsius by the end of the twenty-first century.¹⁹

Globally, Earth’s inhabitants are witnessing increasing temperatures, rising sea levels, heat waves, drought, heavy rainfall, flooding, extreme winds, ocean acidification, desertification, and an overall increase in frequency and intensity of weather events that are directly or indirectly linked to climate change.²⁰ In many regions of the globe, there is likely to be a loss of food production

15. *Overview of the 2014 National Climate Assessment*, U.S. GLOBAL CHANGE RES. PROGRAM, <http://nca2014.globalchange.gov/highlights/overview/overview> (last visited Nov. 13, 2014) [hereinafter *Overview of 2014 Assessment*] (“Many lines of independent evidence demonstrate that the rapid warming of the past half-century is due primarily to human activities.”).

16. Intergovernmental Panel on Climate Change, *Summary for Policymakers*, *supra* note 12, at 17–19; *see also Glossary of Climate Change Terms*, EPA, <http://www.epa.gov/climatechange/glossary.html#content> (last visited Nov. 13, 2014). Scientists and others have used the term “climate disruption” to emphasize the rapid and unexpected changes anthropogenic climate change is causing—and is projected to cause—to the earth’s ecosystems and human life activities, implicating energy, transportation, and agriculture. Ian Noble et al., Intergovernmental Panel on Climate Change, *Adaptation Needs and Options*, in WORKING GROUP II REPORT, *supra* note 4, at 847.

17. John Walsh et al., U.S. Global Change Research Program, *Chapter 2: Our Changing Climate*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 9, at 20.

18. *Overview of 2014 Assessment*, *supra* note 15, at 7.

19. RIAN VAN STADEN, UNIV. OF CAMBRIDGE’S INST. FOR SUSTAINABILITY LEADERSHIP & JUDGE BUS. SCH., INT’L COUNSEL FOR LOCAL ENVTL. INITIATIVES, CLIMATE CHANGE: IMPLICATIONS FOR CITIES 2 (2014).

20. Field et al., *supra* note 4, at 1–34.

and productive arable lands.²¹ Climate change is impacting food production²² and is projected to drastically reduce yields of major crops such as wheat, rice, and corn if a temperature rise of two degrees Celsius or more over present-day levels is permitted.²³ After 2050, the risk of more severe impacts will increase depending on the degree of continued warming.²⁴

Severe droughts and wildfires have struck the West and a number of Midwest states.²⁵ Heat waves have become more common and more intense, along with other extreme weather events either caused by or linked to climate change.²⁶ Some animal and plant species have started migrating or are simply dying off.²⁷

21. See VAN STADEN, *supra* note 19, at 506–07; *Overview of 2014 Assessment*, *supra* note 15, at 7.

22. Jerry Hatfield et al., U.S. Global Change Research Program, *Chapter 6: Agriculture*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 9, at 152 (“Climate disruptions to agricultural production have increased in the past 40 years and are projected to increase over the next 25 years. By mid-century and beyond, these impacts will be increasingly negative on most crops and livestock.”).

23. Field et al., *supra* note 4, at 17–19; see also Sara C. Pryor et al., U.S. Global Change Research Program, *Chapter 18: Midwest*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 9, at 420–21.

24. See Pryor et al., *supra* note 23, at 420–21; U.S. Global Change Research Program, *Overview and Report Findings*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 9, at 11.

25. U.S. Global Change Research Program, *supra* note 24, at 9, 11.

26. Walsh et al., *supra* note 17, at 20.

27. See VAN STADEN, *supra* note 19, at 4; Field et al., *supra* note 4, at 4 (“Many terrestrial, freshwater, and marine species have shifted their geographic ranges, seasonal activities, migration patterns, abundances, and species interactions in response to ongoing climate change.”); *id.* at 14–15 (“A large fraction of both terrestrial and freshwater species faces increased extinction risk under projected climate change during and beyond the [twenty-first] century, especially as climate change interacts with other stressors, such as habitat modification, over-exploitation, pollution, and invasive species (*high confidence*).”); see also WORLD WILDLIFE FUND, *LIVING PLANET REPORT 2014: SPECIES AND SPACES, PEOPLE AND PLACES 18–22* (2014) (“Climate change is the next most common primary threat in the [Living Planet Index]. Climate change has already been linked to the population decline and possible extinction of a number of amphibian species in the Neotropics and in Australia. In the Arctic, the effects of a rapidly warming climate have been suggested as likely causes of decline in body condition and numbers in many polar bear . . . and caribou . . . populations.” (internal citations omitted)); Pryor et al., *supra* note 23, at 436 (citing I-Ching Chen et al., *Rapid Range Shifts of Species Associated with High Levels of Climate Warming*, 333 *SCIENCE* 1024–26 (2011)) (“Nearly all studies to date published in the peer-reviewed literature agree that many of the boreal species of the north will eventually retreat

Climate change critically threatens food and water security with the brunt of the threat falling upon cities.²⁸ Global “[f]ights over water and food are going to be the most significant direct impacts of climate change in the next five to [ten] years.”²⁹ Domestically, the United States must be prepared to experience the predicted abrupt and severe impacts within the globalized food supply chain.³⁰ The United States’ food basket is concentrated in the Midwest and Western states. California, Iowa, Texas, Nebraska, and Minnesota are the top five agricultural producing states, “with those five representing more than a third of U.S. agricultural-output value.”³¹ During the drafting of this article, California was under a severe multi-year drought and the state was experiencing food price increases as a direct consequence of that drought.³²

Extreme weather events that disrupt food systems will continue in size and scale.³³ Regardless if one lives in a developed or

northward. The question is when. Multiple models and paleoecological evidence show these trends have occurred in the past and are projected to continue in the future.”); Felicity Barringer, *Climate Change Will Disrupt Half of North America’s Bird Species, Study Says*, N.Y. TIMES, Sept. 8, 2014, § A, at 14, available at LEXIS.

28. “Urban dwellers are particularly vulnerable to disruptions in essential infrastructure services,” including “food and agriculture.” Susan L. Cutter et al., U.S. Global Change Research Program, *Chapter 11: Urban Systems, Infrastructure, and Vulnerability*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 9, at 283.

29. The Daily Take Team, *Climate Change Is Real: Just Ask the World Bank*, TRUTH-OUT (Apr. 7, 2014, 1:45 PM), <http://truth-out.org/opinion/item/22956-the-climate-change-wars-have-already-begun> (quoting Jim Yong Kim, president of the World Bank).

30. Hatfield et al., *supra* note 22, at 151 (“[Climate change] will . . . alter the stability of food supplies and create new food security challenges for the United States as the world seeks to feed nine billion people by 2050.”).

31. *Agricultural Production and Prices*, U.S. DEP’T AGRIC., <http://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/agricultural-production-and-prices.aspx> (last updated Nov. 8, 2014) (citing the 2012 Census of Agriculture).

32. *Drought Leading to Higher Food Prices in California*, NBC NEWS (July 16, 2014, 8:09 PM), <http://www.nbcnews.com/storyline/california-drought/drought-leading-higher-food-prices-california-n157986>.

33. VAN STADEN, *supra* note 19, at 7; Hatfield et al., *supra* note 22, at 160 (noting hit to Iowa corn and soybean production); U.S. Global Change Research Program, *supra* note 24, at 16 (“While some U.S. regions and some types of agricultural production will be relatively resilient to climate change over the next [twenty-five] years or so, others will increasingly suffer from stresses due to extreme heat, drought, disease, and heavy downpours. From mid-century on, climate change is projected to have more negative impacts on crops and livestock

developing economy, the issues of climate resiliency, adaptation and urban food security are critically interfaced and require long-term planning calculated to eliminate current and projected food insecurity for vulnerable populations.³⁴ In the United States, environmental justice communities are among the most vulnerable.³⁵

Under clear and solemn predictions, the United States is at a crossroads where it can either permit the overwhelming consensus of science to move policy and law to build climate resiliency and food security within communities *equitably*, thus consciously eradicating existing disparities based on race and class, or ignore science and permit the impact of climate change to deepen its mark, sanctioning an unequal response from within our government structures.

C. *Minnesota's Changing Climate*

Since 1900, most of the Midwest experienced an average temperature increase of 1.5 degrees Fahrenheit.³⁶ This increase permits an elongated agricultural growing season.³⁷ However, with the increase in temperature, Minnesota has experienced more drought, heat waves, heavy rains, and other severe weather events

across the country—a trend that could diminish the security of our food supply.”). See generally John R. Porter et al., Intergovernmental Panel on Climate Change, *Food Security and Food Production Systems*, in WORKING GROUP II REPORT, *supra* note 4, at 485–533.

34. See VAN STADEN, *supra* note 19, at 10–11; Hans-O. Pörtner et al., Intergovernmental Panel on Climate Change, *Ocean Systems*, in WORKING GROUP II REPORT, *supra* note 4, at 452–63; see also Patricia Romero-Lankao et al., Intergovernmental Panel on Climate Change, *North America*, in WORKING GROUP II REPORT, *supra* note 4, at 1448 (“Current trends in agricultural practices in commercial regions such as the midwestern USA . . . amplify productivity risks posed by climate change. Incremental strategies will have reduced effectiveness under a 2099/4° C warming scenario, which would require more systemic adaptation, including production and livelihood diversification.” (citations omitted)).

35. Intergovernmental Panel on Climate Change, *supra* note 10, at 7 (“Individuals and communities are differentially exposed and vulnerable based on inequalities expressed through levels of wealth and education, disability, and health status, as well as gender, age, class, and other social and cultural characteristics.”).

36. THE WHITE HOUSE, FACT SHEET: WHAT CLIMATE CHANGE MEANS FOR MINNESOTA AND THE MIDWEST 2 (2014).

37. *Id.*

that contribute to a decline in crop production and an increase in livestock stress and death.³⁸ Very heavy precipitation incidents have increased by forty-five percent,³⁹ resulting in extreme rain and flooding events.⁴⁰ Projections for Minnesota's changing climate include further increases in droughts, flooding, heat wave intensity and frequency, humidity, and air quality deterioration.⁴¹ Additionally, the Midwest's air pollution incidents will continue to increase as GHGs rise.⁴² This is particularly concerning for urban areas, where low-income communities of color are subjected to greater levels of air pollution.⁴³

38. THE WHITE HOUSE, *supra* note 36, at 2; Debra Donahue, *Agriculture and Forestry*, in *THE LAW OF ADAPTATION TO CLIMATE CHANGE: U.S. AND INTERNATIONAL ASPECTS* 352 (Michael B. Gerrard & Katrina Fischer Kuh eds., 2012) ("While certain changes considered in isolation, such as elevated CO₂ levels or longer growing seasons, can enhance productivity in the short term or allow agriculture to expand in some places over the longer term, changes outside the genetic capacity of organisms pose challenges to their survival.").

39. INTERAGENCY CLIMATE ADAPTATION TEAM, *ADAPTING TO CLIMATE CHANGE IN MINNESOTA* 8 (Theresa Gaffey ed., 2013).

40. *Id.* at 8–9; THE WHITE HOUSE, *supra* note 36, at 2–3; Pryor et al., *supra* note 23, at 424–25.

41. THE WHITE HOUSE, *supra* note 36, at 1–2 ("The Midwest's agricultural lands, forests, Great Lakes, industrial activities, and cities are all vulnerable to climate variability and climate change. Climate change will tend to amplify existing risks climate poses to people, ecosystems, and infrastructure. Direct effects will include increased heat stress, flooding, drought, and late spring freezes. Climate change also alters pests and disease prevalence, competition from non-native or opportunistic native species, ecosystem disturbances, land-use change, landscape fragmentation, atmospheric and watershed pollutants, and economic shocks such as crop failures, reduced yields, or toxic blooms of algae due to extreme weather events.").

42. *See id.* at 2.

