The Porto Alegre Sustainable Innovation Zone (ZISPOA): Circular Economy, Climate Resilience, Sustainable Innovation, Participatory Community Transformation, and Inclusive Prosperity

Dr. Marc A. Weiss, Chairman and CEO, Global Urban Development

INTRODUCTION: Why Sustainable Innovation Zones will help the world accomplish the UN Sustainable Development Goals, Paris Climate Agreement, and New Urban Agenda by 2030

This chapter provides an historical overview and detailed case study of how and why Global Urban Development (GUD) organized the Porto Alegre Sustainable Innovation Zone (ZISPOA - Zona de Inovação Sustentável de Porto Alegre) in Brazil beginning in 2015. GUD's commitment to promoting Metropolitan Economic Strategy, Sustainable Innovation, and Inclusive Prosperity as a global movement to build public support for vitally needed economic, social, and environmental changes has evolved over decades of urban and regional economic development experiences, starting in California during the 1970s. The foundation of this approach is understanding that generating greater prosperity and higher quality of life, enabling all people everywhere to live and thrive in peace with each other and in peace with nature, is vital to creating consensus for widespread collaborative action that is a necessary prerequisite for solving the climate crisis and other fundamental global challenges.

In order for billions of people worldwide to enthusiastically engage in and embrace large-scale positive transformation, they first need to know that such actions will help raise their standards of living and not lower them. It is now increasingly possible to substantially grow businesses, jobs, and incomes by conserving, renewing, recycling, and reusing natural resources much more efficiently, enabling people, places, and organizations to genuinely "get richer by becoming greener." The best way for people to

envision these new opportunities is by actively participating in and directly experiencing the benefits of such sustainable and resilient improvements in their own livelihoods and those of their families and communities, what GUD calls Participatory Community Transformation. These transformative experiences will encourage and empower people to work together to successfully change their own futures for the better, including economically better, and that is GUD's fundamental purpose for organizing ZISPOA and many other Sustainable Innovation Zones globally.

Sustainable Innovation and Inclusive Prosperity: Economic Hope replaces Economic Fear

In 1972 a major California statewide ballot initiative promoting environmental improvement, Proposition 9, which initially was polling very well, eventually went down to defeat, buried by massive corporate-funded advertising that raised alarming fears about potentially harmful economic consequences from stricter environmental regulations (Clean Environment Act, 1972; Lutrin and Settle, 1975). It became clear to me that the reason policy advocates often lost environmental protection campaigns was because the main argument of the corporate polluters to working people was: "Would you rather have clean air, or a job? Would you rather have clean water, or be able to feed your family?" So I made what turned out to be a lifelong political commitment to help build a new policy framework that we called back then "good environment is good economics." We wanted to be able to effectively turn the polluters arguments upside down, by convincing people that they absolutely needed clean air and clean water in order to have good-paying jobs to support their families with good health and quality of life. Instead of there being a harmful tradeoff between economy and environment, there actually was synergy: a better environment generates a better economy, not a worse one (Anderson, 2009; Engel and Kammen, 2009; Bloomberg and Pope, 2017).

The 1970s energy crisis spawned a movement in California for energy conservation, with strong support from Governor Jerry Brown, first elected in 1974, who agreed with Amory Lovins' ideas about "negawatts" -- that the cheapest, easiest, fastest, and safest form of energy is the energy you don't use (Lovins and RMI, 2011). An important offshoot of energy conservation was energy efficiency -- getting greater output from reduced inputs, more power and capacity from fewer fossil fuels (Roe, 1984; Goldstein, 2007; Rosenfeld, 2008). Starting in the late 1970s, California steadily required

higher energy efficiency standards on new buildings, new electric appliances (such as refrigerators), and new motor vehicles, eventually enabling everyone in the state to collectively save more than 100 billion dollars over the past five decades, plus creating millions of new jobs in the process (Carter, Wang, and Chang, 2006; Rosenfeld, 2008; Roland-Holst, 2008; Goldstein, 2007). More than anything else, this "Green Savings" approach stands today as one of the greatest environmental and economic successes of the sustainability movement, and effectively paved the way for much more aggressive climate action in California over the past 20 years (Meckling, Kelsey, Biber, and Zysman, 2015; Vogel, 2018; Kelsey and Zysman, 2014; Biber, 2013).

Through my work in the 1970s with the California State Government, I helped advocate for progressive public pension fund investments by the two large statewide funds, CalPERS and CalSTRS, enabling them to directly invest in affordable housing, community economic development, and what we then called alternative energy, appropriate technology, and environmental quality (Weiss, 1978; Weiss, 1980). This late 1970s movement substantially accelerated two decades later when California State Treasurer Phil Angelides (who later served as Chairman of the Apollo/Blue-Green Alliance) launched the "Green Wave" to encourage major growth in pension fund investments for energy efficiency and renewable energy (Sandred, 2004).

