



CORN MEETS MAIZE

FOOD MOVEMENTS AND MARKETS IN MEXICO

LAUREN E. BAKER

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To Cameron Collyer, with love and gratitude

Contents

[Contents](#)

[Preface and Acknowledgments](#)

[Chapter 1: Why Food? Why Corn and Maize?](#)

[Chapter 2: Milpas, Markets, and Movements](#)

[Chapter 3: Nuestro Maíz](#)

[Chapter 4: Itanoní Tortillería](#)

[Chapter 5: The Michoacán Centre for Agribusiness](#)

[Chapter 6: Biocultural Agrifood Relations](#)

[References](#)

[About the Author](#)

Preface and Acknowledgments

AS I WRITE THESE WORDS, on the cusp of this book's publication, I am preparing for a workshop offered by Fulvio Gioanetto from Michoacán, Mexico, in Toronto. Urban and peri-urban farmers from the greater Toronto area will attend, and Fulvio will share his experience in agroecological farm management, using locally available plants and minerals to prepare biological pest, disease, and fertility applications. Fulvio spent the summer at Plan B Organic Farm in Ontario, working with Alvaro Venturelli and visiting many urban gardens and farms to speak with growers.

This book is about local food networks and their intersection with broader regional, national, and global social movements. It is about the circulation of plants, food, knowledge, and the practical work of building local food economies and transnational social movements. I focus on Mexico, where I had the opportunity to step away from my own work related to building sustainable food systems in Canada and learn from a different context, another culture, other issues and ways of organizing around food. The themes I explore in this book resonate deeply with my experience in Toronto, Ontario, and across Canada, and the intercultural global exchange continues to inform my current work at the Toronto Food Policy Council, as well as my participation in Sustain Ontario and Food Secure Canada at the provincial and national levels.

I would like to thank the Carrot Cache for supporting the ongoing agroecological exchange between Mexican and Canadian food activists and farmers. I am grateful to the faculty of environmental studies at York University for the Graduate Fellowship for Academic Distinction, which supported this research. Grants and awards from the Social Sciences and Humanities Research Council of Canada, the Ontario Graduate Scholarships Program, and the International Development Research Centre's Ecosystems and Human Health Program provided funding for my fieldwork.

In 1995 I became involved with Deborah Barndt's Tomasita Project, and I feel honored to have worked with Deborah in various contexts ever since. Her encouragement, insight, and creativity inspired my research. Deborah's commitment to transnational collaboration, critical pedagogy, and social justice continues to inform and shape my work. There are many others to thank for stimulating discussion and debate—too many to name, but I can't help but list a few: Edit Antal, Kirsten Appendini, Gustavo Esteva, Debbie Field, Harriet Friedmann, Jane Hayes, Cathleen Kneen, Anan Lololi, Mary Lou Morgan, Wayne Roberts, Gabriel Torres, and my colleagues at the Centre for Studies in Food Security at Ryerson University.

My fieldwork would not have been possible without Amado Ramírez Leyva and Gabriela Fernández Orantes, who welcomed me to the Itanoní Tortillería. Their work has evolved into a new initiative "maize from Oaxaca's ancestral communities, a network of production, consumption and exchange." Jorge Aguirre Alonso and Armando Joffre Poceros introduced me to ANEC's Nuestro Maíz project. Fulvio Gioanetto and Aguilar Villaseñor Wenceslao hosted me in Michoacán. Thank you to my colleagues at El Colegio de México, Universidad Nacional Autónoma de México, and Universidad Autónoma Chapingo.

My family has provided immense support throughout the writing of this book.

Samuel and Henry, my two exuberant boys, provided welcome diversion and laughter. Carole Baker nourished my family and this research with her love, interest, and insight. Jack Baker provided wonderful conversation and guidance. Eloise Graham offered her healing gifts and the delight of an expanded family. Gerry and Marie Collyer were a source of unwavering acceptance and encouragement. My sisters, Joanna and Amber, sustained me with their friendship.

Lauren Baker Fall 2012

1

Why Food? Why Corn and Maize?

Most people experience contemporary globalization as threatening local and microregional self-reliance, diminishing participatory democracy, and destroying diversity of cultures, while devouring the last remnants of natural resources and wilderness. In the rural areas, this perverse process is being made possible in all those spaces where individuals and communities are unable to resist the three main mechanisms of globalization: dependency, specialization, and centralization of power.