43. For instance, a recent study by the University of Minnesota showed that nationally people of color are exposed to thirty-eight percent more nitrogen dioxide than whites. *See* Rebecca Harrington, *U.S. Minorities Exposed To More Toxic Air, U Finds*, STAR TRIB. (Minneapolis), Apr. 16, 2014, at 05B, available at 2014 WLNR 11181598. The lead researcher found that race and income both matter, "however, race matters more than income." Ibrahim Hirsi, *Huge Gap in Pollution Exposure by Race Surprises U of M Researchers*, MINNPOST (Apr. 16, 2014), <http://www.minnpost.com/community-sketchbook/2014/04/huge-gap-pollution-exposure-race-surprises-u-m-researchers>. This comports with evidence that communities of color located along the Interstate 94 corridor running through North Minneapolis experiences the highest rates of hospitalization of children for asthma in the seven county metro area. Lorna Benson, *In the Twin Cities, Asthma Hospitalization Rate Highest Along I-94: Here's Why*, MPR NEWS (July 8, 2014), <http://>

Due to climate change, Minnesota's urban populations will likely experience "increased atmospheric pollution, heat island effects, a highly variable water cycle, and frequent exposure to new pests and diseases."⁴⁴ Midwest cities with aging infrastructure will be particularly vulnerable to flooding and life-threatening heat waves that result from climate change.⁴⁵

In this context, how does the state build resiliency and fortify historic ecosystems that support food systems and agriculture production in urban areas? For society's most vulnerable populations—those experiencing health and other disparities based on race and socioeconomic class—what does resiliency and adaptation look like when addressing climate-related food insecurity in cities? Because of existing inequalities, climate change impacts will be disproportionate, causing greater negative impacts on Minnesota's environmental justice communities. Once policymakers know where exposures lie, they can begin to meaningfully tailor climate adaptation and resilience land use policies calculated to address existing unequal exposures and advance localized food security with measurable equitable outcomes.

III. OVERVIEW OF ENVIRONMENTAL JUSTICE

In the United States, the environmental justice movement was founded at the first People of Color Environmental Justice Leadership Summit held October 24–27, 1991, in Washington D.C. Delegates to the Summit drafted and adopted seventeen "Principles of Environmental Justice" (or Principles).⁴⁶ The Principles are considered the foundational instrument for the

www.mprnews.org/story/2014/07/08/for-some-asthma-patients-smoking-housing-conditions-and-uneven-insurance-are-a-deadly-mix. The Metropolitan Council has classified this area as a "Racially Concentrated Area of Poverty." METRO. COUNCIL, *Racially Concentrated Areas of Poverty*, in CHOICE, PLACE, AND OPPORTUNITY: AN EQUITY ASSESSMENT OF THE TWIN CITIES REGION 14 (2014).

44. THE WHITE HOUSE, *supra* note 36.

45. Cutter et al., *supra* note 28, at 284 ("The vulnerability of urban dwellers multiplies when the effects of climate change interact with pre-existing urban stressors, such as deteriorating infrastructure, areas of intense poverty, and high population density.").

46. Delegates to the First Nat'l People of Color Environmental Leadership Summit, *Principles of Environmental Justice*, UNITED CHURCH CHRIST COMMISSION FOR RACIAL JUST., <http://www.ejnet.org/ej/principles.pdf> (last modified Apr. 6, 1996) [hereinafter Environmental Leadership Summit].

environmental justice movement in the United States.⁴⁷ Enumerating a new understanding of the environmental movement, the Principles addressed issues of race and class,⁴⁸ and also extended into the “histories of colonialism, imperialism and genocide of indigenous cultures.”⁴⁹ The Principles also sought to prevent environmental threats before they occurred.⁵⁰

In the preamble, the Principles acknowledged indigenous philosophy, natural law, and a shared understanding of the interconnectivity of life and humanity’s relationship with the earth.⁵¹ The Principles also addressed issues of land use, calling for: (1) the responsible use of land and renewable resources that would sustain the planet, (2) recognition of the sovereignty and self-determination of indigenous peoples and their “special legal and natural relationship” with the U.S. government, and (3) “urban and rural ecological policies to clean up and rebuild our cities . . . in balance with nature, [while retaining] cultural integrity of . . . communities, and . . . fair access . . . [to] resources.”⁵² Thus, in 1991, before alarm bells were going off in mainstream environmental movements and in government halls concerning urban sustainable development and land use planning, U.S. environmental justice delegates had become the prescient actors for the larger environmental movement, proffering government and mainstream environmentalists a different paradigm to understand land use development and human needs as the climatic crisis unfolded.⁵³

Strikingly, but not surprising, the federal and state governments’ treatment of environmental justice have diverged

47. Julie Sze & Jonathan K. London, *Environmental Justice at the Crossroads*, 2 SOC. COMPASS 1331, 1334 (2008) (“The Principles of Environmental Justice, adopted at the 1991 First People of Color Environmental Leadership summit and widely circulated (UCC 1991), can be considered the founding vision document that catalyzed the environmental justice movement.”).

48. *Id.*

49. *Id.*

50. Robert D. Bullard et al., *Toxic Wastes and Race at Twenty: Why Race Still Matters After All of These Years*, 38 ENVTL. L. 371, 378 (2008) (noting that the environmental justice “framework seeks to prevent environmental threats before they occur”).

51. See Environmental Leadership Summit, *supra* note 46.

52. *Id.*

53. See generally Bullard et al., *supra* note 50, at 376–77 (stating that the Summit was one of the most significant events in environmental justice history).

significantly from the Principles created by the original founders of the environmental justice movement. The idea of environmental justice first seeped into the federal legal conscience in 1994 when then-President Clinton signed Executive Order 12898, ordering that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations”⁵⁴ In substantial part, the Order was

designed to focus Federal attention on the environmental and human health conditions in minority communities and low-income communities with the goal of achieving environmental justice. That order is also intended to promote non-discrimination in Federal programs substantially affecting human health and the environment, and to provide minority communities and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment.⁵⁵

The EPA later went on to define “environmental justice” as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies.”⁵⁶ The EPA stated, “[E]nvironmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn and work.”⁵⁷ Further, the EPA recognized that

54. Exec. Order No. 12898, § 1-101, 59 Fed. Reg. 7629, 7629 (Feb. 16, 1994), *reprinted as amended in* Exec. Order No. 12948, 60 Fed. Reg. 6381 (Jan. 30, 1995).

55. See Memorandum from the White House to the Heads of All Dep’ts and Agencies regarding the Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations 3 (Feb. 11, 1994).

56. OFFICE OF ENVTL. JUSTICE, EPA, PLAN EJ 2014, at 3 (2011) [hereinafter PLAN EJ 2014].

57. OFFICE OF THE INSPECTOR GEN., EPA, REPORT NO. 2004-P-00007, EVALUATION REPORT: EPA NEEDS TO CONSISTENTLY IMPLEMENT THE INTENT OF THE EXECUTIVE ORDER ON ENVIRONMENTAL JUSTICE 35 (2004) (emphasis removed).

environmental justice should address both (1) the disproportionate risk of environmental harms born by indigenous peoples, people of color, and low-income communities; and (2) the historic exclusion of these groups from the benefits and government resources distributed to other communities to ensure a healthy environment.⁵⁸

Locally—for the first time in Minnesota’s legislative history—the state adopted the term “environmental justice” in 2013.⁵⁹ However, the term was used strictly for the purpose of ambient air monitoring.⁶⁰ The legislation allocated priority monitoring for those “areas where low income, indigenous American Indians, and communities of color are disproportionately impacted by pollution from highway traffic, air traffic, and industrial sources to assist with efforts to ensure environmental justice.”⁶¹ Adopting a less inclusionary definition than what the EPA put forth, the law defines environmental justice as “the fair treatment of people of all races, cultures, and income levels in the development, adoption, implementation, and enforcement of environmental laws and policies.”⁶²

IV. ENVIRONMENTAL JUSTICE AND FOOD SECURITY

A. *The Nexus of Environmental Justice, Vulnerability, and Food Insecurity*

Environmental justice communities will bear the most significant negative impacts of anthropogenic climate change, yet ironically they are the least responsible for creating the crisis.⁶³ As

58. PLAN EJ 2014, *supra* note 56, at 3.

59. Environment and Natural Resources Appropriations, 2013 Minn. Laws 1689, 1691–92.

60. *Id.*

61. *Id.* at 1692.

62. *Id.*

63. Jacqui Patterson, *From the Bronx to Botswana: Making a Climate Change Connection*, NAACP (July 30, 2011), <http://www.naacp.org/blog/entry/from-the-bronx-to-botswana-making-a-climate-change-connection>; see J.B. Ruhl, *Climate Change Adaptation and the Structural Transformation of Environmental Law*, 40 ENVTL. L. 363, 407, 409 (2010); Randy Poplock, Editorial, *The Poor Are Hit Hardest by Climate Change, but Contribute the Least to It*, SEATTLE POST-INTELLIGENCER, Aug. 20, 2007, available at 2007 WLNR 16268731 (“The ironic part about climate justice is this: Low-income populations are hit the hardest by climate change, yet they contribute the least to climate change on a per-capita basis. Lower-income

acknowledged in the President's Order, these historically disenfranchised communities have been excluded from meaningful participation in policy decisions affecting their disproportionate burden of pollution and corollary issues in health, food and nutrition needs, and economic opportunities.⁶⁴ Failure to include environmental justice communities is a decision to exclude, inculcating conditions of structural racism leaving these communities precariously degraded and vulnerable in their ability to adapt or be resilient to impacts of climate change.⁶⁵

The United Nations recognizes climate change "vulnerability" as "the propensity or predisposition to be adversely affected"; the

populations generally have smaller carbon footprints than higher-income populations as they (usually) buy fewer goods, own smaller homes and drive and fly fewer miles. A recent CBCF study showed that black populations nationwide contributed about 20 percent less in carbon-dioxide emissions per-capita than white populations."); *see also* T.M. Bull Bennett et al., U.S. Global Change Research Program, *Chapter 12: Indigenous Peoples, Lands, and Resources*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 9, at 297; George Luber et al., U.S. Global Change Research Program, *Chapter 9: Human Health*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 9, at 221 ("Key drivers of vulnerability include the attributes of certain groups (age, socioeconomic status, race, current level of health—see Ch. 12: Indigenous Peoples for examples of health impacts on vulnerable populations) and of place (floodplains, coastal zones, and urban areas), as well as the resilience of critical public health infrastructure. Multi-stressor situations, such as impacts on vulnerable populations following natural disasters that also damage the social and physical infrastructure necessary for resilience and emergency response, are particularly important to consider when preparing for the impacts of climate change on human health."); *Climate Change and the African American Community*, CONGRESSIONAL BLACK CAUCUS FOUND., INC. (July 2004), http://www.cbcfinc.org/images/pdf/Climate_Change_Factsheet.pdf.

64. *See* Exec. Order No. 12898, § 1-101, 59 Fed. Reg. 7629, 7629 (Feb. 11, 1994), *reprinted as amended in* Exec. Order No. 12948, 60 Fed. Reg. 6381 (Jan. 30, 1995). ("[E]ach Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.").

65. "Structural racism or racialization emphasizes the interaction of multiple institutions in an ongoing process of producing racialized outcomes." John. a. powell, *Structural Racism: Building Upon the Insights of John Calmore*, 86 N.C. L. REV. 791, 791 (2008); *see also* Luber et al., *supra* note 63, at 253–54 (stating that due to climate change "the most vulnerable, including those dependent on subsistence lifestyles, especially Alaska Natives and low-income populations, will confront shortages of key foods.").

term must be observed in the context of inherent dynamics creating the foundation of vulnerability, which include “diverse historical, social economic, political, cultural, institutional, natural resource and environmental conditions.”⁶⁶ Domestically, the federal government defined the term “vulnerability” as that which is “a function of the character, magnitude, and rate of climate variations to which a system is exposed, its sensitivity, and its adaptive capacity.”⁶⁷

Minnesota’s urban areas face particular challenges where the highest concentration of the population is sited.⁶⁸ Based on 2010 census data, Minnesota has a seventy-three percent urbanization

66. Allan Lavell et al., Intergovernmental Panel on Climate Change, *Climate Change: New Dimensions in Disaster Risk, Exposure, Vulnerability, and Resilience*, in MANAGING THE RISKS OF EXTREME EVENTS AND DISASTERS TO ADVANCE CLIMATE CHANGE ADAPTATION, *supra* note 10, at 32. Other international organizations that have considered climate adaptation in relation to health would look at the propensity or predisposition as the “social determinants of health.” These are:

“[T]he conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels[,]” which are themselves influenced by policy choices. “The social determinants of health are mostly responsible for health equities—the unfair and avoidable differences in health status seen within and between countries.”