During 1981-82 I served as Deputy Director of the California Commission on Industrial Innovation, created by Governor Brown as the first "high-technology" state-level economic development initiative in the US (Weiss and Schoenberger, 2015; Cano, Enerson, Gardels, and Kieschnick, 1982; CCII, 1982; Weiss, 1983a; Peltz and Weiss, 1984; Hall and Markusen, 1985; Weiss, 1986; Weiss and Metzger, 1987a). Though the main focus was on computer hardware and software, semiconductors, and biotechnology, we also promoted research and development, financing, and other policy tools to foster improvements in energy efficiency, solar photovoltaic cells, modern wind turbines, battery storage, electric vehicles, and recycling. One of our first major research reports was on California's emerging solar industry (Coyle, 1982). This approach to what today would be called sustainable innovation, clean technology, and climate tech, we viewed back then as an integral aspect of technological innovation to help generate more dynamic and broad-based business, employment, and income growth for greater prosperity and higher quality of life (Weiss and Schoenberger, 2015).

When Mayor Gus Newport and the Berkeley Citizens Action (BCA) coalition gained a majority on the City Council in 1979, I helped coordinate a team of University of California, Berkeley faculty and graduate students that worked for the next two years, with funding from the Berkeley City Government, to produce in 1981 an economic development implementation strategy that was highly equity-oriented, with substantial focus on Berkeley's low- and moderate-income African-American families and communities (Weiss and Markusen, 1981; Markusen and Weiss, 1984). For example, one of our main recommendations was to significantly increase economic policy support for primarily black female service providers of childcare, home health care, and related caregiving services (Markusen and Bennett, 1981). In addition to this cutting-edge equity approach, and equally path-breaking, the 1981 Berkeley plan was the first *sustainable economic development strategy* in the US to emphasize energy conservation and efficiency, and renewable energy production and distribution, as a centerpiece of our recommended strategy to dynamically grow businesses, jobs, and incomes citywide (Weiss and Markusen, 1981; Skewes-Cox, 1981). We argued that the city could become an international center for alternative energy (with renewables as the "alternative" to fossil fuels), and we even organized a non-profit community development corporation to negotiate for Colgate-Palmolive to donate its recently abandoned large factory site, which we intended to transform into America's first cooperative Alternative Energy Research and Industrial Park (Builders, 1982; Weiss, 1983b). While Colgate ultimately declined, the Berkeley City Government adopted our proposed approach, including hiring a member of our team, Neil Mayer, to serve for a decade as its Director of Economic Development, Housing, and Community Development (Mayer, 1985).

Over the past four decades, our Berkeley clean energy policy vision basically succeeded. It is not a coincidence that the innovative and increasingly widespread Property Assessed Clean Energy (PACE) public financing program to support solar power installation and energy-efficient building improvements was first created by the Berkeley City Government (Fischer, 2010; US Department of Energy, 2022), that Lawrence Berkeley National Laboratory pioneered energy efficiency research and development (Carter, Wang, and Chang, 2006; Rosenfeld, 2008), and that President Biden's current Energy Secretary, Jennifer Granholm, as well as President Obama's Energy Secretary, Steven Chu, and his White House climate science advisor, John Holdren, all previously served on UC Berkeley's faculty.

During the 1980s I first learned about the potential challenges of catastrophic climate change, and like many others, I assumed that the world's leaders would quickly agree to solve this existential threat, similar to how they addressed the ozone layer crisis in 1987 through the Montreal Protocol. I hoped that the 1997 Kyoto Protocol, the first major global agreement to reduce greenhouse gas emissions, would eventually succeed. However, 10 years later, the new report of the UN's Intergovernmental Panel on Climate Change was released in 2007 with its alarming findings that the world was increasingly facing grave danger (IPCC, 2007). In response, GUD committed to helping prevent the rapidly accelerating climate crisis from getting much worse while there was still time to prevent it.

What was so stunning about the 2007 IPCC forecast was that even though the world's leaders had been aware of this impending global disaster since the 1980s, and during the 1990s had implemented a proposed solution intended to substantially reduce greenhouse gas emissions, in fact global emissions were still rapidly rising. It seemed almost impossible to believe this fact, because not only did we know how deadly serious the problem was, we also knew how to solve the problem and already possessed the ability to do so. And there was not just one way to solve the problem, there were hundreds of different ways, as Project Drawdown has effectively documented (Hawken, 2017; Hawken, 2021), and all of them have worked to some extent (as California's successful decades-long experience with reducing air pollution and carbon emissions has already demonstrated). So why wasn't the world doing the right thing when we knew what to do and we knew how to do it? The answer to this vexing question is attributed to Albert Einstein's brilliant insight that "no problem can be solved from the same level of consciousness that created the problem." In order to solve the climate crisis, people first needed to change their individual and collective consciousness.

What aspect of human consciousness was the major obstacle? I call it "Economic Fear." Ever since the start of the industrial revolution in the 18th century, when people first discovered they could take coal from the ground and burn it to generate steam power for operating machines, many people and places were able to substantially raise their standards of living by overusing and wasting natural resources and abusing and exploiting nature's ecosystems, especially through burning fossil fuels to generate energy. Part of the world actually "got richer by becoming browner." Since everyone in the late 20th century was well aware of this reality, when people were told that they urgently needed to protect and preserve the natural environment

and conserve and reuse natural resources in order to prevent a massive climate crisis and public health disaster, they generally had one of two reactions. If they were already relatively well off, many of them thought: "This could make me poorer." And if they were still relatively poor, many of them thought: "I might never get better off this way." In other words, Economic Fear is the most persistent barrier in human consciousness that is preventing the world from solving the climate crisis. A large majority of people everywhere are much more afraid of experiencing greater economic deprivation, which has immediate and highly negative consequences in their lives, than they are afraid of extreme weather conditions and other potentially harmful impacts of climate change, which appear to be more distant and infrequent both in time and space (if they are even willing to accept the scientific truth, which many people still stubbornly deny).