Challenging these forces, a myriad of rural communities in countries as different as Finland, Japan, India, Australia, Peru, and Mexico have initiated, in the last decades, successful experiences of local organization and control over the global forces. . . . Diversity, self-sufficiency, grassroots democracy, equity, and decentralization of power are basic principles guiding the actions of these local movements. As a whole, these principles represent new paradigms in the construction of an alternative modernity; that is, the creation of a sustainable, ecologically inspired, post-neoliberal society.

—Toledo 2001, 472

Local Movements, Global Window

MEXICANS ARE ORGANIZING “In Defense of Maize.” This slogan has become the rallying cry for a food movement grounded in the agricultural biodiversity of maize, the country’s staple food. The movement confronts global trends reshaping food and agriculture: neoliberal policy, corporate concentration, and dietary transformation.



PHOTO 1.1. Wonder tortillas made from *harina de trigo* are readily available in Mexican corner stores and supermarkets, reflecting agricultural and dietary transformation.

Every October, Mexico celebrates El Día de la Raza, a national holiday in recognition of Mexican culture and traditions. In recent years, indigenous and civil society groups across Mexico used El Día de la Raza to demand a ban on genetically modified (GM) corn. Monsanto has lobbied for years for the right to plant GM corn trials in parts of Mexico, something that activists and indigenous communities fear will contaminate native maize landraces. In the fall of 2009, the Mexican government approved trials of GM corn in designated areas, reigniting the movement In Defense of Maize.

The coalition In Defense of Maize gained strength in 2001 when scientists tested native maize landraces and found traces of GM corn had introgressed into, or contaminated, the gene flow. This shocking discovery gave rise to a social movement

rooted in communities across Mexico but linked to global food sovereignty efforts. *Tortillerías* began to advertise that the maize they used was 100 percent maize mexicana, a protest against the cheap and poor quality maize imports from the United States. The statement “somos hijos de maiz”—we are the children of corn—became a popular movement slogan.

In this book, corn is used as a symbol for the commoditization of food and the corporate control of food production, processing, and consumption. Maize, on the other hand, is used as a symbol to describe agricultural and food practices grounded in practical farming knowledge, culinary traditions, and local economic exchanges. These two symbols are used as a window into understanding key debates and tensions in the field of food studies: food security and food sovereignty, biodiversity and cultural diversity, culture and nature, the local and the global, markets and movements. The meeting of corn and maize offers new ways to understand these debates as fluid and mutually contested.

The struggle between maize and corn in Mexico is symbolic of how contemporary agricultural and dietary transformations are permeating local places. In the story of maize in Mexico we see the roots—structural and metaphorical—of the global food crisis; the ways that the obesity epidemic is related to the loss of culinary culture and skills; the poverty of a diet based on processed sugar, maize, and fat; the alienation of farmers from the land and practical skills of farming and seed saving. But it is also the story of hope. Communities and social movements are acknowledging these crises and reclaiming control of their food systems. In the process they are regenerating local ecologies, cultures, and economies, and contesting neoliberal trade policies (Pechlaner and Otero 2008).

These efforts—strategies developed by local communities in Mexico to conserve and protect maize agrobiodiversity—intersect with the strategies of food movements around the world that are forming new food supply and distribution networks and articulating the cultural and ecological importance of local food systems.

Victor Toledo, in the introductory quote, articulates the characteristics of the myriad local movements challenging globalization. The principles of diversity, self-sufficiency, grassroots democracy, equity, ecological integrity, and decentralization of power, Toledo states, represents a new paradigm from which a postmodern, post-neoliberal, ecological society is being constructed. Tim Lang and Michael Heasman describe the current context as a contest between the “Life Sciences Integrated paradigm” (characterized by specialized approaches to industrial agriculture and food practices) and the “Ecologically Integrated Paradigm” (characterized by ecosystem approaches to health) (Lang and Heasman 2004). Harriet Friedmann (2005a) suggests that we are witnessing the emergence of a new food regime. A myriad of forces are shaping the emerging food regime, and Friedmann argues that social movements play an important role as paradigms compete to succeed. Friedmann states, “A new regime seems to be emerging not from attempts to restore elements of the past, but from a range of cross-cutting alliances and issues linking food and agriculture to new issues. These include quality, safety, biological and cultural diversity, intellectual property, animal welfare, environmental pollution, energy use, and gender and racial inequalities” (249). The stories of corn and maize in this book tangibly demonstrate the competition between paradigms and the unfolding characteristics of the new food

regime (for a summary of food regime formation, see Fairbairn 2010).