Lindsay F. Wiley, *Global Health and Disaster Preparedness*, in THE LAW OF ADAPTATION TO CLIMATE CHANGE: U.S. AND INTERNATIONAL ASPECTS, *supra* note 38, at 673 (quoting *Social Determinants of Health*, WORLD HEALTH ORG., http://www.who.int/social_determinants/en (last visited Nov. 15, 2014)); see Lyster, *supra* note 6, at 41.

67. ARIE PONCE MANANGAN ET AL., ASSESSING HEALTH VULNERABILITY TO CLIMATE CHANGE: A GUIDE FOR HEALTH DEPARTMENTS 4–5 (2014) (citing Rosina Bierbaum et al., U.S. Global Change Research Program, *Chapter 28: Adaptation*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 9, at 670, 672). Under a public health lens addressing climate change, the U.S. Center for Disease Control (CDC) has defined “vulnerability” as “being a function of exposure, sensitivity, and adaptive capacity.” *Id.* at 3 (citing Susan L. Cutter et al., *Social Vulnerability to Environmental Hazards*, 84 SOC. SCI. Q. 242, 242 (2003); Anthony Patt et al., *Vulnerability Research and Assessment to Support Adaptation and Mitigation: Common Themes from the Diversity of Approaches*, in ASSESSING VULNERABILITY TO GLOBAL ENVIRONMENTAL CHANGE: MAKING RESEARCH USEFUL FOR ADAPTATION DECISION MAKING AND POLICY I, 4–5 (Anthony Patt et al., eds., 2009); B.L. Turner et al., *A Framework for Vulnerability Analysis in Sustainability Science*, 100 PROC. NAT’L ACAD. SCI. 8074, 8074 (2003)).

68. See generally U.S. DEP’T OF COMMERCE, MINNESOTA 2010: POPULATION AND HOUSING UNIT COUNTS (2012).

rate.⁶⁹ The most populated cities are Minneapolis, St. Paul, Rochester, Duluth, Bloomington, and Brooklyn Park, where collectively just over one million residents live.⁷⁰ These cities also hold the state's largest populations of communities of color.⁷¹ Concomitant with the high minority racial demographic, these large cities are also home to a significant portion of the state's low-income families and individuals.⁷² A substantial number receive some sort of government assistance and live below 200% of the poverty level, which is just under \$47,000 for a family of four (or \$23,850 at the federal poverty line).⁷³ Having almost no savings or disposable wealth that may be accessed in times of crisis, these communities are financially unprepared for projected shocks in the food supply chain, leaving them particularly vulnerable to food disruptions.

Throughout Minnesota's history, indigenous peoples and communities of color have not enjoyed a level playing field with their more affluent white counterparts. They have been disadvantaged and encumbered, unequal since birth. Even today, the disparities are stark.⁷⁴ American Indian, African, Latino, and Asian American communities have experienced historic discrimination rates manifested in employment,⁷⁵ housing,⁷⁶

69. *Id.* at 2 tbl.2.

70. *Minnesota's Largest Cities (Population 25,000+) Population Count for 2000 and 2010 Census*, MINN. ST. DEMOGRAPHIC CENTER, http://mn.gov/admin/demography/data-by-topic/population-data/2010-decennial-census/#content_jump (last visited Nov. 7, 2014) (CSV file available for download, located under "Popular Census 2010 Datasets").

71. *Id.*

72. MINN. DEP'T OF HEALTH, PERCENT OF POPULATION BELOW 200% OF POVERTY LEVEL BY COUNTY SUBDIVISION IN MINNESOTA 1 (2012).

73. Annual Update of the HHS Poverty Guidelines, 79 Fed. Reg. 3593 (Jan. 22, 2014); MINN. DEP'T OF HEALTH, *supra* note 72, at 2 ("The threshold of 200% of poverty . . . is [tracked] because people living below this income level still face economic hardship."); *see also Minneapolis-St. Paul Neighborhood*, MINN. COMPASS, <http://www.mncompass.org/profiles/neighborhoods/minneapolis-saint-paul#!percent-in-poverty> (last visited Nov. 7, 2014).

74. MINN. DEP'T OF HEALTH, ADVANCING HEALTH EQUITY IN MINNESOTA: REPORT TO THE LEGISLATURE 17-18 (2014) [hereinafter MDH REPORT]. *See generally* THE MINN. STATE ADVISORY COMM. TO THE U.S. COMM'N ON CIVIL RIGHTS, RESOURCES DEVOTED TO CIVIL RIGHTS ENFORCEMENT IN MINNESOTA: AN UPDATE (2011) (providing panel narratives on discrimination in Minnesota).

75. Unemployment inequality in the Twin Cities metro area is ranked near the very bottom, with African Americans experiencing two and one-half times

health,⁷⁷ education,⁷⁸ economic opportunity,⁷⁹ and incarceration⁸⁰ disparities. What significantly contributes to these disparities are

more unemployment than whites. *Proportion of Adults (Age 16–64) Working*, MINN. COMPASS, <http://www.mncompass.org/disparities/race#7-9477-d> (last visited Nov. 7, 2014); see also Frederick Melo, *Minnesota's Racial Poverty Disparities Must Be Addressed, Met Council Boss Says*, ST. PAUL PIONEER PRESS (Jan. 27, 2014), http://www.twincities.com/localnews/ci_25004196/minnesotas-racial-poverty-disparities-must-be-addressed-met. American Indians have the highest unemployment rate in the metropolitan region. *Homeownership Gap by Twin Cities and Greater MN: Minnesota 1990–2012*, MINN. COMPASS, <http://www.mncompass.org/disparities/race#1-9448-d> (last visited Nov. 7, 2014) [hereinafter *Homeownership Gap*] (citing the U.S. Census Bureau's Decennial Census and American Community Survey).

76. “While seventy-five percent of the white population in Minnesota owns their own home, only twenty-one percent of African Americans, forty-five percent of Hispanic/Latinos, forty-seven percent of American Indians, and fifty-four percent of Asian Pacific Islanders own their own homes.” MDH REPORT, *supra* note 74, at 91 fig.18. “[C]ompared to other top metros, the Twin Cities is dead-last” in homeownership for communities of color. Jane Tigan, *Trends on the Home Front*, MINN. COMPASS, <http://www.mncompass.org/trends/insights/2012-02-01-minnesota-affordable-housing-trends> (last visited Nov. 14, 2014).

77. “African American and American Indian babies die in the first year of life at twice the rate of white babies and have the highest incidence of low birth weight. MDH REPORT, *supra* note 74, at 5, 17; *Low Birth Weight*, MINN. COMPASS, <http://www.mncompass.org/early-childhood/low-birth-weight#7-5880-g> (last visited Nov. 7, 2014). Although infant mortality rates for all groups have declined, for African American and American Indians, this disparity has been persistent. MDH REPORT, *supra* note 74, at 17.

78. “American Indian, Hispanic/Latino, and African American youth have the lowest rates of on-time high school graduation.” MDH REPORT, *supra* note 74, at 6.

79. In the Twin Cities Metro area, communities of color have the highest percentage of those living below the federal poverty level: African Americans at 38.3%, Latinos at 24.2%, and American Indians at 33.7%. *Percent of the Population Below the Federal Poverty Level*, MINN. COMPASS, <http://www.mncompass.org/disparities/race#7-11416-d> (last visited Nov. 7, 2014). This is in comparison to white metro residents, who experience living below the poverty rate at just 6.4%. *Id.* African Americans and Latinos in Minnesota have less than half the per capita income of the white population, MDH REPORT, *supra* note 74, at 18, and the Twin Cities metropolitan area ranks nationally as being least equal in income between black and white residents. See NAT'L URBAN LEAGUE, ONE NATION UNDEREMPLOYED: JOBS REBUILD AMERICA 45 (Channelle P. Hardy et al. eds., 2014); see also MINN. ADVISORY COMM., UNEMPLOYMENT DISPARITY IN MINNESOTA: REPORT OF THE MINNESOTA ADVISORY COMMITTEE TO THE U.S. COMMISSION ON CIVIL RIGHTS I (2013) (“[T]he unemployment rate for African Americans in the Minneapolis area was over three times that of Whites. In addition, the African American unemployment rate of over 20 percent in Minneapolis-St. Paul was the second highest rate in the country, just behind the Detroit metropolitan area. Worse yet,

social and economic inequities—often rooted in policymaking aimed at housing, employment, and economic development needs—and paralleled by discriminatory systems and practices within government, private industry, and other sectors.⁸¹

It is unacceptable that, as of 2015, Minnesota's largest metro region is set apart from all other major metro regions in the nation because of an unprecedented chasm of racial treatment resulting in disparities.⁸² With unequal access to education, housing, health care, and economic opportunity, and bearing the disproportionate brunt of impoverishment and incarceration rates, Minnesota's American Indian, African American, Latino, and Asian communities are subject to policies and historic practices that have structurally blocked them from the capacity to build food security, which is vital to ensuring climate resiliency.⁸³ Without government remediation of practices and policies causing disparities, these communities are consigned to an acute climate change vulnerability status.

Government, private, and non-profit actors working to build climate resiliency in environmental justice communities would do well to heed the Minnesota Department of Health's recent message

the disparity appears to be growing." (citing ALGERON AUSTIN, *ECON. POL'Y INST., UNEVEN PAIN: UNEMPLOYMENT BY METROPOLITAN AREA AND RACE* 7 (2010))). "Poverty rates for children under eighteen in Minnesota are twice as high for Asian children, three times as high for Hispanic/Latino children, four times as high for American Indian children, and nearly five times as high for African American children as for white children." MDH REPORT, *supra* note 74, at 6.

80. "African Americans and American Indians are incarcerated at nine times the rate of white persons." MDH REPORT, *supra* note 74, at 6.

81. *Id.* at 5. When addressing health disparities, a recent report issued by the Minnesota Department of Health found that "inequities in social and economic factors are the key contributors to health disparities." *Id.* The report implored legislatures and other stakeholders to address "structural racism" in order to eradicate inequities that contribute to disparities. *Id.* at 30. The concept of "structural racism" focuses on deconstructing systematic racial and intersectional dynamics, in contrast to traditional racism discourse, which focuses on the individual actor's discriminatory intent. powell, *supra* note 65, at 816 (discussing structural racism and noting that "[a] structural racism lens will help us identify macro-level dynamics that have micro-level consequences for all American citizens and the policy areas that we can tap to rebuild our failing structures").

82. See METRO. COUNCIL, *Regional Disparities, in CHOICE, PLACE, AND OPPORTUNITY: AN EQUITY ASSESSMENT OF THE TWIN CITIES REGION*, *supra* note 43, at 1.

83. Lubert et al., *supra* note 63, at 253–54

to the legislature and consider how “structural racism”⁸⁴ operates in the context of disparities, creating a predisposition to vulnerability status in the time of climate change.

B. *Urban Indigenous Peoples*

In a much different political context, the United States is imbued in nation-to-nation treaty agreements with Minnesota’s sovereign Indian nations. Some of these nations retain off-reservation rights to access supporting and relational ecosystems on their territorial homelands.⁸⁵ However, because of the historically tragic relationship between Minnesota’s indigenous nations and federal and state governments, indigenous populations have and continue to experience separation from territorial homelands and ecosystems in the time of climate change.⁸⁶ Native communities have witnessed unprecedented depletion, disruption, and pollution to their homelands, natural resources, and ecosystems—brought about by both government and private industry actors imposing a new violent, fossil-fuel dependent economy—that further separates them from the health and well-being that their forbearers once enjoyed.⁸⁷

84. The MDH defined “structural racism” as “the normalization of historical, cultural, institutional and interpersonal dynamics that routinely advantage white people while producing cumulative and chronic adverse outcomes for people of color and American Indians.” Melanie Peterson-Hickley & Jeanne Ayers, *Preface to MINN. DEP’T OF HEALTH, ADVANCING HEALTH EQUITY IN MINNESOTA: REPORT TO THE LEGISLATURE* 24 (2014).

85. See *Minnesota v. Mille Lacs Band of Chippewa*, 526 U.S. 172, 176 (1999) (“The Chippewa agreed to sell the land to the United States, but they insisted on preserving their right to hunt, fish, and gather in the ceded territory.”).