Therefore, I concluded that the most urgently necessary global change in human consciousness throughout the world was to rapidly replace "Economic Fear" with "Economic Hope." We need to be able to demonstrate to billions of people, through their own lived experiences, that they will be better off *economically* by engaging in more sustainable practices to reduce greenhouse gas emissions, and not worse off. In other words, they actually can "get richer by becoming greener." It is only when people attain such new awareness of their future economic prospects that they will be willing to make the necessary changes to solve the climate crisis, once they truly believe that making such a transformation will help them economically, and not harm them. A new consciousness of Economic Hope will enable the world to genuinely transform itself into becoming a more sustainable, resilient, equitable, and prosperous economy that avoids the worst effects of catastrophic climate change.

It was the goal of replacing Economic Fear with Economic Hope that led GUD to advance our strategic policy and action framework -- Metropolitan Economic Strategy, Sustainable Innovation, and Inclusive Prosperity (which we also called Sustainable Economic Development and Climate Prosperity) -- as fundamental to our global mission and purpose (Weiss, 2005; Weiss, 2006a; Weiss, 2008b; Nixon and Weiss, 2010; Weiss and Nixon, 2011; Weiss and Schoenberger, 2015). I had originally developed these ideas during the 1980s and 90s as Associate Professor and Director of the Real Estate Development Research Center at Columbia University, and as Special Assistant to Housing and Urban Development Secretary Henry Cisneros and HUD Liaison to the President’s Council on Sustainable Development in the Clinton-Gore Administration (Weiss, 1987; Weiss and Metzger, 1987b;

Weiss and Metzger, 1988; Miles, Malizia, Weiss, Berens, and Travis, 1991; Cisneros, 1993; Cisneros, Weiss, Waldhorn, Gollub, Lyman, Egan, and Goldstein, 1996; Cisneros and Weiss, 1997; Weiss, 1997; Weiss and Weinstein, 1997; Monteilh and Weiss, 1998; Cisneros and Weiss, 1999; Weiss and Rosan, 1999; Weiss, 2001a; Hughes, 2001; Weiss, 2002a; Weiss, 2002c; Weiss 2008a). Then in 2001, with strong leadership from founding Vice Chair Peter Hall, GUD began applying this approach in collaboration with cities, counties, regions, states, and provinces in many countries worldwide. (Weiss and Schoenberger, 2015; Castells and Hall, 1994; Hall, 1998; Hall, 2001; Weiss, 2001b; Weiss, 2001c; Talen, Weiss, and Sarkar, 2001; Weiss, 2002a; Weiss, 2002b; Yang, 2002; Weiss, 2003a; Weiss, 2003b; Weiss and Fazzano, 2004; Fazzano and Weiss, 2004; Cahyadi, Kursten, Weiss, and Yang, 2004; Soh, 2004; Penalver-Aguila and Fazzano, 2004; TenBrink, 2004; Cahyadi and TenBrink, 2004; Hall, 2005; Yunus, 2005; Weiss, 2006b; Hall, 2007: Weiss, 2007a; Weiss, 2007b; Seymoar, 2007; Banuri and Weiss, 2009; Henderson, Nash, and Weiss, 2009; Garmise, Singerman, and Thorstensen, 2009; Gray, 2009; Shah, Nixon, and Weiss, 2010; Hall, 2014).

During 2010-11 GUD worked with the Brazil and US Governments, Energy and Climate Partnership of the Americas (ECPA), Organization of American States (OAS), and American Planning Association to organize the world's first international sustainable economic development conference, "Planning for Sustainable Economic Development Across the Americas" held in Curitiba, Brazil, during June 7-8, 2011, with leadership from GUD Vice Chair and former Curitiba Mayor Jaime Lerner (ECPA, 2011; Weiss and Nixon, 2011; Lerner, 2016; Schwartz, 2004; Fazzano and Weiss, 2004). This conference showcased GUD's work in the US during 2007-11, including with the State of Delaware, Metropolitan Portland (OR/WA) that created EcoDistricts, San Antonio (TX), San Jose/Silicon Valley (CA), and Sarasota County/Southwest Florida (Weiss, 2008b; Nixon, Cleveland, and Weiss, 2009; Silicon Valley Climate Prosperity Council, 2009; Nixon, Cleveland, Weiss, and Victors, 2011; Bennett, 2011; Heatherington, 2011; Krutko, 2011; McClellan, 2011; Zinn, 2011). At this time GUD advanced a new Sustainable Innovation and Inclusive Prosperity economic development framework called “The Four Greens”: *Green Savings, Green Opportunities, Green Talent, and Green Places* (Weiss and Nixon, 2011; Nixon and Weiss, 2010).