Three initiatives in defense of maize are used as examples of innovative models for organizing alternative food networks. Itanoní Tortillería, Nuestro Maíz, and the Michoacán Centre for Agribusiness are efforts to promote regional maize markets and protect campesino farmers from the incursion of cheap corn from the United States that has flooded the Mexican market since the North American Free Trade Agreement (NAFTA) was signed in 1994. Nuestro Maíz provides an example of how, in Mexico, campesino organizations are adapting to neoliberal policies and seeking regional, value-added markets for maize grown by their members. The Nuestro Maíz experience reveals the challenge of coupling rural development and agrodiversity conservation goals in the neoliberal context. The work of Itanoní Tortillería demonstrates the importance of education and skill building as part of local food movements. The Tortillería encourages eaters to appreciate the *taste* of maize diversity and works with farmers to improve and diversify their production practices. The Michoacán Centre for Agribusiness illustrates a number of activities governments can undertake to market local products more widely, both complementing and challenging organic export opportunities.

Beyond linking farmers to eaters, these tortilla supply chains are connected to transnational social movements, demonstrating how local food systems are permeated by global flows of knowledge, cuisines, seeds, markets, migration, and solidarity. The ways that “corn” meets “maize” in these initiatives illustrate the complexity of reclaiming food from its commodity status in the global context of financial turmoil, food crises, and climate change. As local food movements and markets firmly take root in communities across the globe, scholars, activists, and entrepreneurs are looking for new models and stories about the ways alternatives are being developed. More broadly the three initiatives represent different approaches to creating alternatives to the global industrial food system, and provide insights into conceptual challenges related to rebuilding local food economies. These conceptual challenges are the thorny issues emerging from the theory and practice of food system relocalization: the ways these initiatives intersect with broader policy processes; how they address issues of scale; the possibilities for (and limitations of) expanded notions of the economy; how to create organizational structures that embed food and farming in appropriate ecological, cultural, social, and economic systems; and how to take into consideration the agency of diverse actors, both human and nonhuman.

Corn Meets Maize is organized into six chapters. In the rest of this introduction, I discuss the key tensions explored through the two metaphors, corn and maize: food security and food sovereignty, biodiversity and biotechnology, culture and nature, and global and local. The initiatives are further examined. The text boxes found throughout the book allow me to link the story of maize and corn in Mexico to my work in the Canadian food movement, acknowledging the ways that my experience building sustainable food systems in Ontario and advocating for food and agriculture policy reform in Canada has been shaped by the work of others doing the same in Mexico and other places. Chapter 2, “Milpas, Markets, and Movements,” offers a short history of maize and corn in Mexico, describing the dynamics of agrodiversity as both rooted in particular places and cultures, and reflective of “transworld” agriculture (Coleman 2003). The following three chapters delve into the initiatives. The three initiatives—

Itanoní Tortillería, Nuestro Maíz, and the Michoacán Centre for Agribusiness—reveal different aspects of contemporary agricultural and dietary transformation in Mexico. They are examples of shortened food supply chains, linking farmers to eaters in their region and beyond. Beyond the linkages from farmers to eaters, all three initiatives have linkages and connections with broader social movements, civil society organizations, and researchers. They are connected to biodiversity conservation networks such as seed banking, agrodiversity education and agronomists, plant geneticists, and anti-GM activists. The initiatives illustrate the ways that agrodiversity and food networks are fluid and shaped by the cultural, ecological, institutional, and economic contexts in which they are embedded. Place-based, these initiatives are grounded in particular ecologies, cultures, and economies. And yet the projects are not place-bound. They are networked locally, regionally, translocally, and transnationally through the neoliberal policy context, the circulation of maize and corn via agriculture and food commerce, and social movements. The book’s concluding chapter describes the practical and theoretical implications of the initiatives, demonstrating how local food networks are examples of biocultural agrifood relations, a concept that is explored throughout.

BOX 1.1A View from the Roof: Urban Agriculture and My Own Translocal Roots

At a community food distribution warehouse in Toronto, I climbed up a ladder to the roof to see an urban agriculture experiment a friend was working on. Looking out over the vast concrete sea of empty rooftops, I was struck by the potential for the small area of lettuce that was planted on the roof I stood on. What if, I thought, what if we could transform all these roofs into productive spaces. How would that change the city? And so started an incredible urban agriculture adventure that led to a deep interest in local food initiatives.