86. See Bennett et al., *supra* note 63, at 298 (“The adaptive responses to multiple social and ecological challenges arising from climate impacts on indigenous communities will occur against a complex backdrop of centuries-old cultures already stressed by historical events and contemporary conditions.”). See generally GWEN WESTERMAN & BRUCE WHITE, *MNI SOTA MAKOCE: THE LAND OF THE DAKOTA* (2012).

87. THE WHITE HOUSE, *supra* note 36; see also *Treaty with the Chippewa*, U.S.-Chippewa, art. 5, July 29, 1837, 7 Stat. 536; *Mille Lacs Band of Chippewa*, 526 U.S. at 176; Rasma Hodge, *Free Speech Zone: Dakota Exercise Treaty Fishing Rights on Cedar Lake*, TWIN CITIES DAILY PLANET (May 13, 2011), <http://www.tcdailyplanet.net/news/2011/05/13/free-speech-zone-dakota-exercise-treaty-fishing-rights-cedar-lake> (summarizing Dakota peoples’ recent attempt to fully exercise usufructuary rights on Cedar Lake in Minneapolis pursuant to an 1805 treaty). However, Dakota treaty rights were subsequently and unilaterally abrogated by the U.S.

The United States recognizes that “[o]bserved and future impacts from climate change threaten Native peoples’ access to traditional foods such as fish, game, and wild and cultivated crops, which have provided sustenance as well as cultural, economic, medicinal, and community health for generations.”⁸⁸ Indigenous knowledge of these foods and other “resources”⁸⁹ is often relayed in terms of “traditional ecological knowledge” (TEK), which can be understood as “a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment.”⁹⁰ Vulnerability status for Minnesota’s urban indigenous peoples is not only created by existing racial disparities, but further aggravated because indigenous peoples’ “physical, mental, intellectual, social, and cultural well-being is traditionally tied to a close relationship with the natural world [including territorial homelands], and because of their dependence on the land and resources for basic needs,” which include food and medicine.⁹¹ Climate resiliency and adaptation planning to ensure food security for Minnesota’s urban indigenous populations will require access to historic territorial homelands and resources vital

Congress. Act of Feb. 16, 1863, ch. 37, 12 Stat. 652. A clear example of massive disruption and destruction of original food sources is witnessed in Minnesota’s aquatic ecosystems today where pregnant women, child-bearing women, and children fifteen years and younger are directed by the Minnesota Department of Health to consume only one fish meal of bass, catfish, northern pike, or walleye *per month* due to contamination of Minnesota’s waters; yet Minnesota’s fish play a role as part of a supportive food ecosystem for indigenous peoples’ diets. See *Statewide Safe-Eating Guidelines for Sensitive Populations: Pregnant Women, Women Who Could Become Pregnant, and Children Under Age 15*, MINN. DEP’T HEALTH, <http://www.health.state.mn.us/divs/eh/fish/eating/kidmom/index.html> (last visited Nov. 7, 2014).

88. THE WHITE HOUSE, *supra* note 36, at 2.

89. Many indigenous peoples regard all people, plants, and animals that share our world as relatives rather than resources. Bennett et al., *supra* note 63, at 301.

90. See *id.*; see also CHIEF CLARENCE ALEXANDER ET AL., LINKING INDIGENOUS KNOWLEDGE AND OBSERVED CLIMATE CHANGE STUDIES 2 (2010) (quoting F. Berkes, *Traditional Ecological Knowledge in Perspective*, in TRADITIONAL ECOLOGICAL KNOWLEDGE: CONCEPTS AND CASES 1, 3 (Julian T. Inglis ed., 1993)).

91. Bennett et al., *supra* note 63, at 299.

to the retention and practice of traditional ecological knowledge, which supports the needs for indigenous health and well-being.⁹²

C. *Addressing Food Security for Environmental Justice Communities*

It is inevitable that governments will have to address food security, but they must do so in a way that is equitable, localized, and sustainable. This means that the food supply cycle—from seed, to table, to compost—must occur overwhelmingly in cities, within the communities where the food is consumed, and be tailored to remedy historic disparities and inequities. It also means that regional authorities and municipalities will have to restructure land use planning to include scaled urban agriculture calculated to address the most vulnerable populations.

The U.S. Department of Agriculture (USDA) defines “food security” as having “access by all people at all times to enough food for an active, healthy life.”⁹³ Ignoring social, cultural, and political factors that impact environmental justice communities, the USDA does not consider existing disparities because of race, ethnicity, and economic class as intrinsic factors to the definition of food security. But these racial and socioeconomic factors are of vital importance as they are associated with existing health disparities, and are linked, in part, to a disengagement of traditional cultural diets prevalent in environmental justice communities. For that reason, policymakers should be informed of a more holistic conceptualization of the term “food security” as being “a situation that exists when all people, at all times, have physical, social, [cultural,] and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”⁹⁴

92. ALEXANDER ET AL., *supra* note 90, at 8; Bennett et al., *supra* note 63, at 298.

93. *Food & Nutrition Assistance*, USDA, <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us.aspx#.U8WA0aUbRg0> (last updated Oct. 7, 2014); *see also Food Security*, WORLD HEALTH ORG., <http://www.who.int/trade/glossary/story028/en/> (last visited Oct. 25, 2014).

94. *Food Security: Concepts and Measurement*, UNITED NATIONS FOOD & AGRIC. ORG., <http://www.fao.org/docrep/005/y4671e/y4671e06.htm#fn31> (last visited Nov. 13, 2014) (citing *The State of Food Insecurity in the World*, UNITED NATIONS FOOD & AGRIC. ORG. (2001), <http://www.fao.org/docrep/003/y1500e/y1500e00.htm>). Food security typically consists of four components: availability, stability, access, and utilization of food. *Id.*

Environmental justice communities are already food insecure, which escalates their vulnerability to climate change impacts.⁹⁵ An individual or family should be considered *food insecure* if they lack the current resources to provide for their basic food and nutrition needs, or they are vulnerable to disruptions in the food supply chain compromising their ability to bounce back and become resilient to shocks such as price increases and other food insecurity events.⁹⁶

For those one in four Minnesotans who receive some type of government food assistance,⁹⁷ without this assistance these individuals and families would be food insecure under the federal definition because they do not at all times have “enough food for an active, healthy life.”⁹⁸ Even with a federal food program safety net, food and nutrition needs are out of reach for an individual or family that experiences unemployment or is otherwise vulnerable to the shocks of inflation and the relative price of food.⁹⁹ Without resources to alleviate this vulnerability, food insecurity will likely deepen within Minnesota’s environmental justice communities as projected climate change impacts unfold.

V. HUMAN RIGHTS AND FOOD SECURITY

An emerging arena of climate change adaption policy in the United States proffers a field of law where climate adaptation and resilience building integrates human rights by “reducing vulnerability, ensuring resiliency, and safeguarding equity.”¹⁰⁰ Local

95. See ROSE BREWER ET AL., AD-HOC WORK GROUP: MINN., SHADOW REPORT FROM MINNESOTA: A HUMAN RIGHTS PERSPECTIVE ON THE LAND OF 10,000 LAKES DISPARITIES 8–10 (2014).

96. See *Measurement*, USDA, <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx#insecurity> (last updated Sept. 3, 2014) (defining the term “food insecurity” as the “limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways”).

97. Jennifer Brooks, *Food Stamp Demand Rises in Minnesota as Budget Shrinks*, STAR TRIB. (Minn.), <http://www.startribune.com/politics/statelocal/229638161.html> (last updated Oct. 28, 2013, 10:11 PM).

98. *Overview: Food Security*, USDA, <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us.aspx> (last updated Oct. 7, 2014).

99. See MARK NORD ET AL., USDA, PREVALENCE OF U.S. FOOD INSECURITY IS RELATED TO CHANGES IN UNEMPLOYMENT, INFLATION, AND THE PRICE OF FOOD 2 (2014).

100. J.B. Ruhl & James Salzman, *Climate Change Meets the Law of the Horse*, 62

and state processes, construction, and implementation of climate adaptation and climate resilience measures should incorporate international instruments affirming the human rights of indigenous peoples and communities of color.¹⁰¹ In forming equitable land use planning, policymakers should be guided by these instruments providing human rights standards.¹⁰²

A. *U.N. Declaration on the Rights of Indigenous Peoples*

A just and equitable response to climate adaptability and resiliency cannot escape the United States' obligations to American Indian nations, which are further recognized in the United Nations Declaration on the Rights of Indigenous Peoples (the Declaration).¹⁰³ Although Minnesota's most concentrated urban

DUKE L.J. 975, 976 (2013).

101. COHEN'S HANDBOOK OF FEDERAL INDIAN LAW synopsis (Nell Jessup Newton ed., 2012), available at LEXIS ("Prior to the creation of the United States, the entire land mass it now occupies was owned and governed by hundreds of Indian tribes. These tribes, sovereign nations under international law, were brought into the United States through a colonial process that was partly negotiated and partly imposed. Federal Indian law is the primary mechanism for mediating the resulting intergovernmental relationships among the Indian nations, the United States, and the states of the Union."). These obligations include the solemn terms of treaties and other agreements between the United States and tribal nations, further recognized as human rights pursuant to the U.N. Charter and international legal standards. See WALTER R. ECHO-HAWK, IN THE LIGHT OF JUSTICE: THE RISE OF HUMAN RIGHTS IN NATIVE AMERICA AND THE U.N. DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES 63 (2013) (stating that the U.N. Declaration on the Rights of Indigenous Peoples, "[a]t its core lies the inherent right to 'self-determination,' the center piece of federal Indian policy in the United States since 1970").

102. See ECHO-HAWK, *supra* note 101, at 63 (citing COHEN'S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 101, § 5.07) ("In establishing the fundamental rules governing the relationship between Indian tribes and the United States, early United States Supreme Court cases relied extensively on international law. The discovery doctrine, the existence and scope of Indian title to property, and even the concept of inherent tribal sovereignty, all originated in international norms, which the Supreme Court adapted to the American setting."); see also COHEN'S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 101, § 5.07 (citing *Sosa v. Alvarez-Machain*, 542 U.S. 692, 736–37 (2004)) ("[I]t is well established that the rules of international customary law form part of the federal common law applicable in certain actions in United States courts.").

103. See Declaration on the Rights of Indigenous Peoples, G.A. Res. 61/295, annex, U.N. Doc. A/RES/61/295 (Sept. 13, 2007) [hereinafter UNDRIP]; see also ASIA PAC. FORUM OF NAT'L HUMAN RIGHTS INSTS. & THE OFFICE OF THE UNITED NATIONS HIGH COMM'R FOR HUMAN RIGHTS, THE UNITED NATIONS DECLARATION ON

area, the metropolitan region, sits upon Dakota lands, any Dakota rights specified in prior treaties for lands ceded in the metro region were unilaterally abrogated by the U.S. Congress.¹⁰⁴ However, the Declaration recognizes that colonial governments (and their successor governments like the United States), have often orchestrated domestic law to create a “terminal narrative” to treaty agreements, eroding the right of self-determination, access to territorial homelands (and other rights) of indigenous peoples through an accomplished involuntary appropriation of indigenous homelands (i.e., land grab) resulting in the violation of human rights.¹⁰⁵

The Declaration is comprehensive, setting minimal human rights standards for indigenous peoples. It recognizes treaty rights but further extends to “property, civil, political, economic, social, cultural, religious, and environmental rights of indigenous peoples.”¹⁰⁶ Although not initially adopted by the United States,¹⁰⁷ in 2010, President Obama agreed that the United States would support the Declaration.¹⁰⁸ The United States acknowledged that the Declaration had both “moral and political force” and further recognized that the Declaration expressed not only the aspirations of indigenous peoples, but those of the United States, which seeks

THE RIGHTS OF INDIGENOUS PEOPLES: A MANUAL FOR NATIONAL HUMAN RIGHTS INSTITUTIONS 37–39 (2013) [hereinafter MANUAL FOR NATIONAL HUMAN RIGHTS INSTITUTIONS]. There is a distinction between inequities caused by the violation of inherent rights and other permanent rights recognized pursuant to treaties and other agreements, versus those inequities that may be addressed through special and temporary measures. *Id.* at 10.