After we completed our ECPA conference in Curitiba, GUD worked as advisers to the São Paulo City Government (SP Housing and Urbanism,

2011), as consultants in Belo Horizonte for the Federation of Industries of the State of Minas Gerais (Weiss, Sedmak-Weiss, and Bromley, 2012), participated in the US-Brazil Innovation Summit in Rio de Janeiro where I was a leading speaker (Liskaukas, 2013), and most importantly, we embarked on what turned out to be an entire decade of intensive work in the City of Porto Alegre and the State of Rio Grande do Sul. It began with initial GUD sustainable economic development consulting during 2011-12 for the Rio Grande do Sul (RS) State Government, Federation of Industries of the State of Rio Grande do Sul (FIERGS), and Porto Alegre City Government (Weiss, Sedmak-Weiss, and Rodriguez, 2012). Then in 2013 the RS State Government obtained major funding from the World Bank and hired GUD to produce a statewide economic strategy for Rio Grande do Sul to become the most sustainable and innovative place in Latin America by 2030 (Weiss, Sedmak-Weiss, and Rodriguez, 2015; Fecomércio-RS, 2016).

GUD completed our proposed Rio Grande do Sul "Leapfrog Economic Strategy" in March 2015 (Weiss, Sedmak-Weiss, and Rodriguez, 2015). The centerpiece of this strategy was to organize Sustainable Innovation Zones in key cities throughout the state, starting with the capital city of Porto Alegre. Sustainable Innovation Zones near urban universities, technology parks, and business incubators are designed to become international magnets for talent, and concentrated experiments in developing advanced technologies and globally scalable products and services that conserve, reuse, and renew resources much more efficiently (Weiss, Sedmak-Weiss, and Rodriquez, 2015; Weiss and Nascimento, 2016; Weiss, 2020b). Through this approach, people, places, and organizations can experience greater prosperity and quality of life, earning and saving more money with thriving businesses, better jobs, and higher incomes, at the same time that they are helping to accomplish the UN Sustainable Development Goals, Paris Climate Agreement, and New Urban Agenda by 2030. The core concept of Sustainable Innovation Zones is that they necessarily combine together six key elements: *Innovation and Technology, Entrepreneurship and Startups, Sustainability and Resource Efficiency, Creativity and Collaboration, Participatory Community Management,* and *Business-Friendly Environment.* This combination has very broad appeal across the cultural and political spectrum in many different countries (Weiss, 2022a; Weiss, 2022b).

Participatory Community Transformation

Before describing how we organized ZISPOA, first I want to explain why GUD developed our overall strategy for organizing Sustainable Innovation Zones.

Throughout my life, I have always been a believer in participatory and inclusive community action, especially in economic development, because I believe that all human beings share a profound concern and care for their own livelihood and well-being, and for the livelihood and well-being of their loved ones. Therefore, any potential economic, social, political, cultural, or environmental reforms must directly address those basic concerns by clearly reassuring people that proposed changes will improve future livelihoods and well-being for themselves and their loved ones, and not harm them.

As an International Visiting Professor at the Federal University of Rio Grande do Sul (UFRGS), I worked with several faculty colleagues to help support ZISPOA by developing an interdisciplinary research project and co-teaching a graduate course on Participatory Community Transformation together with Fabian Domingues, Eber Marzulo, Michael Menser, Tarson Nunez, and Wrana Panizzi, and we also organized an international symposium in September 2019 (Weiss, 2022a; Coelho de Souza, Marzulo, and Meirelles, 2022).

One of the experiences that helped shape our approach to organizing ZISPOA was the participatory and inclusive spirit of the NoMa initiative two decades earlier in Washington, DC. During the late 1990s, Richard Monteilh and I coordinated the Strategic Economic Development Plan for Washington, DC, and one of our most significant accomplishments was the dramatic transformation of a railyard area, consisting mostly of vacant land and abandoned warehouses, into the newly renamed NoMa (North of Massachusetts Avenue) neighborhood, anchored by a new $115 million infill Metro station and new biking and hiking trail, financed by a complex three-way partnership between the city government, private sector, and federal government. Within a decade, NoMa became the fastest-growing and greenest transit-oriented community in the city and metropolitan region, and an award-winning international best practices success story. The NoMa area was mainly bordered by moderate-income African-American neighborhoods. We engaged in an extremely inclusive and participatory process with local residents and businesses, collaborating with civic and religious groups, community development organizations, and business

associations to build support for constructing the new NoMa Metro Station, Metropolitan Branch Trail, McKinley Technology High School, and many additional community improvements. The net result was massive economic investment, development, and job-creation in the immediate area, combined with effective stabilization of the surrounding neighborhoods. NoMa is now full of new LEED-certified “green” commercial and residential buildings, with extensive bike-sharing, recycling, and many other sustainable features that have enabled it to become a very special and increasingly thriving place in the city, one where local organizing played a vital role in achieving better outcomes (Monteilh and Weiss, 1998; Weiss, 2002c; Weiss, 2008a).