My interest in maize and corn in Mexico emerged from this deep and long-standing involvement in food networks in North America. After working on food projects in Ontario for several years, I applied to start a master’s of environmental studies at York University in 1995. As a graduate assistant for the Tomasita project, I accompanied Deborah Barndt to Mexico to unveil the journey of a tomato from Mexican field to Canadian table and the role of women workers along the trail.¹ While in Mexico I observed children working long days picking tomatoes beside their mothers, indigenous communities uprooted from their homes living in cardboard camps and working to pick the food we eat in the United States and Canada, and pesticide packaging strewn in roadside ditches beside the fields. This visceral experience of the global food system inspired me to work creating alternative food networks in Toronto upon graduation. I started this work by creating two small social enterprises, Annex Organics and Urban Harvest, based out of FoodShare’s Field to Table warehouse, and eventually began working full time as FoodShare’s urban agriculture program coordinator.

The urban agriculture work was grounding and tangibly part of the process of creating life. The simple act of placing a seed in soil, watering it, watching it develop true leaves and mature over the season to produce fruit. Watching nature’s resilience every day at an urban warehouse surrounded by contaminated industrial brownfields. Over the five years I worked at the Field to Table warehouse these simple acts of planting shifted my conceptions of nature and its place in urban areas.

I became interested in food plant diversity. Choosing new varieties to grow each year involved spending hours every winter reading seed catalogs. Many of these endangered varieties had captivating stories, and reading the seed catalogs was like a trip into a botanical garden for unusual and rare food plants. I read the book *Lost Crops of the Incas: Little Known Plants of the Andes with Promise for Worldwide Cultivation* (National Research Council 1989) and experimented with some of the interesting plants—*oca*, *mace*, and *cape gooseberry*—on our rooftop garden. I was fascinated by the history of these plants and their interesting culinary uses and struck by the corresponding lack of diversity on our supermarket shelves.

The warehouse became an unlikely diversity garden. Volunteers and visitors to the warehouse brought seeds that were planted and grown out. These seeds reflected their favorite foods, their gardens, their agricultural and culinary history. The links between Toronto's ethnocultural communities, agrodiversity, and urban landscapes were revealed.

When I decided to pursue a doctoral degree, I had recently completed a participatory research project with eight community groups across the city of Toronto that examined the intersections between cultural diversity and biodiversity.² This project piqued my interest in these intersections, revealing there was much to be explored about the global biocultural diasporas in Toronto's community gardens.

Walking through the Leslie Spit allotment was like a tour through a hundred aesthetic sensibilities—plots full of roses carefully manicured and trellised next to a cacophony of wildflowers, beside a vegetable plot planted in careful rows. Most interesting to me were the unfamiliar plants in the vegetable plots of the Frances Beavis community garden for Chinese seniors. At one point in the project we brought local farmers to visit the garden to see the innovative production methods used to polycrop Asian greens and squashes. I was captivated by the gardens located in the inner suburbs of Toronto, landing places for new immigrant families seeking a new home in Canada but maintaining their agricultural and culinary roots through the community garden.

It was through these gardens and with these gardeners that I began to understand the interrelationships between biodiversity and cultural diversity as ontologically related. The diasporic reality of the gardeners encouraged me to think about how the gardens and gardeners were place-based, yet not place-bound due to their ongoing connections and histories in other places.

At the same time I was enjoying these urban gardening experiences, I was gaining a practical understanding about the politics of food. I was working with youth at risk, mentally ill, and low-income people in Toronto. These people understood hunger and could describe what it felt like to crave healthy, nutritious food, but only have the offerings from the food bank in the cupboard. FoodShare's work involved linking these eaters to farmers and innovating ways to offer fresh, healthy food to low-income Torontonians. The daily contrasts of planting heritage vegetables and packing food boxes helped me to understand how food plant diversity loss is connected to the industrial food system and health.

Over the duration of my work in community food security in Toronto I had become increasingly interested in the meaning of community food practices and wanted to delve into this theoretically. A priority for me was rekindling my connections to Latin America, generally, and Mexico, specifically. This desire was grounded by a deep commitment to north/south connections and translocal solidarity.

In 2001 and 2002, as I was beginning my doctoral degree, the maize debates in Mexico caught my attention. This was a local food issue that had galvanized international attention, involving disparate actors including scientists, policy makers, academics, and activists both locally and globally. Through different fora, links were being made between culture, ecology, and economy in new and interesting ways. During an exploratory trip to Mexico in the winter of 2004, I sought out ways that community groups were building local food networks in response to the issue of maize agrodiversity and to address the local repercussions of NAFTA.

These experiences and interests are the root of this book, which explores the interconnections between cultural diversity and biodiversity within globalized economic systems. My desire was to take a leave from the Canadian context and to seek a comparative perspective. I was convinced that "following" maize would allow me to get inside the global food system and explore the interconnections between biodiversity and cultural diversity in local food networks.