104. Act of Feb. 16, 1863, ch. 37, 12 Stat. 652.

105. See R. DUNBAR-ORTIZ, AN INDIGENOUS PEOPLE’S HISTORY OF THE UNITED STATES 42 (2014).

106. ECHO-HAWK, *supra* note 101, at 3.

107. U.N. GAOR, 61st Sess., 107th plen. mtg. at 15, 19, U.N. Doc. A/61/PV.107 (Sept. 13, 2007), available at http://www.un.org/en/ga/search/view_doc.asp?symbol=A/61/PV.107&Lang=E (“[The United States] regret[s] that we must vote against the adoption of the Declaration on the Rights of Indigenous Peoples, annexed to draft resolution A/61/L.67.”); Announcement, U.S. Dep’t of State, U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples: Initiatives to Promote the Government-to-Government Relationship & Improve the Lives of Indigenous Peoples 1 (Dec. 16, 2010) [hereinafter Announcement of U.S. Support for UNDRIP], available at <http://www.state.gov/documents/organization/184099.pdf>.

108. See THE WHITE HOUSE, TRIBAL NATIONS CONFERENCE PROGRESS REPORT: ACHIEVING A BRIGHTER FUTURE FOR TRIBAL NATIONS, at v (2011).

“to improve its relationship with indigenous peoples.”¹⁰⁹ The United States has expressed its desire to achieve the aspirations of the Declaration “within the structure of the U.S. Constitution, laws, and international obligations, while also seeking, where appropriate, to improve [its] laws and policies.”¹¹⁰ Although the United States considers the Declaration “not legally binding,” the Declaration serves as a compass towards justice; in other words, indigenous human rights violations have been left unchecked in the United States and justice has yet to be achieved.¹¹¹

The Declaration extends formal recognition to the historic relationship of indigenous peoples to their territorial homelands and how involuntary dispossession from these homelands has wreaked destruction upon their well-being, not only violating their most basic human rights to their lands, but also threatening their very existence.¹¹² The Declaration memorializes the recognition of fundamental treaty rights, identifying indigenous peoples’ rights to their homelands and resources that may be under control by others by fact or law.¹¹³

109. See generally Announcement of U.S. Support for UNDRIP, *supra* note 107.

110. See *id.*

111. *Id.*; see also COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 101, § 5.07[4][a] (noting that international law, while not legally binding, can influence the development of U.S. federal law).

112. See UNDRIP, *supra* note 103 (expressing concern “that indigenous peoples have suffered from historic injustices as a result of, inter alia, their colonization and dispossession of their lands, territories and resources, thus preventing them from exercising, in particular, their right to development in accordance with their own needs and interests”).

113. UNITED NATIONS ENV’T PROGRAMME, UNEP COMPENDIUM ON HUMAN RIGHTS AND THE ENVIRONMENT: SELECTED INTERNATIONAL LEGAL MATERIALS AND CASES 17 (2004). See generally UNDRIP, *supra* note 103. Article 24 of UNDRIP includes indigenous peoples’ rights to “traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals.” *Id.* art. 24. Article 25 encompasses their “right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations” *Id.* art. 25. Article 26 explains “the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired.” *Id.* art. 26. Article 37, lastly, describes “the right to the recognition, observance and enforcement of treaties, agreements and other constructive arrangements concluded with States or their successors and to have States honour and respect such treaties, agreements and other constructive arrangements.” *Id.* art. 37.

Most indigenous peoples have a strong connection to the environment and their traditional lands and territories. They also often share legacies of removal from traditional lands and territories, subjugation, destruction of their cultures, discrimination and widespread violations of their human rights. . . . Indigenous peoples are also harmfully impacted by development processes, which pose a grave threat to their continued existence.¹¹⁴

State and local governments are challenged to connect the dots between continued separation from territorial homelands and the destruction of indigenous lands, waters, and ecosystems that Minnesota's Indian nations historically held (but which were often illegally or dubiously taken) and how this traumatic separation and continued denial of access correlates with or causes existing disparities among Minnesota's indigenous populations today.¹¹⁵ For instance, the area called Bdote, which the Twin Cities of Minneapolis and Saint Paul are built upon, is a place of paramount identity and existence for the Dakota.¹¹⁶ It is under the

114. MANUAL FOR NATIONAL HUMAN RIGHTS INSTITUTIONS, *supra* note 103, at 3; see also Bennett et al., *supra* note 63, at 299.

115. See Bennett et al., *supra* note 63, at 299 ("In addition, Native populations are also vulnerable [to climate change] because their physical, mental, intellectual, social, and cultural well-being is traditionally tied to a close relationship with the natural world, and because of their dependence on the land and resources for basic needs such as medicine, shelter, and food."). See generally Minn. Humanities Ctr., *Mnisota Makoce: A Dakota Place*, BDOTEMORYMAP, <http://bdotememorymap.org/mnisota/> (last visited Nov. 9, 2014) (commenting on the separation of Dakota peoples from their homelands, government policies fomenting starvation upon Dakota people, and the consequential war to defend Dakota homelands against government forces in an interview with Dakota leader/elder Diane Wilson). Dakota elders David Larson and Dr. Chris Mato Nunpa discuss the Twin Cities urban region being founded upon "Bdote." *Id.*

116. The meaning of "Bdote" as a Dakota word is explained as

generally mean[ing] "where two waters come together." The bdote where Haha Tanka (river of the waterfall) or Wakpa Tanka (big river), called the Mississippi River in English, and the Mnisota Wakpa (Minnesota River) come together is central to Dakota spirituality and history.

. . . [T]he term "bdote" sometimes [is] a name for the larger area surrounding the bdote of the Minnesota and Mississippi Rivers.

According to the origin stories of the Bdewakantunwan Dakota (one of the Seven Fires of the Dakota Oyate), the point where the rivers come together here, the Bdote, is the center of the earth. It is,

Declaration's counsel that state and local governments should ensure access to food systems as Indian nations understood them, through healthy ecosystems that were, and are, vitally important for the continuation of health and well-being.¹¹⁷

Past generations of federal and state governments laid the foundation to violate human rights and treaty obligations unilaterally; the violations have now manifested in inequities and disparities indigenous peoples experience today.¹¹⁸ The present generation of state and local governments have inherited the injustices and inequities created by their founding governments.¹¹⁹ These unjust structures operate and strike at the health and well-being of indigenous peoples' lives today, making them gravely vulnerable to climate change. To correct these injustices, policymakers should recognize and use their authority to fully support the Declaration and the intent of the treaties in which indigenous nations' homelands were ceded or otherwise dispossessed from and engage in meaningful consultation and implementation with indigenous peoples concerning access to

we are taught by the Bdewakantunwan, where the Dakota people began.

Minn. Humanities Ctr., *What Is Bdote?*, BDOTEMORYMAP, <http://bdotememorymap.org/memory-map/#> (last visited Feb. 22, 2015) (follow "What is Bdote?" hyperlink).

117. See Ed Goodman, *Protecting Habitat for Off-Reservation Tribal Hunting and Fishing Rights: Tribal Co-management as a Reserved Right*, 30 ENVTL. L. 279, 289 (2000) ("The right to protection of off-reservation habitat that supports reserved-rights species flows from the legitimate expectation tribes had in reserving such rights: that there would be sufficient resources available to ensure that the rights were meaningful."); see also *Washington v. Wash. State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 684–85 (1979) (noting that the resources involved were necessary to the Indians' welfare and "reasonable livelihood needs would be met" under rights reserved for ceded territory and that the deprivation of access to reserved rights (salmon fishing) may not be used to interfere with fishing rights); *United States v. Winans*, 198 U.S. 371, 384 (1905). See generally *Lac Courte Oreilles Band of Lake Superior Chippewa Indians v. Wisconsin*, 653 F. Supp. 1420, 1435 (W.D. Wis. 1987) ("These rights today include rights to all the forms of animal life, fish, vegetation . . . and use of all of the methods of harvesting employed in treaty times and those developed since.").

118. Nicholas A. Robinson, "Minimum Standards:" *The UN Declaration on the Rights of Indigenous Peoples*, 28 PACE ENVTL. L. REV. 346, 347 (2010) ("Past generations created the inequitable relations that legal systems perpetuate with respect to the lives of indigenous peoples . . . Present generations inherit these inequities.").

119. *Id.*

territorial homelands, water, and ecosystems to advance food security in the time of climate change.

As Western science and policy advance to value the necessity of traditional indigenous knowledge and practices concerning ecosystems, Minnesota's efforts to build climate resiliency as part of urban development must acknowledge the Dakota nation's historic and ongoing, but traumatically disrupted, relationship to their territorial homelands and traditional food systems—as well as that of other indigenous peoples who reside in Minnesota's cities.¹²⁰ By adopting land use policies that set forth recognition of indigenous relationships with their territorial homelands, municipalities would take a calculated step toward eliminating health, economic, housing, education, and other disparities and concomitantly build food security for urban indigenous communities. Moreover, the crucial body of traditional indigenous scientific and cultural knowledge of native animal and plant species, water life cycles, propagation, growth patterns, and related bio-diverse ecosystems would benefit all urban residents in the implementation of sustainable urban agricultural and supportive food ecosystems.¹²¹

120. See Angelique Townsend Eaglewoman (Wamdi A. Wastewin), *Wintertime for the Sisseton-Wahpeton Oyate: Over One Hundred Fifty Years of Human Rights Violations by the United States and the Need for a Reconciliation Involving International Indigenous Human Rights Norms*, 39 WM. MITCHELL L. REV. 486, 508–09 (2013). The United States creation of food insecurity for Dakota peoples commenced just after statehood. See *id.* In the summer of 1862, the U.S. government annuity payments for the Dakota were not forthcoming as promised pursuant to treaty agreements. *Id.* at 509. In July 1862, 4000 Dakota and 1000 Yankton had assembled for payment distribution with next to nothing to eat. *Id.*

Little Crow, speaking for some hundreds of Indians present, said: "We have waited a long time. The money is ours, but we cannot get it. We have no food, but here are these stores, filled with food. We ask that you, the agent, make some arrangement by which we can get food from the stores, or else we may take our own way to keep ourselves from starving. When men are hungry they help themselves."

Id.

121. See U.N. INTER-AGENCY SUPPORT GRP., *THE KNOWLEDGE OF INDIGENOUS PEOPLES AND POLICIES FOR SUSTAINABLE DEVELOPMENT: UPDATES AND TRENDS IN THE SECOND DECADE OF THE WORLD'S INDIGENOUS PEOPLE 2* (2014); see also ECHO-HAWK, *supra* note 101, at 152 (proposing a land ethic that integrates traditional indigenous wisdom).

B. *U.N. International Convention on the Elimination of All Forms of Racial Discrimination*

As noted above, Minnesota's racially concentrated areas of poverty in urban areas are unnecessarily experiencing disproportionate exposure to pollution *and* are at the brunt of some of the worst racial disparities in the country.¹²² For indigenous communities and communities of color in Minnesota, the state is witnessing a pattern of cumulative discriminatory impacts in the form of disparities in areas of health, housing, education, economic, and other opportunities which make them particularly vulnerable to climate change, including projected food insecurity.¹²³ It is in this critical light that the United Nations Convention on all Forms of Racial Discrimination (the Convention) obligates state and local governments to address the disparities that have created unequal outcomes based on race.¹²⁴

The United States ratified the Convention in 1994.¹²⁵ As a signatory party, the United States is obligated to prohibit and eliminate all forms of racial discrimination,¹²⁶ including laws, acts, and practices that have discriminatory *effect*.¹²⁷

122. See MDH REPORT, *supra* note 74, at 17 (discussing economic conditions as predictors for health disparities); METRO. COUNCIL, *supra* note 43, *passim* (discussing racially concentrated areas of poverty in Minnesota); Benson, *supra* note 43, *passim* (discussing racial disparity in asthma rates among urban residents). See generally NAT'L URBAN LEAGUE, *supra* note 79, at 115 (discussing history of health disparities in America); Powell, *supra* note 65, at 803 (discussing racial isolation and its effects on health).

123. See METRO. COUNCIL, *supra* note 43, at 1.

124. International Convention on the Elimination of All Forms of Racial Discrimination, Sept. 28, 1966, 660 U.N.T.S. 195 (entered into force Sept. 28, 1966) [hereinafter Convention]; see also *id.* art. 2(1)(c) ("Each State Party shall take effective measures to review governmental, national and local policies, and to amend, rescind or nullify any laws and regulations which have the effect of creating or perpetuating racial discrimination wherever it exists.").