A decade later, when GUD was working with cities, counties, regions, states, and provinces on sustainable economic development strategies, I kept reflecting back on my profound experiences with NoMa. What I particularly loved about it was that it was so participatory and inclusive. For more than four years we held regular monthly stakeholder meetings that were completely open to anyone, ranging from senior government officials and business executives to community activists and local citizens who could walk in from the street and share their visions and concerns with equal respect. Our philosophy was that we were all in it together, and either we would all succeed together or we would all fail together. Everyone was asked to help move things forward and support each other to accomplish their challenging commitments.

In order to change consciousness and effectively address Einstein's insight, it is necessary for people to "be the change you seek in the world" (an inspiring phrase attributed to Mahatma Ghandi), and also to experience both the process and results of this change. We can only succeed when people actively participate in the ongoing process, directly experience the changes as they occur over time, and personally benefit from the results. They need to see, touch, feel, and know that people, places, and organizations really do become better off economically by becoming more sustainable, and not worse off. This is the heart of the Sustainable Innovation Zones idea.

Today in much of the world, and certainly in Brazil, many college-educated youth are engaging in entrepreneurial activities primarily as a form of social and cultural rebellion, as a way of creating their own future that is intended to be partly outside of and free from the traditional top-down institutional constraints of governments and corporations. Responding to this trend, we actively connected Sustainable Innovation Zones with *Entrepreneurship and Startups* (Schneider, 2016). Similarly, the creative

economy is another form of social protest, and we also connected Sustainable Innovation Zones with *Creativity and Collaboration*. Further, since technological innovation is generally viewed, especially by youth, as a progressive force for positive change, we connected Sustainable Innovation Zones with *Innovation and Technology*.

Sustainable Innovation Zones are a type of urban "Innovation Ecosystem" as described recently about New York City (Zukin, 2020; Mulas and Gastelu-Iturri, 2016). The most significant difference is that GUD's focus is on *sustainable* innovations. In our approach, all of the new products, services, technologies, and talent are intended to help make the world more environmentally sustainable and climate resilient in a circular economy. In addition, we focus on place-based solutions by directly emphasizing transformation of the local community as a key catalyst for generating larger scale changes over wider territories (Zdenek and Walsh, 2017). Also, Sustainable Innovation Zones are designed to actively involve social entrepreneurs, sustainability activists, creative design experts, and many others, empowered by a grassroots movement, rather than including only technologists and investors. Sustainable Innovation Zones essentially are a model for "green" community economic development (Fitzgerald, 2020), with a greater focus on business and employment development than related community sustainability initiatives such as EcoDistricts or Transition Towns (Bennett, 2011).

We had the idea that Sustainable Innovation Zones could become a great way to organize people and enable them to learn from and be inspired by community change in order to later be empowered with the vision and optimistic spirit to make much larger and more ambitious changes in their cities, regions, states, provinces, and nations. We had been trying to do this in Brazil since 2007, first in Curitiba, then in São Paulo, and then again in Belo Horizonte, but each time we were working with state and city governments and statewide industry associations, and each time as we were beginning to make significant progress, we were set back by elections that changed key leadership at the top, and either we needed to start all over again, or give up completely. When it happened for the fourth time in 2015 in Porto Alegre with the change at the top of the RS State Government, this time we tried something different, a university-based and community-oriented approach, and remarkably, it worked.

That is precisely what made ZISPOA so magical. By adopting a more grassroots approach, we discovered what turned out to be a better method for effectively organizing and mobilizing people and institutions.

Organizing ZISPOA

The Leapfrog Economic Strategy directly confronted the question of how it would be possible to dramatically transform the state's huge geographic area and large population of more than 11 million people. Rio Grande do Sul is bigger than Sweden and many other countries. Accordingly, the centerpiece of the Leapfrog Economic Strategy was to focus on local community transformation as the leading edge of a much larger statewide change, because it was the best way to encourage citizens to actively participate in making the changes and directly benefit from the results. Sustainable Innovation Zones around universities in cities throughout the state would become the main catalysts for dynamic and sustainable economic growth, serving as magnets for talent and concentrated experiments in developing new technologies, products, and services that conserve, reuse, and renew resources more efficiently, specifically customized to fit well with the city's and region's fundamental assets and industry networks. Sustainable Innovation Zones would maximize the local strengths of infrastructure, resources, and capabilities to become the primary engines for growing businesses, jobs, and incomes. In our Leapfrog Economic Strategy report, we recommended that the first Sustainable Innovation Zone should be in Porto Alegre, and identified where in the city it should be located (Weiss, Sedmak-Weiss, and Rodriguez, 2015; Scruggs, 2014).