From my work on community food security in Ontario I understood that food was a valuable theoretical and pedagogical device. Many of the studies that inform my methodology follow food through the global food system, across countries and continents (Cook et al. 2006).

My experience working in local food networks—food initiatives working to connect local farmers to eaters, espousing the principles of trust, quality, equity, and environmental sustainability—was that, although reflecting a shorter food supply chain, they were equally embedded within global cultures, markets, and ecologies. In this research I set out to explore the "global nature" of local food networks to find what stories they can tell us about the global food system.

Notes

1. My own experience of this project was published in 1999: "A Different Tomato: Creating Vernacular Foodscapes," in *Women Working the NAFTA Food Chain: Women, Food and Globalization*, ed. D. Barndt, 249–260. Toronto: Second Story Press.

2. This project was documented in several publications. I wrote a report for FoodShare titled *Seeds of Our City: Case Studies of Eight Community Gardens in Toronto* (2002); an article with Jin Huh in *Alternatives Journal* (2003), "Rich Harvest"; and an article in *Geographical Review* (2004), "Tending Cultural Landscapes and Food Citizenship in Toronto's Community Gardens."

Food Movements and the Food Security/Food Sovereignty Debates

In 1974 the World Food Council was established by the Food and Agriculture Organization (FAO) to address a global food crisis marked by famines in Africa and pressure on the international grain market due to increasing global demand and rising grain prices. This historical moment, the discourse of that food crisis, and the intensification and broadening of the notion of food security at the time echoes resonantly. Today, in a similar fashion, the global food economy is straining under the demand for biofuels, growing consumption of grain-fed meat, and production and distribution systems that rely on high cost oil. The transnational food distribution system is not serving a large percentage of the global population with many people either over- or undernourished. Local agricultural economies and cultures are threatened by industrial agricultural practices. New actors have emerged to address these concerns. The examples in *Corn Meets Maize* are situated in the shifting food security–food sovereignty debates of the twenty-first century.

The concept of food security has changed dramatically over the past fifty years, from a focus on nutritional requirements of individuals and communities and the physical availability of food at a macro level, to the recognition that food and agriculture policies interact with complex socioeconomic factors at various scales to impact food security (Maxwell 1996). The food security discourse now recognizes that livelihood strategies, social networks, and the political, economic, and environmental context are key factors that determine food security, defined by the FAO as “when all people . . . have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO 2003).

The definition continues to be critiqued and expanded. The Centre for Studies in Food Security at Ryerson University in Toronto, Canada, defines the key characteristics of food security as: availability (sufficient supply); accessibility (effective distribution); acceptability (culturally acceptable/nutritionally adequate); appropriateness (ecologically sustainable, safe); and agency (enables action) (Centre for Studies in Food Security n.d.). This definition inserts cultural and environmental factors to augment the focus on participation and process as key components of food security (See also Koc et al. 1999 and Maxwell and Smith 1992).

The limitation of the food security discourse is its focus on food security as a material condition related to deficiencies in production and distribution. Many responses to food insecurity have reflected this focus and encompass redistributing food in emergency contexts, developing charitable distribution systems, and using food as a community development tool to increase people’s ability to purchase and prepare healthy food (see, for example, Koc et al. 1999 for a review of these approaches).

Emerging with a strong challenge to the food security discourse has been the political platform of food sovereignty. Coined by the international peasant coalition Via Campesina in 1996, food sovereignty promotes alternatives to neoliberal development. At the Forum for Food Sovereignty in Mali in 2007, delegates adopted the following declaration that describes the principles of the concept and movement:

Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture

systems. It puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It defends the interests and inclusion of the next generation. It offers a strategy to resist and dismantle the current corporate trade and food regime, and directions for food, farming, pastoral and fisheries systems determined by local farmers. Food sovereignty prioritises local and national economies and markets and empowers peasant and family farmer-driven agriculture, artisanal fishing, pastoralist-led grazing, and food production, distribution and consumption based on environmental, social and economic sustainability. Food sovereignty promotes transparent trade that guarantees just income to all peoples and the rights of eaters to control their food and nutrition. It ensures that the rights to use and manage our lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social classes and generations.