125. *Id.* pt. I, art. 1, para. 1.

126. *Id.* ("[R]acial discrimination [means] any distinction, exclusion, restriction or preference based on race, colour, descent, or national or ethnic origin which has the purpose or effect of nullifying or impairing the recognition, enjoyment or exercise, on an equal footing, of human rights and fundamental freedoms in the political, economic, social, cultural or any other field of public life.").

127. *Id.* art. 2 ("States Parties condemn racial discrimination and undertake to pursue by all appropriate means and without delay a policy of eliminating racial discrimination in all its forms and promoting understanding among all races

The Convention establishes a mechanism for periodic review of state parties, requiring the United States to submit a written report on its activities toward eliminating racial discrimination in compliance with the Convention.¹²⁸ Although the Convention is not domestically self-executing, United States citizens and groups are permitted to bring their concerns—and have brought them—to the United Nations committee overseeing the United States' compliance with the Convention.¹²⁹

The Convention language further recognizes the “collective rights of indigenous people,” and that “[a]ctivities [or practices] which deprive indigenous groups of access to resources, force such groups to leave their territory, or negatively affect their religious practices or traditional way of life, implicate [their] economic, social, and property rights.”¹³⁰

Minnesota's existing racial disparities are a prime example of how our laws and practices have resulted in discriminatory effect, presumably without intent. These cumulative discriminatory impacts are indicative of failed government policies and practices and expose a pattern of sanctioning unequal treatment based on race and income.¹³¹

In concert with the Convention, state and local policymakers must address root causes of disparities and design and implement measures to eliminate the disparities that will be aggravated by climate change impacts. Government actors must ensure just and meaningful access to land in cities where environmental justice communities live, providing the leverage to build climate adaptability and resiliency while eliminating policies that have discriminatory effects.

Each State Party shall take effective measures to review governmental, national and local policies, and to amend, rescind or nullify any laws and regulations which have the *effect* of creating or perpetuating racial discrimination wherever it exists.” (emphasis added)).

128. *Id.* pt. II, art. 9.

129. *Medellin v. Texas*, 552 U.S. 491, 504–05 (2008).

130. UNITED NATIONS ENV'T PROGRAMME, *supra* note 113, at 11.

131. *See* powell, *supra* note 65, at 797 (“The recognition that racialized outcomes are a product of cumulative causation is not new. . . . [T]he ‘principle of cumulative causation’ as a ‘vicious circle’ [is] due to the close interrelation of housing, employment, health, civil rights, and political power.”).

VI. DEVELOPMENT CHALLENGES TO EQUITABLE FOOD SECURITY

Development policies should build climate resilience within environmental justice communities and avoid creating deeper disparities. Historically, Minnesota's urban development venerated the promise of increased economic growth trickling to all residents in a city; however, in reality, this idea and its application has created egregious disparities in Minnesota cities, particularly in housing, health, education, and economic opportunities.¹³² To tackle existing race- and income-based disparities, policymakers should be informed by a well-articulated principle that "government objectives are best achieved when all sectors include health and well-being as a key component of policy development . . . because the causes of health and well-being lie outside the health sector and are socially and economically formed."¹³³

To consider climate-resilient development, the first inquiry should be: To what end has urban development functioned? Who benefits and how? At the outset, the stated objectives of climate resilient development should be to address racial and economic disparities.

In some respects, movements toward "equitable development" or "smart growth" have attempted to address the unfairness of historic development and also to preserve the natural environment by creating livable and walkable communities, thereby minimizing residents' ecological footprint.¹³⁴ However, for urban

132. See *supra* notes 74–84 and accompanying text. See generally Gregory D. Squires, *Demobilization of the Individualistic Bias: Housing Market Discrimination as a Contributor to Labor Market and Economic Inequality*, 609 ANNALS AM. ACAD. POL. & SOC. SCI. 200, 204–06 (2007) (discussing how practices by housing providers, government policies, and lack of enforcement of existing civil rights law fueled and exacerbated racial inequalities). "[H]ousing patterns and practices . . . contribute to disparities in housing consumption and broader economic inequalities generally. Where different groups of people live and the homes in which they live are not simply neutral or random demographic phenomena. They profoundly influence the allocation of rewards in the United States." *Id.* at 206–07.

133. Wiley, *supra* note 66, at 673. (quoting WORLD HEALTH ORG., ADELAIDE STATEMENT ON HEALTH IN ALL POLICIES: MOVING TOWARDS A SHARED GOVERNANCE FOR HEALTH AND WELL-BEING 1 (2010)).

134. See Angela Glover Blackwell, *Promoting Equitable Development*, 34 IND. L. REV. 1273, 1278–79 (2001) ("Equitable development includes policies and practices to promote and manage regional economic growth in a way that maximizes benefits for residents of low-income communities of color throughout

environmental justice communities, equitable development has not reversed trends afflicting Minnesota's communities of color where health, economic, and other disparities, including those related to food security, are present. The idea that equitable development is calculated to reduce health, housing, and economic inequalities within environmental justice communities lacks promise unless it can deliver. A failure to address the most glaring needs of environmental justice communities is arguably not development; rather, it concedes to the perpetuation of different treatment of inner-city residents based on race and socioeconomic class.¹³⁵

Cities must look at the economic impact of mortgage lending coupled with the propensity of development to exploit low-income communities by appropriating and exporting local capital (i.e., wages earned and paid in the form of subprime mortgages stemming from the recent 2007 economic crisis).¹³⁶ Lending institutions unfairly targeted communities of color for subprime

metropolitan regions.”). Glover Blackwell has identified two key dimensions of equitable development: (1) equity must be at the forefront of the discussion and (2) an important component is the “blending of people and place strategies.” *Id.* “[P]eople strategies are investments in human capital, such as workforce development and safety net programs,” while “[p]lace strategies revolve around bolstering or safeguarding the physical infrastructure, the types of activities implicated by transportation or environmental policy.” *Id.* *But see* Susan Haigh, *The Metropolitan Council*, 40 WM. MITCHELL L. REV. 160, 220 (2013) (offering a more diminished view of equitable development by public, private, and philanthropic sectors and stressing “[t]he principle of equitable development” is “to ensure that everyone regardless of race, economic status, ability or the neighborhood in which they live has a access [sic] to essential ingredients for environmental, economic, social and cultural well-being including: living wage jobs, entrepreneurial opportunities, viable housing choices, public transportation, good schools, strong social networks, safe and walkable streets, services, parks and access to healthy food” (quoting *Definition and Principle of Equitable Development*, CORRIDORS OPPORTUNITY (Nov. 30, 2011), <http://corridorsofopportunity.org/sites/default/files/Definition-and-principle-of-equitable-development-adopted-November-30-2011.pdf>)); *Smart Growth*, EPA, http://www.epa.gov/smartgrowth/about_sg.htm (last updated Oct. 30, 2013); *Smart Growth and Equitable Development*, EPA, <http://www.epa.gov/piedpage/equitabledev.htm> (last visited Nov. 7, 2014).

135. *See* powell, *supra* note 65, at 797 (explaining that “racialized outcomes are a product of cumulative causation” which becomes a “‘vicious circle’ due to the close interrelation of housing, employment, health, civil rights, and political power” (quoting 1 GUNNAR MYRDAL, *AN AMERICAN DILEMMA: THE NEGRO PROBLEM AND MODERN DEMOCRACY* 75–78 (1944))).

136. *See* INST. ON METRO. OPPORTUNITY, *TWIN CITIES IN CRISIS: UNEQUAL TREATMENT OF COMMUNITIES OF COLOR IN MORTGAGE LENDING 1* (2014).

lending, which resulted in unequal loss of foreclosed homes, racializing and expanding what some would consider the “landless” class.¹³⁷ Communities of color were set back further from having any meaningful opportunity towards food security through urban agricultural crop production on meager backyard plots.

A recent report issued by the Center for Metropolitan Opportunity at the University of Minnesota Law School highlighted this trend: in the Twin Cities metropolitan area, communities of color were subjected to higher rates of discriminatory subprime lending and suffered subsequent wealth loss significantly related to foreclosure in comparison to their more affluent white counterparts.¹³⁸ Discriminatory patterns in mortgages provoked economic and housing disparities, thereby creating a large urban homeownership^{less} class, and, thus, a landless class.¹³⁹ Many who lost their homes to foreclosure unwillingly joined the ranks of renters.¹⁴⁰ Though they may have previously held a bit of space for outdoor agriculture in their back yards (albeit with the possibility of polluted soil), these communities were pushed out of their meager land holding.¹⁴¹ Low-income urban *renters* of color experience similar landless fate.

137. *See id.*

138. *Id.*

Communities of color have been hardest hit by the mortgage meltdown. Before the housing crisis, subprime lenders targeted people of color, racially diverse neighborhoods and majority non-white areas. Between 2004 and 2006, exactly half of the mortgage loans received by black homeowners were subprime, compared to 37% for Hispanics, 20% for Asians and just 10% for whites.

Id.; see LEE EGERSTROM & LEIGH ROSENBERG, MINNESOTA 2020, UNEVEN RECOVERY: A LOOK BACK AT MINNESOTA’S HOUSING CRISIS 3, 11–12 (2014).

139. *See, e.g., Mapping RVA*, HOUSING OPPORTUNITIES MADE EQUAL VA., INC., <http://www.phonehome.org/GetInvolved/Events/MappingRVA> (last visited Nov. 14, 2014).

The subprime lending spree that precipitated the foreclosure crisis and the near collapse of the U.S. economy had disastrous effects on minority neighborhoods across the country. Touted as a way to expand homeownership opportunities to families that wouldn’t qualify for traditional mortgage products, subprime lending had the effect of stripping any remaining wealth in minority neighborhoods and essentially creating a new landless class.

Id. map 4.

140. *See* EGERSTROM & ROSENBERG, *supra* note 138, at 11–12.

141. *See id.*

Climate adaptation policies seeking to build resilient communities require a rethink of the current development model. If development continues to be anchored in the garden-variety public-private partnership, environmental justice communities will be without property or access to land, pushing them further into the fringes of food insecurity. The traditional public-private partnership in the context of building climate resilient communities may be “maladaptive” and transmogrify the intent of fortifying environmental justice communities.¹⁴² Development that continues to be business as usual may permit market rate rent prices to climb, leaving low-income communities continually priced out of markets or steered out of both development and lending schemes.¹⁴³

Our society cannot afford to divorce the notion of land use development intended to build climate-resilient cities from the mandate to end economic, housing, and other disparities. To the contrary, policymakers should ask what role development has played in creating existing disparities, and how the objective of building a climate-resilient city can move to eradicate them. In this inquiry, cities must begin to acknowledge the asymmetrical relationship between private development—whose major goal is to turn a profit by investing in development projects—and city leaders whose task it is to ensure access to food and water for the city’s most vulnerable residents. Further, any well-intentioned green development investment benefit towards food security and meant for low-income communities of color can easily slip to benefit predominantly white and more affluent individuals who can afford

142. Donahue, *supra* note 38, at 351 (citing ROBERT REPETTO, *THE CLIMATE CRISIS AND THE ADAPTATION MYTH* 2 (Jane Coppock ed., 2008)).