When we began organizing ZISPOA in 2015, Porto Alegre Mayor Jose Fortunati, Vice Mayor Sebastião Melo, Cezar Busatto (Secretary of Local Governance in charge of Participatory Budgeting, Chief Resilience Officer supported by the Rockefeller Foundation's 100 Resilient Cities initiative, and GUD Board Member), Thiago Ribeiro, Rodrigo Corradi, Cibele Carneiro, and many other city government officials encouraged GUD to organize the first Sustainable Innovation Zone in Porto Alegre, offering to provide us with active support (though no direct funding). GUD began working with local sustainability activists and entrepreneurs to help organize Paralelo Vivo, a new startup hub and business incubator, coworking and maker space, and community education center specifically dedicated to supporting sustainable innovation-oriented businesses, organizations, and activities. Paralelo Vivo opened its doors in September 2015 with more than 36 organizations as

members, and it was located in a large old house in the heart of the area that we had already selected for the Porto Alegre Sustainable Innovation Zone. This area consisted of parts of two adjacent neighborhoods, Floresta and Indepêndencia, that was an emerging "hip" community near UFRGS, full of solid older structures ideal for studio spaces attractive to younger artists, artisans, activists, and entrepreneurs (Weiss, 2015a; Weiss, 2016; Weiss and Nascimento, 2016).

One of the organizations that helped create and manage Paralelo Vivo was Pulsar, a group of young sustainable entrepreneurship training specialists. The Pulsar team was leading the Entrepreneurship Challenge at UFRGS, a month-long program for undergraduate students, primarily from engineering, management, and design. They asked me to serve as a mentor for the participants, and when I told the students about the RS Leapfrog Economic Strategy, many of them got very excited about it and wanted to help make it a reality. They specifically asked me to teach a course about it at Paralelo Vivo. I was deeply inspired by their energy and enthusiasm, both the UFRGS students and the Paralelo Vivo activists and entrepreneurs, who reminded me of my own student and community activism during the 1960s and 70s.

Rather than teach an academic-style course about the Leapfrog Economic Strategy, we decided to begin laying the foundation for actual organizing, calling the course "Strategic Planning for a Sustainable Innovation Zone in Porto Alegre" (Weiss, 2015b). We hoped that this course could empower the students to do useful research on what we called Asset Mapping and Network Analysis, and also to help spread the ideas and vision for what could eventually become a Sustainable Innovation Zone.

The course, co-taught with Pulsar, took place on Tuesday evenings for eight consecutive weeks from October to December in 2015. There were about 40 participants, mostly current university students or recent graduates, though also including several older sustainability leaders and two UFRGS professors. On the first night of class in late October, when people asked how we would organize a Sustainable Innovation Zone together, I told them "Let's tell people we're doing it, and then see what happens." Everyone laughed, including me, but that actually turned out to be the crucial first step. Later we adopted as our motto the famous quote from Lao Tzu, "A long journey begins with a single step" (we even printed it on the front of our ZISPOA t-shirts: "Toda Grande Jornada Começa com um Primeiro Passo").

Since the Leapfrog Economic Strategy had recommended that the RS State Government organize and manage the Porto Alegre Sustainable Innovation Zone (and all future zones statewide), the thought that we might be able to do it ourselves was a bit scary at first. It just didn't seem possible. We quickly discovered that not only was it possible, it actually turned out to be lots of fun. The community response was amazing.

So we began working with Paralelo Vivo and Pulsar to organize the Sustainable Innovation Zone, not as a top-down state government or city government initiative, but as a grassroots citizens and university-based movement. Surprisingly, it worked. In the weekly course we organized the students into strategic action groups based on the six key elements (*Innovation and Technology, Entrepreneurship and Startups, Sustainability and Resource Efficiency, Creativity and Collaboration, Participatory Community Management, and Business-Friendly Environment)*, and each group planned a major strategic action initiative that they implemented over the next six months, which successfully mobilized large numbers of people to get involved in various projects, events, and activities. Within the first month of the course, the Porto Alegre City Government made a three-minute video that quickly went viral on their website and social media platforms (Weiss, 2016). ZISPOA also obtained additional citywide recognition by helping lead a climate march in late November. Then, astonishingly, in mid-December at COP 21 in Paris, ZISPOA (as the first step of the RS Leapfrog Economic Strategy) was selected by the Swedish Institute in Stockholm as an international sustainable development initiative to receive their support in 2016, which included the Swedish Embassy in Brasilia collaborating with GUD and ZISPOA as key partners to help organize Sweden-Brazil Innovation Week events in Porto Alegre during October 2016 (Weiss, 2016; Weiss, 2017a; Weiss, 2020a; Weiss, 2022c). At our final class session on December 15th, we had more than 100 people there to watch the participants present their strategic action initiatives. Paralelo Vivo was so crowded that some people even had to stand in the door of the large classroom because there weren’t enough chairs. It was incredibly exciting. The energy and enthusiasm was rapidly growing.

During the first course, we decided collectively that ZISPOA would focus on accomplishing several key goals: to become the most solar-powered, most energy-efficient, most bike-friendly (sustainable mobility), and most renewable technology-friendly (circular economy and zero waste). Over the past seven years we have made significant progress, though we still have a long way to go.

After the initial course concluded in mid-December 2015, GUD committed to supporting ZISPOA as a major global project. My wife Nancy Sedmak-Weiss (GUD's Chief Legal Officer) and I continued working in Porto Alegre to help coordinate this effort, and I became an International Visiting Professor at UFRGS. The historic main campus of UFRGS is located inside ZISPOA, and it quickly became a key base for our activities, starting with dozens of students, and soon involving many professors through a dynamic new group called ZISProf. In December 2017 the Porto Alegre City Council voted unanimously to officially recognize and support ZISPOA (Carneiro, 2017). This legislation then led the Porto Alegre City Council to hold a major public workshop in June 2018 on how ZISPOA can help enable the city to achieve the UN Sustainable Development Goals by 2030 (Carneiro, 2018). We have accomplished many good things since 2015.