The food sovereignty movement moves beyond the food security discourse to directly address the structural issues related to land tenure, macroeconomic policies, human rights, and local control of decision making and resources. Many of the demands quoted above focus on the linkages between controlling the means of social reproduction and global, neoliberal economic policy. If food security describes and prescribes solutions to a material condition, food sovereignty understands these intersecting issues as a historical economic, ecological, and cultural process. The intimate interrelationships between people, the land, cultural practices, and local economies are explicitly described (Fairbairn 2010).

Philip McMichael offers a useful analysis (2008) of the food sovereignty movement, contrasting food sovereignty and food security. Food security is a manifestation of the neoliberal project and is based on “installing a ‘self-regulating market’ on a world scale [that] *encloses* questions of social reproduction within a legitimating rhetoric of ‘feeding the world’” (McMichael 2008, 216). Three key shifts are articulated by McMichael in his work on food security and food sovereignty. First, is the shift from a focus on production to a focus on social reproduction. This is an epistemological shift from viewing food beyond its material value to embodying social, cultural, and ecological values (218). Second, McMichael demonstrates how the food sovereignty movement has revealed the state’s complicity in the neoliberal project, a “capital/state nexus,” through policies at various levels from the global to the local, and aims to transform the state system (212). Third, the food sovereignty discourse represents an ontological shift. McMichael explains,

The ontology of the food sovereignty movement critiques the reductionism and false promises of neoliberalism, positing a practice and a future beyond the liberal development subject, and the science of profit. This emerging ontology is grounded in a process of revaluing agriculture, rurality and food as essential to general social and ecological sustainability, beginning with a recharged peasantry. (2008, 213)

The agrifood movements that reflect and shape the food security/food sovereignty debates address the social, economic, and environmental costs of the industrial food system and global trade regimes, as well as regenerate local food systems (Allen et al. 2003). Varied in their focus, agrifood movements encompass efforts to challenge corporate concentration, improve food safety, link eaters to farmers, encourage local food consumption and greater food self-sufficiency, address hunger and poverty, and promote sustainable agriculture (Pretty 2002). These movements have also been referred to as food networks or food webs (Hinrichs 2003), terms that acknowledge the complex and nonlinear household, community, regional, and institutional relationships involved in getting food from the field to the table. Although local food movements are often rooted in place—historically, culturally, and geographically—they are also

connected transnationally through the modern diaspora and social movement networks (Friedmann and McNair 2008).

Local food movements create economic possibilities that challenge global capitalist food systems characterized by environmental and social exploitation. J. K. Gibson-Graham (2006) theorizes these economic possibilities by challenging us to move away from the dichotomies of global/local and conventional/alternative. Acknowledging that local food movements are embedded in (even as they challenge) a global neoliberal context, *Corn Meets Maize* reveals some of the overlapping and competing sociocultural, political, and economic relations shaping local food networks in Mexico.

Agrifood movements have been described and theorized from a number of disciplinary perspectives. For example, Allen (2004) examines sustainable agriculture and community food security movements in the United States through the lens of social justice movements, analyzing their discourses and practices. Goodman describes how local food networks represent “a movement from the ‘industrial world,’ with its heavily standardized quality conventions and logic of mass commodity production, to the ‘domestic world,’ where quality conventions embedded in trust, tradition and place support more differentiated, localized and ‘ecological’ products and forms of economic organization” (Goodman 2003, 1). McAfee (2006) describes how food sovereignty movements are bringing together disparate rural and farmers movements with international NGOs (nongovernmental organizations) to address global trade injustices. Statements from the Via Campesina and international food sovereignty meetings illustrate how sociocultural, economic, and ecological issues are intricately connected for movement activists and farmers (FoodFirst 2003).

Research on the proliferation of food movements has focused on disparate issues such as scale, the challenges of bridging social justice and environmental issues, and the limitations of local projects (Allen et al. 2003; Hinrichs 2003; Johnston 2003; Johnston and Baker 2005). In this literature food movements are articulated as political spaces that engage people in democratic practices that occur as part of everyday life and simultaneously impact policy at various levels.¹ These democratic practices are part of creating “food citizens” who are not only eaters, but who are also engaged in their communities and have an “intimate” connection to the food they eat (Winson 1994; Welsh and MacRae 1998; DeLind 2002; Hassanein 2003; Wekerle 2004).

The failure of corporate, industrial agriculture to feed the world manifests itself differently in the north and south. This is reflected in the different approaches of agrifood movements in these contexts. In the north, these movements tended to focus on developing more intimate linkages among farmers and eaters, organic and ecological farming practices, and community food projects (see Allen 2004). Many of these elements can be found in the projects of southern agrifood movements, but the focus in this context has tended to be on developing fair trade networks, advocating for global policies that support small-scale peasant food production practices, and land reform (Holt-Giménez 2006; Goodman 2003).