143. Alice Kaswan, *Environmental Justice and Domestic Climate Change Policy*, 38 ENVTL. L. REP. NEWS & ANALYSIS 10,287, 10,311 (2008) (“One mechanism for reducing [GHG] emissions from the transportation sector could be greater infill within urban areas. If land use policies encourage greater development within urban areas, that development could increase land values. That increase could revitalize and benefit some inner-city communities. However, it could also cause gentrification that could adversely impact poor neighborhoods by increasing property values above the level sustainable by existing community members. In addition, redevelopment projects could end up replacing inner-city housing with higher priced housing units. Climate change policies implicating land use will need to address affordable housing impacts.”); Adam Belz, *Minneapolis Is a Leader in Trend Toward Gentrification*, STAR TRIB., <http://www.startribune.com/business/268974471.html> (last updated July 29, 2014, 11:29 AM).

market prices or obtain a loan without concern for discriminatory lending practices.¹⁴⁴ Without substantive access to land through homeownership opportunities, greening communities of color where renters dominate the market will not ensure food security but may result in creating a regressive public policy that is disguised as building climate resiliency within environmental justice communities.¹⁴⁵

VII. LAND USE STRATEGIES FOR CLIMATE-JUST FOOD SECURITY

From the outset, local and regional policymakers must comprehensively plan for long-term food security to absorb abrupt changes in the Midwest's food supply.¹⁴⁶ Current corporate food production methodologies and global dependencies will be inadequate to respond to these expected disruptions.¹⁴⁷ Instead, a comprehensive approach to food security requires: (1) *availability*, which means providing sufficient *quantities* of culturally appropriate foods to meet the needs of environmental justice populations; (2) *stability* from disruptions, providing access to adequate food at all times (as opposed to being vulnerable to sudden shocks in food supply); (3) *access* through localized production, which in turn requires access to land within cities; and (4) *utilization*, which entails the necessary support to properly prepare food to meet nutritional and cultural needs, including access to a sufficient *diversity* of foods to form a healthy diet.¹⁴⁸

To honor this comprehensive definition of food security, the author proposes an approach which accords minimal human rights standards for indigenous peoples and people of color in urban

144. See Kaswan, *supra* note 143, at 10,311.

145. See *id.*

146. See Pryor et al., *supra* note 23, at 419 (stating that extreme weather events cause stresses to agriculture in the Midwest, including “economic shocks such as crop failures or reduced yields due to extreme weather events”).

147. See Pörtner et al., *supra* note 34, at 163 (recognizing that the U.S. needs to adapt its food systems to address projected impacts caused by climate change, which includes “policies to ensure food access for disadvantaged populations and during extreme events” and “because about one-fifth of all food consumed in the U.S. is imported, our food supply and security can be significantly affected by climate variations and changes in other parts of the world”); see also Hatfield et al., *supra* note 22, at 162–63.

148. Cf. UNITED NATIONS FOOD & AGRIC. ORG., AN INTRODUCTION TO THE BASIC CONCEPTS OF FOOD SECURITY 1 (2008).

environments¹⁴⁹—and which also includes rapid advancement of urban agriculture and ecosystems restoration¹⁵⁰—within and near environmental justice communities. An ecosystem-based approach would (1) ensure access to foods that are both nutritionally diverse and culturally appropriate, and (2) acknowledge the interconnectivity and integration of ecological systems with human life. Although there is some movement in metropolitan cities to promote urban agriculture by passing new zoning laws,¹⁵¹ this can only be seen as the first step in a lengthy process to respond to projected shocks to food supply systems and the greater threat to Minnesota's urban food security.¹⁵² The following recommendations are designed to promote new thinking towards tackling projected climate change induced food insecurity and traction towards climate resiliency within environmental justice communities.

A. *Incorporating Human Rights Standards into Food Security*

In consultation with Dakota peoples (and other urban indigenous peoples), regional and municipal planning and development should incorporate concepts of indigenous human rights into the development of urban agriculture and ecosystem restoration.¹⁵³ Pursuant to the Declaration, state and local governments should recognize both individual and collective indigenous human rights to urban ancestral lands, waters, and ecosystems necessary for food security.¹⁵⁴ How state and local governments acknowledge and advance indigenous human rights norms will determine whether local governments achieve equitable outcomes towards climate adaptation and resilience building in urban areas.

149. See *supra* Part V.

150. See ENVTL. JUSTICE WORKING GRP., CITY OF MINNEAPOLIS, MINNEAPOLIS CLIMATE ACTION PLAN app. C, at 12 (2013) (introducing proposed recommendations regarding urban forests and perennial landscapes).

151. See, e.g., MINNEAPOLIS, MINN. CODE OF ORDINANCES tit. 20, § 537.110 (2014) (allowing animal coops, cold frames, hoop houses, and market gardens in residential districts); MADISON, WIS., ORDINANCES ch. 28, subch. 28B, §§ 28.021(5), .091 (2013) (adopting "special districts" for agriculture and urban agriculture).

152. See *Overview of 2014 Assessment*, *supra* note 15, at 17.

153. See *supra* Part V.A.

154. See *supra* Part V.A.

Similarly, for communities of color, state and local governments (both urban and rural) should apply human rights standards set forth in the Convention to eliminate existing disparities that create vulnerability to climate change impacts and meaningfully involve communities of color in climate change adaptation and resiliency building.¹⁵⁵

B. *Climate Justice in Housing*

A substantial part of the planning equation requires the localization of food via urban and peri-urban agriculture in development projects.¹⁵⁶ By localizing food supply chains—from seed, to table, to compost—cities will increase the food security of their residents. However, in many cities throughout the country, anticipated moves toward climate adaptation and resilience building are made by those who own or control land.¹⁵⁷ Homeownership reasonably provides some access to land for urban agriculture purposes.¹⁵⁸ Members of Minnesota’s urban environmental justice communities are least likely to own their own homes.¹⁵⁹ If the process of localizing food production is to be equitable, environmental justice communities must be included in homeownership opportunities and long-term homeownership retention. Thus, climate adaptive and resilient development must be instituted to eliminate housing disparities. More

155. See *supra* Part V.B.

156. See Aromar Revi et al., Intergovernmental Panel on Climate Change, *Urban Areas*, in WORKING GROUP II REPORT, *supra* note 4, at 568 (“Adaptive local responses [to food insecurity] include support for urban and peri-urban agriculture, green roofs, [and] local markets . . .”); see also Cutter et al., *supra* note 28, at 285 (discussing cascading disruptions that occur when one link in an interdependent market supply chain is effected by climate-induced events).

157. See J. Kevin Healy & L. Margaret Barry, *Local Initiatives*, in GLOBAL CLIMATE CHANGE AND U.S. LAW 375, 389 (Michael B. Gerrard & Jody Freeman eds., 2014) (“Local adaptation measures have been described as falling into two broad categories: ‘autonomous adaptation’—steps taken by private parties, which can be induced either by policy ‘carrots’ such as tax incentives, or by regulatory ‘sticks’ such as zoning laws and building codes; and ‘planned adaptation’—steps taken directly by government entities to protect against effects on infrastructure, agriculture, natural resources, and public health.” (citing Elizabeth C. Black, *Climate Change Adaptation: Local Solutions for a Global Problem*, 22 GEO. INT’L ENVTL. L. REV 359, 362 (2010))).

158. See Schindler, *supra* note 2.

159. See *Homeownership Gap*, *supra* note 75.

homeownership means more access to backyards to grow local food.

Additionally, development plans for new housing construction, rehab, or any other opportunities for homeownership in the inner city should include affordable housing scaled for wage earnings of those living at or below two hundred percent of the federal poverty level. This strategy of equitable planning should be included for all residential and mixed-use development projects in and near environmental justice communities. Further, to prevent the gentrification and displacement of environmental justice communities due to the influx of investment dollars that may inflate market rate rental housing units, policymakers should consider the application of rent controls to ensure community greening investment (under the guise of climate adaptation and resilience building) does not result in eviction notices for environmental justice community members.¹⁶⁰

C. *Converting Vacant Lots for Urban Agriculture*

Municipalities should consider converting vacant government-held lots for urban agriculture production and ecosystem restoration.¹⁶¹ Additionally, local governments should survey vacant

160. In general, rent controls are prohibited in Minnesota cities for private residential property. MINN. STAT. § 471.9996, subdiv. 1 (2012). However, a municipality, pursuant to its charter, ordinance or other law has the power to adopt the law to control rents on private residential property if the law that controls rents is approved in a general election. *Id.* subdiv. 2; *see also* Bolin Lumber Co. v. Chi. & N.W.R. Co., 134 N.W.2d 312 (Minn. 1965) (holding that the statutory authority of railway commission to fix rents effectively provided the power of eminent domain under MINN. CONST., art. 1, § 13; thus, statutes permitting rent fixing had to be construed to require “public use” of the property). Rent controls have survived both U.S. constitutional and antitrust challenges. *See* Yee v. City of Escondido, Cal., 503 U.S. 519, 529 (1992) (“When a landowner decides to rent his land to tenants, the government may place ceilings on the rents the landowner can charge . . . without automatically having to pay compensation.”); *Pennell v. San Jose*, 485 U.S. 1, 15 (1988) (holding that a San Jose, California ordinance concerning rent control did not facially violate the Equal Protection Clause); *Fisher v. City of Berkeley*, 475 U.S. 260, 270 (1986) (“Because under settled principles of antitrust law, the rent controls established by Berkeley’s Ordinance lack the element of concerted action needed before they can be characterized as a *per se* violation of § 1 of the Sherman Act, we cannot say that the Ordinance is facially inconsistent with the federal antitrust laws.”).

161. *See, e.g., City Owned Vacant Lots Available for Community Gardens*, CITY MINNEAPOLIS (Jan. 12, 2012), <http://www.ci.minneapolis.mn.us/news/WCMS1P>

lands within and near environmental justice communities and exercise their power of eminent domain to transform vacant lots into permanent tracts for food security (whether for agricultural use or ecosystem restoration).¹⁶² To condemn property, Minnesota law requires local governments to show both that the condemnation is necessary and that it serves a public purpose.¹⁶³ Public purposes include opening the land to use by the general public¹⁶⁴ or renovating abandoned property.¹⁶⁵ The use of eminent domain to acquire land for food security is arguably a necessary public health measure in response to climate change.¹⁶⁶

-084669 (describing ten vacant lots available for lease).

162. “All cities may exercise the power of eminent domain for the purpose of acquiring private property within or without the corporate limits thereof for any purpose for which is authorized by law.” MINN. STAT. § 465.01. However, “public purpose” is defined exclusively to mean:

- (1) the possession, occupation, ownership, and enjoyment of the land by the general public, or by public agencies;
- (2) the creation or functioning of a public service corporation [such as utilities]; or
- (3) mitigation of a blighted area, remediation of an environmentally contaminated area, reduction of abandoned property, or removal of a public nuisance.

Id. § 117.025, subdiv. 11; *see also id.* § 117.012, subdiv. 2 (“Eminent domain may only be used for a public use or public purpose.”). A “blighted area” is defined as an urban area where more than fifty percent of the buildings meet specified building code violations. *Id.* subdivs. 6–7. “Environmentally contaminated areas” contain hazardous substances in more than fifty percent of parcels and remediation costs exceed the fair market value of the property. *Id.* subdiv. 8. A “public nuisance” includes “a condition which unreasonably annoys, injures or endangers the safety, health, morals, comfort, or repose of any considerable number of members of the public.” *See id.* § 609.74(1) (cross-referenced by *id.* § 117.025, subdiv. 9).

163. *State ex rel. Comm’r of Transp. v. Kettleston*, 801 N.W.2d 160, 164 (Minn. 2011).

164. MINN. STAT. § 117.025, subdiv. 11(1).

165. *Id.* subdiv. 11(3). “Abandoned property” is defined as:

- [P]roperty that: (1) has been substantially unoccupied or unused for any commercial or residential purpose for at least one year by a person with a legal or equitable right to occupy the property; (2) has not been maintained; and (3) for which taxes have not been paid for at least two previous years.

Id. subdiv. 5.

166. *Cf. Kettleston*, 801 N.W.2d at 167 (“[T]he requisite necessity for a taking to accomplish a public purpose is not absolute necessity; rather, [i]t is enough to find that the proposed taking is reasonably necessary or convenient for the furtherance

D. Zoning for Urban Agriculture

Changes in zoning may also be necessary to ensure that communities can engage in sustainable agricultural activities. The Minnesota legislature has delegated planning to cities “to insure a safer, more pleasant and more economical environment for residential, commercial, industrial and public activities, to preserve agricultural and other open lands, and to promote the public health, safety, and general welfare.”¹⁶⁷ A city’s power to regulate zoning is not just for building construction, but also for agriculture, forestry, and soil and water conservation.¹⁶⁸

Recognizing the interconnectivity of Minnesota’s most densely populated area and the need for a more coordinated planning apparatus that takes into account concentrated urbanization, pollution, water concerns, and other issues, the legislature singled out the metropolitan region.¹⁶⁹ It passed the Metropolitan Land Planning Act,¹⁷⁰ creating the Metropolitan Council¹⁷¹ to coordinate regional development.¹⁷²

of a proper purpose.” (internal quotation marks omitted) (citing *City of Duluth v. State*, 390 N.W.2d 757 (Minn. 1986))).

167. MINN. STAT. § 462.351, subdiv. 1.

168. *Id.* § 462.357, subdiv. 1.