Amazingly, organizing ZISPOA as a citizen-university movement actually worked, but why? Here are a few key lessons we learned along the way:

a) Taking Action and Producing Results

In Brazilian culture people love to talk about imagining a better future, though often there is quite a large gap between talk and action. From the first night of the first course, we strongly emphasized "taking action and producing results" and worked closely with everyone to help teach them how to accomplish their chosen tasks. First, we organized the course participants into six working groups, with each group responsible for planning and implementing one or more strategic action initiatives that their group, together with others, would carry out after the course concluded in December 2015. Each strategic action initiative was to be started or completed (depending on the type of action) by June 2016.

The Innovation and Technology group helped promote "solar trees" in public spaces. Produced by a local startup, OZ Engenharia, they were built out of metal in the shape of a tree, with solar PV cells as the leaves on the branches. The "trees" provided colorful lighting and electronic music and videos, serving as a powerful educational Sustainable Innovation symbol uniting technology and nature. The Entrepreneurship and Startups group worked with university professors and other business, finance, management, and technical experts to create a mentoring program for sustainable

innovation entrepreneurs. The Sustainability and Resource Efficiency group created an ongoing seminar series called ZISTalks, and also worked with the city government to transform an underutilized recycling facility located inside ZISPOA into a community gardening and composting center called Espaço Floresta. This project later gave birth to two startups promoting recycling and composting of food waste, one for households (Re-ciclo), and another for businesses (Arco). The Creativity and Collaboration group organized a huge all-day UN World Environment Day Festival on June 5th, 2016, attended by more than 400 people, with education about many ZISPOA projects from recycling to solar energy to bicycling to electric car sharing, and including lots of local organic food and beverages and inspiring entertainment. This festival took place at Vila Flores, a renovated cultural collaborative and historic structure in ZISPOA, and was held in honor of Jose Lutzenberger, Brazil's most famous environmentalist (he helped organize the 1992 Earth Summit in Rio de Janeiro) and co-founder of Agapan (Brazil's first modern environmental advocacy organization) in Porto Alegre during the early 1970s. The Participatory Community Management group engaged in extensive community outreach and conducted a neighborhood survey of ideas related to ZISPOA. The Business-Friendly Environment group produced an information manual and website for sustainable innovation businesses (Weiss, 2017a).

Soon we organized a second course at Paralelo Vivo, again for about 40 participants, but instead of forming six new groups, we asked the new students to join the existing six groups from the first course, and we set aside an hour after every class for each of the groups to meet together. This was an effective way to strengthen and expand our strategic action initiative groups and the entire movement. We also began organizing many other activities, including monthly Green Drinks networking events (featuring short talks by local sustainable businesses, plus local organic food and beverages -- both the people *and* the drinks were "green"). As part of the global Smart Living Challenge with the Swedish Government, we chose to work on Sustainable Mobility, helping support a private dockless bike-sharing startup called Loop, and actively promoting the city government's BikePOA bike-sharing program, with the result that ZISPOA now has more bike-sharing stations and dedicated bike lanes than any other area of the city. We also worked with students from UFRGS Professor Luis Felipe Nascimento's social and environmental management course to plan for electric car sharing in ZISPOA. Indeed, we even built a solar-powered electric vehicle charging station for the October 2016 opening of Sweden-Brazil Innovation Week in Porto Alegre. With startups MVM, Orkestra, and YES using their own

resources, we successfully completed the charging station, which was launched at a major event with the Swedish Ambassador, Mayor Fortunati, and a cheering crowd of more than 100 people (O Sul, 2017; Weiss, 2017a). During subsequent annual Sweden-Brazil Innovation Weeks, we organized a large Bike-Friendly Festival, a Glocal Climate Challenge Bike Tour of ZISPOA, and a major Circular Economy Seminar that generated a citywide "Creathon" (creative hackathon) competition for innovative entrepreneurial zero waste recycling and reuse solutions in collaboration with the Porto Alegre City Government and UFRGS (Weiss, 2017a; Roso, 2017; Gonzatto, 2019; Weiss, 2020a).

This tradition of *taking action and producing results* continued over the next few years: we built an outdoor Solar Post at UFRGS for charging mobile phones, tablets, and other electronic devices with renewable energy; ZISPOA created a Sustainable Parklet near popular cafes -- replacing on-street parking with pedestrian seating, bike parking, and solar lighting, it was constructed with recycled concrete "eco-blocks" produced by Solidariedade, an NGO creating livelihoods for low-income families through circular economy solutions (Oliveira, 2019; Correio do Povo, 2019; Weiss, 2020a); and much more, including an innovative private sector plan for Solarizing ZISPOA with remote solar electric power generation combined with rooftop solar (Domingues, 2020; US Consulate, 2017). Through mostly voluntary talent and resources, we demonstrated real change that everyone could see and experience, to empower them with hope and vision for future larger scale transformations (Weiss, 2019; Weiss, 2020b; Weiss, 2022a).