In this section I have briefly outlined the food security/food sovereignty debates. I describe food security as reflecting a material condition with solutions aimed at addressing inadequate production and distribution systems. Food sovereignty, on the

other hand, is a response to a historical process requiring political and structural transformation. These debates reveal how food movements can address either or both of the material condition of food security and the transformational politics of food sovereignty.

Biodiversity and Biotechnology: Diversity Debates

Intersecting and overlapping with the food security–food sovereignty debates are the biodiversity-biotechnology debates. The intensification of industrialized farming and global food distribution practices since the 1950s has threatened food crop diversity.² Cary Fowler and Pat Mooney report a staggering loss of food plant genetic resources since 1903—only 3 percent of vegetable varieties survived between 1903 and 1982 (Fowler and Mooney 1996). Modern, improved, and hybrid varieties displaced old varieties and landraces, a trend that was compounded by Green Revolution technologies.³

This loss of agrodiversity is worrisome for a number of reasons. Agricultural productivity is reliant on varietal diversity to address new and ever-changing crop breeding problems such as drought resistance and disease (Brush 2004). Small-scale farmers are equally reliant on the local ecological adaptability of this varietal diversity. Sociocultural practices—culinary, spiritual, and community—depend on the availability of different varieties for multiple purposes and reflect local knowledge about agriculture and ecology. The issue of agrodiversity loss is being addressed at the international, national, and local level through a number of conservation efforts.⁴

This book examines three initiatives working to conserve maize agrodiversity in Mexico by directly marketing maize landraces to eaters through the creation of local markets. The initiatives illustrate the possibilities for and challenges of maize agrodiversity conservation through local food networks, as well as the interconnections between cultural diversity and biodiversity.

Compounding the general trend of agrodiversity loss is the specific threat of GM seeds and agricultural biotechnology. The impact of biotechnology on agricultural biodiversity is being debated in a number of bio-political arenas (Royal Society et al. 2000). Proponents of biotechnology state that GM varieties will increase global food security (Elderidge 2003). Opponents state that the ecological and health ramifications of biotechnology are unknown and that the benefits of new technologies do not reach economically marginalized communities nor the farmers they are purported to serve (Altieri 2000).

In 2001, the scientific journal *Nature* published a paper by David Quist and Ignacio Chapela reporting the discovery of transgene flow from GM corn to maize landraces in indigenous communities' fields in Oaxaca, Mexico (Cummings 2002).⁵ This discovery has repercussions for local and global food security and the resilience of agricultural systems (Fowler and Mooney 1996). The discovery of this introgression intensified the work of translocal networks addressing maize agrodiversity and the ownership of genetic resources.

Mexico has been identified as a “centre of genetic diversity” for food crops (Brush 2004). The sociocultural importance of maize in Mexico, and the agroecological importance of maize diversity for global agriculture, has meant that agronomists,

geneticists, crop improvement specialists, ethno-botanists, farmers, activists, and rural development workers have been working to document, categorize, conserve, and promote maize agrobiodiversity in Mexico since the early 1900s (Paczka 2003). The discovery of transgene introgression to maize landraces politicized and shed light on the importance of these conservation efforts, according to Flavio Aragon Cuevas, a maize agrobiodiversity specialist at INIFAP (the National Institute for Forestry, Agricultural and Livestock Research) (pers. comm., February 8, 2006). New actors became involved in promoting and defending maize agrobiodiversity in Mexico.

In this book I focus on contemporary maize debates in Mexico, but it is important to recognize that maize, historically, has been at the center of Mexican social and cultural movements (see Pilcher 2005). As Gerard Verschoor (2007) states, what has changed is how the issues are framed. I am interested in how the GM corn issue galvanized new ways of articulating the sociocultural, agroecological, and political-economic importance of maize in Mexico. Conflicts between biotechnology and biodiversity are at the heart of these debates, and the actors defining the claims have an interest in intellectual property, profits, and market control, on the one hand, and biosecurity, health, food security, agricultural biodiversity, sustainable rural livelihoods, indigenous rights, and cultural sovereignty, on the other hand. These biodiversity-biotechnology networks figure centrally in the “neoliberal corn regimes” (Fitting 2006) in the ways they challenge and reflect neoliberal policies at local, national, and international scales.

Sarah Whatmore in her book *Hybrid Geographies* (2002) illustrates how biodiversity-biotechnology conflicts are based on differences in the definition of diversity, using the FAO and Convention on Biological Diversity (CBD) as examples.