169. *See id.* § 473.851 (finding that “local governmental units within the metropolitan area are interdependent, that the growth and patterns of urbanization within the area create the need for additional state, metropolitan and local public services and facilities and increase the danger of air and water pollution and water shortages, and that developments in one local governmental unit may affect the provision of regional capital improvements for sewers, transportation, airports, water supply, and regional recreation open space”).

170. Metropolitan Land Planning Act of 1976, ch. 127, 1976 Minn. Laws 292.

171. MINN. STAT. § 473.123, subdiv. 1.

172. Haigh, *supra* note 134, at 162. In alignment with the Council’s region planning, a municipality develops its own “comprehensive plan” detailing how it intends to pursue development. *See* MINN. STAT. §§ 473.858, .862 (describing scope of comprehensive plans); *id.* § 473.859, subdiv. 1 (describing content of comprehensive plans). The city’s governing body (i.e., a city council) may pass zoning laws in line with its comprehensive plan, *id.* § subdiv. 4(1), which serves as the visionary compass for a city’s land use and provides for strategic economic development and for promoting healthy communities, *id.* § 462.351. Cities within the metropolitan region prepare their comprehensive plans in consultation with and under the approval of the Council to align with the metropolitan system’s plan. *Id.* §§ 473.864, subdiv. 2, 473.175, subdiv. 1, 473.851, 473.865, subdiv. 2. A municipality’s comprehensive plan assists the city in planning for physical, social, and economic development. *See id.* § 473.859, subdiv. 1. Land use plans provide for

Within urban environmental justice communities, policymakers should use their authority to designate aggregated agriculture tracks,¹⁷³ scaled to provide for food crop needs, with secure access to clean water and soil.¹⁷⁴ Policymakers should ensure zoned space and resources for methodologies that account for the full lifecycle of crop production—from seed, to plant, to table, and back to earth.¹⁷⁵ They should also include reforestation as part of a public health initiative to address disparities in tree canopy in environmental justice neighborhoods, which could satisfy both the need for traditional foods (such as fruit trees) and ecosystem restoration.¹⁷⁶

E. Integrating Indigenous Ecological Knowledge

As applied to urban indigenous communities, there is an additional factor: the interrelation between land and traditional indigenous knowledge, which is often not recognized by local government policymakers. Cities should align agriculture and environmental land use regulation and practices to fully recognize the traditional ecological knowledge and practices of indigenous

the use of urban land and water and for “land use compatibility, habitat, agricultural preservation, and other planning priorities.” *Id.*

173. See, e.g., MINNEAPOLIS, MINN., CODE OF ORDINANCES § 537.110 (2014) (expanding urban agriculture to include land use for market gardens and urban farms).

174. See, e.g., Corinne Kisner, *Green Roofs for Urban Food Security and Environmental Sustainability*, CLIMATE INST. (Dec. 2008), <http://climate.org/topics/international-action/urban-agriculture/havana.htm> (“[O]ver 26,000 gardens cover 2,439 hectares in Havana and produce 25,000 tons of food annually. 40% of households are involved in urban agriculture in Havana. Organic urban agriculture evolved from a survival mechanism to a popular means of supplementing income, diversifying diets, and achieving independence and self-sufficiency in a city setting.”).

175. See Donahue, *supra* note 38, at 373 (citing Paul Mader, et al., *Response*, 298 SCI. 1889, 1890 (2002) (recognizing that large conventional agricultural models in the United States have contributed to “irreversible soil degradation, declines in biodiversity, and loss of arable land” and that we do not want to repeat this model in our urban environments)).

176. See CITY OF MINNEAPOLIS, *supra* note 150, app. C, at 12; LEAGUE OF MINN. CITIES, INFORMATION MEMO: ZONING GUIDE FOR CITIES 6 (2012); see, e.g., MINNEAPOLIS, MINN., CODE OF ORDINANCES § 530.80 (permitting PUD alternatives including amenities like “additional open space, additional landscaping and screening, green roof . . . preservation of natural features, [and] restoration of previously damaged natural environment”).

peoples in their territorial homelands and with ecosystems.¹⁷⁷ Policymakers should ensure the restoration of metro-area ecosystems to incorporate indigenous edible and medicinal landscapes, shading, and related water ecosystems that regenerate and preserve traditional food and medicinal sources for access to ensure equitable food security.

F. Integrating Climate-Just Food Security into Planning Decisions

State and local governments should formalize an understanding and practice of the interconnectivity of healthy ecosystems, human systems, and access to land and water by stipulating its primacy in all development decision making. Further, they should engage in a systemic analysis of every development decision made to include an equitable climate adaptability and resiliency lens, and incorporate the precautionary principle into statute.¹⁷⁸ Food security must be placed at the forefront of all development decision making to address current health, economic, housing, and other disparities.

For example, municipalities should consider the impact of density on the food security of inner city environmental justice communities. The Minneapolis Park Board recently acknowledged that anticipated growth in population and competition for land created a tension in providing land for urban agriculture.¹⁷⁹ The Board stated, "With the population of the region expected to grow nearly a third by 2030, this growth makes preserving land for outdoor recreation and natural spaces within developed cities more difficult, and challenges existing policy when considering large-scale agricultural use like urban farms on regional park

177. See *supra* Part IV.B.

178. Donahue, *supra* note 38, at 357. It is recommended (1) that "adaptation policies should be ecosystem based," because "an ecosystem-based approach can provide a framework for integrating policies and practices among sectors and at different scales" and (2) that government adaptation planning should be conscious of making critical tradeoffs in agriculture planning, preservation of water, and restriction of agrichemical use, and that policymakers and regulators should be cognizant of "the importance of incorporating adaption in core policies and programs and the importance of ensuring that strategies are cross-sectoral and integrative." *Id.*

179. MINNEAPOLIS PARK & RECREATION BD., URBAN AGRICULTURE ACTIVITY PLAN 4 (2014).

property.”¹⁸⁰ Thus, the idea of density in cities must give pause to consider the implications for food security. Cities must acknowledge social and public health limits to density growth as they strive to ensure food security for its residents.

There are some hints that development strategies are beginning to move toward ecosystem integration in urban environments, recognizing “ecosystems’ . . . supporting [role in] human capabilities.”¹⁸¹ It is in this sense that “[e]conomic objectives [in development] must be subordinate to the laws that determine how natural systems operate without losing sight of the respect for human dignity and the need to improve the quality of life of people and communities.”¹⁸² This would include the ability to eradicate existing racial disparities in health, housing, and employment.

Other areas of environmental law have used the legal maxim *primum non nocere*, “first, do no harm,” often referenced as the “precautionary principle.”¹⁸³ This principle should be made statutorily applicable to all urban development and should require the rehabilitation of traditional native plant life and ecosystems.¹⁸⁴

180. *Id.*

181. Lyster, *supra* note 6, at 33.

182. Alberto Acosta, *Extractivism and Neextractivism: Two Sides of the Same Curse*, in *BEYOND DEVELOPMENT: ALTERNATIVE VISIONS FROM LATIN AMERICA* 61, 81 (M. Lang & D. Mokrani eds., 2013).

183. BLACK’S LAW DICTIONARY 1366 (10th ed. 2014).

184. See Clifford Rechtschaffen, *Advancing Environmental Justice Norms*, 37 U.C. DAVIS L. REV. 95, 112 (2003) (“[T]he precautionary principle has emerged as an important framework for public policy. The precautionary principle has different formulations, but at its core provides that when an activity raises potential threats to the environment or human health, precautionary measures should be taken even if there is scientific uncertainty about those impacts.”). See, for example, *In re Water Use Permit Applications*, 9 P.3d 409, 426 (Haw. 2000), in which the Hawaii Supreme Court affirmed a decision of the state’s Commission on Water Resource Management to use the “precautionary principle” in its decision making. The Commission had made the following conclusion of law:

Where scientific evidence is preliminary and not yet conclusive regarding the management of . . . resources which are part of the public trust, it is prudent to adopt “*precautionary principles*” in protecting the resource. That is, where there are present or potential threats of serious damage, lack of full scientific certainty should not be a basis for postponing effective measures to prevent environmental degradation. . . . In addition, where uncertainty exists, a trustee’s duty to protect the resource mitigates in favor of choosing presumptions that also protect the resource.

For instance, where indigenous plants, small bushes, or trees connected by a shared ecosystem have historically flourished, they can necessarily benefit environmental justice communities by providing food or medicine, in addition to shading and cooling.¹⁸⁵ Any new development planning for the affected neighborhood should (1) halt further destruction and deforestation and (2) include restoration of the ecosystems.

Additionally, as cities engage in land use planning for food security, they should maximize concomitant reductions of environmental harms and existing racial disparities by considering the following factors: (1) the impact of air quality on racial health disparities, (2) the reduction of GHG emissions, (3) the effect of planning on livable and walkable areas within environmental justice communities, (4) the effect of planning on livable wage jobs, (5) stability in housing for individuals and families, (6) the effect of density growth on water quality and accessibility, and (7) the impact of density growth on heat island effects.¹⁸⁶

G. *Engaging Environmental Justice Communities in Decision Making*

Throughout the process of incorporating food security into climate adaptation and resiliency decision making, governments must engage environmental justice communities in a meaningful way.¹⁸⁷ When seemingly benign efforts to address climate change and other related socioeconomic issues are fashioned without meaningful input from the communities who are affected by them, the result is often continued separation and differential treatment based on race and class. To allow this is tantamount to conceding to the orchestration of unequal treatment, thereby exasperating the environmental justice communities' ability to adapt and build climate resiliency. Moreover, a well-intentioned climate change policy, rule, or law not properly constructed or implemented and made without meaningful consultation and decision making from environmental justice communities is not only tragic, but misses

Id. (quoting Conclusions of Law ¶ 33 (Haw. Comm'n Water Resource Management Dec. 24, 1997)).

185. CITY OF MINNEAPOLIS, *supra* note 150, app. C.

186. Donahue, *supra* note 38, at 351; *see* MDH REPORT, *supra* note 74, at 30 (noting that many co-benefit considerations align with MDH Health Equity report recommendations); Jacoby et al., *supra* note 9, at 656.

187. PLAN EJ 2014, *supra* note 56.

the whole point of eliminating climate vulnerabilities. This would constitute “sadism masked as compassion.”¹⁸⁸ Thus, acknowledging the burden of acute vulnerabilities Minnesota’s environmental justice communities carry is rooted in racial and economic disparities, land use law and policies in Minnesota’s urban regions must be poised to address these climate change vulnerabilities—requiring the meaningful inclusion and decision making from within communities of color and indigenous communities in order to achieve food security in the face of climate change.

VIII. CONCLUSION

As state and local governments deliberate climate change policy and practices, they are called to work directly with the most vulnerable of those impacted by climate change and shift the climate adaptation- and resilience-building paradigm to eliminate existing disparities as a necessary corollary to addressing food security. Policymakers are challenged to rapidly eliminate disparities in environmental justice communities, as the burden of cumulative disparities based on race and socioeconomic class create vulnerable conditions wholly incompatible with building climate-resilient urban communities.¹⁸⁹ In this process, state and local governments must reconsider historic and fundamental land use practices affecting environmental justice communities. Equitable, strategic land use planning and implementation can help eliminate existing disparities and also prepare environmental justice communities for climate change. Without meaningful access to clean land and water for urban indigenous communities, communities of color, and low-income communities, there will be de facto discrimination in food security strategies and the very survival of these communities will be at stake.

188. Noam Chomsky, Professor Emeritus, MIT, quoted a famous Israeli journalist concerning policies in the Gaza strip in the Middle East as “sadism masked as compassion.” *Noam Chomsky on Media’s “Shameful Moment” in Gaza & How a U.S. Shift Could End the Occupation*, DEMOCRACY NOW! (Aug. 11, 2014), http://www.democracynow.org/2014/8/11/noam_chomsky_on_medias_shameful_moment.

189. Powell, *supra* note 65, at 792 (citing John O. Calmore, *Race/ism Lost and Found: The Fair Housing Act at Thirty*, 52 U. MIAMI L. REV 1067, 1073 (1998)) (“[R]acism operates so effectively that we seldom distinguish racist harms from a variety of other harms that categorically run from ‘bad luck’ to ‘natural catastrophes’ Hurricane Katrina tragically illustrated this point.”).