Where the FAO version articulates diversity as a heterogeneous achievement in which human being and doing is enmeshed through long and situated association in the spatial and corporeal fabric of botanical becomings, the CBD account casts it in wholly biological terms, the outcome of an evolutionary process divested of human presence. The one conjures a world that is hybrid “all the way down,” enfolding humanity in its ceaseless commotion time out of mind. The other conjures a world until recently unmarked by the (invariably negative) “impacts” of human society, only countenancing hybridity as a technological accomplishment associated with the advent of “genetic resources.” (Whatmore 2002, 92)

In the case of maize, the mutually constituting association between plants and people over time clashes with static definitions of maize agrobiodiversity.

The discovery of transgenic corn in Oaxaca, Mexico, was a catalyst for both farmer groups and civil society organizations to organize local, national, and international campaigns that address a number of interrelated political, cultural, and ecological issues (Cummings 2002). These campaigns reveal the impact of neoliberal policies in their analysis of the global economic context; support farmers to maintain, preserve, and manage biodiversity; and advocate for policy change through their involvement in national and international policy processes (see, for example, Bartra 2005; Esteva and Marielle 2003). The intersecting issues of biotechnology and agricultural biodiversity are an example of how contemporary agricultural transformation impacts food security and food sovereignty. This book examines how civil society organizations, farmer groups, and government are organizing to respond to agricultural biodiversity and biotechnology conflicts (Altieri 2000; Pretty 2002). This is central to understanding how emerging technologies affect the most marginalized groups in society, and how

these groups are organizing to defend their livelihoods and biocultural food practices.

The correlation between cultural diversity and agricultural biodiversity has not been well documented (Brush 2004),⁶ though it has been suggested in several ethnographic studies. For example, Nazarea (1998) demonstrates a relationship between the conservation of genetic resources and the conservation of culture in indigenous sweet potato production in the Philippines, and Roberto González (2001) highlights a link between agricultural and cultural practices in the local farming systems of Zapotec farmers in Oaxaca, Mexico. Indigenous farmers in Mexico, in particular women, play a central role in the on-farm (in situ) preservation of biodiversity (through the cultivation of milpas—plots for household and community consumption) and in community food security (through their role in family food procurement and preparation) (R. González 2001). A study by the Commission for Environmental Cooperation titled *Maize and Biodiversity: The Effects of Transgenic Corn in Mexico* (2004) identifies a number of sociocultural concerns to transgenic corn, including the impacts of agricultural and dietary transformation and the deep cultural importance of maize in Mexico.

Similarly, Kathleen McAfee (2004) describes how blanket technological solutions have not historically addressed complex socioeconomic and ecological issues. McAfee calls for “more place-specific, multifaceted, and farmer-centred approaches to agricultural productivity and sustainability” and calls on us to acknowledge “the intricate relationships of food systems to local cultural practices and institutions and the intimate connections of both to ecosystems and biodiversity” (82).

The agroecology and ecosystem health literature also recognizes the interactions between agroecosystems, biodiversity, food security, and rural community development (Waltner-Toews 2004; Dalgaard, Halberg, and Fenger 2002; Forget and Lebel 2001; Allen et al. 1991; Altieri and Hecht 1990). The complexity of the relationships between sociocultural, physical, environmental, and economic factors within an ecosystem is articulated as “nested hierarchies” of interlocking elements (Forget and Lebel 2001, S12). “Ecohealth” research traces the connections between health, environment, and development, illustrating the role social and cultural practices play in determining health at the broadest level (Forget and Lebel 2001). As noted by Richard Levins, agroecology pioneer, at an international workshop called “Food Sovereignty, Conservation, and Social Movements for Sustainable Agriculture in the Americas,” held at Yale University in 2004, agroecology is increasingly recognized as a social as much as a technological project (McAfee 2006, 9). Deborah Barndt concludes her study of women workers in the North American food chain by making the link between food, agriculture, and health and stating that “nurturing a more holistic conception of health—as well-being that is at the same time physical and spiritual, individual and collective, human and non-human—is a starting point. But it also requires action, collective and coalitional efforts that move beyond concern for our own bodies, to a commitment to the sustenance of the collective body, of the earth’s body” (Barndt 2002, 226–227).

Despite this research, the social and political networks that enable agroecological practices and ensure food security have seldom been examined explicitly (Pretty 2002; McAfee 2004). This book expands the links between culture and biodiversity to include the agrifood movements that are mobilizing around the issue of sustainable