Remarkably, ZISPOA had such a substantial impact on Porto Alegre that within six months, a large citywide competition sponsored by Virada Sustentável and the Gaia Foundation for "Good Ideas in Sustainability," with more than 150 applicants seeking cash prizes and citywide recognition, turned out to be a huge confidence boost for our embryonic movement. ZISPOA, Paralelo Vivo, and six of our affiliated startups (Re-ciclo, Loop, MVM, Cesta Feira, Horteria, and Genèse Social) won awards. (Zero Hora, 2016). What was so amazing about this great moment in June 2016 was that just two years earlier, none of these eight entities had yet been created. It was an incredible momentum builder (Weiss, 2016).

The focus on *taking action and producing results* generated an unexpected breakthrough that started with Luis Felipe Nascimento's UFRGS course in 2016 (Araujo, 2017). We discovered that his students really loved having the opportunity to combine academic learning with action-oriented

research. They did a great job working on electric car-sharing, and were very proud to have accomplished something that contributed to real change in Porto Alegre by helping ZISPOA succeed. Students at UFRGS and other local universities became increasingly enthusiastic about encouraging their professors to enable them to work on ZISPOA and sustainable innovation research and action projects directly related to their course curriculum. Arthur Mallet and other students actively involved with ZISPOA organized a new group called ZUNI (ZISPOA at Universities) to collaborate with their professors on this idea, and within a few years, there were more than a dozen different university courses all working on ZISPOA projects. This was a tremendous source of human energy and a major organizing tool for us, and it got even better when the professors created their own group, ZISProf, to directly provide support for ZISPOA, as classroom teachers, as scholarly researchers, as expert advisers, and as mentors for ZISPOA entrepreneurs and activists. The students inspired their professors to take action, and many professors then became vital leaders of ZISPOA.

ZISProf grew to include 150 professors from 16 local universities, and about 25 of them, mostly from UFRGS, became an important part of ZISPOA's leadership, including Luis Felipe Nascimento, Angela Danilevicz, Fabian Domingues, Luiz Carlos Pinto da Silva Filho, Istefani Carisio de Paula, Carla Schwengber ten Caten, Jocelise Jacques, Rafael Roesler, Daniela Brauner, Fernando Dornelles, Luiz Antonio Bressani, Ricardo Cassel, Carlos Henrique Horn, Paulo Schneider, Jose Luis Ribeiro, Marcelo Lubaszewski, Eber Marzulo, Darci Campani, Maicon Ramos, Mariana Resener, and Aurora Zen, plus Ana Gorini da Veiga and Airton Stein from the Federal University of Health Sciences of Porto Alegre (UFCSPA), which is located in ZISPOA (Pinto da Silva Filho, 2020; Weiss, 2018a; Weiss, 2020a).

Indeed, starting in 2017 the UFRGS Engineering School provided office space and other resources for the ZISPOA Project, and we eventually convinced the UFRGS leadership to commit the entire university to becoming a world leader in sustainable innovation by 2030. ZISPOA is working with faculty and students to transform the Engineering School's Centenario Building into one of the greenest in Brazil in terms of solar power, energy efficiency, and water conservation and recycling. ZISProf has created a new interdisciplinary graduate Sustainable Innovation Professional (SIP) Program at UFRGS as a potential global model for future university education and research (Danilevicz and Nascimento, 2020). ZISPOA’s many campus activities, projects, and courses since 2015 helped enable UFRGS to

recently become internationally ranked as one of the best universities for Sustainability in Brazil and Latin America (Hartmann, 2022; Bigolin, Danilevicz, Weiss, and Pinto da Silva Filho, 2021).

As ZISPOA advanced, it also grew much larger. Each year we expanded the boundaries, such that now the zone includes all of 15 neighborhoods (Auxiliadora, Azenha, Bom Fim, Centro Histórico, Cidade Baixa, Farroupilha, Floresta, Indepêndencia, Menino Deus, Moinhos de Vento, Praia de Belas, Rio Branco, Santa Cecilia, Santana, and São Geraldo). Currently 210,000 people live in ZISPOA, representing 14 percent of Porto Alegre's 1.5 million population.

b) Participatory Inclusiveness

Another cultural barrier we faced was the hierarchical and institutionally formal nature of life in Brazil, particularly at universities. We completely altered that traditional pattern by always welcoming everyone to actively participate, and including everyone together as equals in whatever we did. For example, in our ZISPOA courses, university professors participated equally with university students, including their own students. This was unheard of. People of all ages, from 18 to 78, participated equally together in all of our activities. Whenever someone expressed even a bit of interest in ZISPOA, we immediately invited her or him to participate in any of our existing project groups (after the first two courses, we changed from working groups based on the six key elements to active project-based groups, such as solar energy, bike-friendly, electric car sharing, circular economy, and more). Every group was always open for anyone new to join them. And if people were not interested in joining any of our existing groups, we encouraged them to start their own new group project. Everyone was always welcome to join in. People were frequently surprised that we were so open, but this became a vital part of the overall spirit of ZISPOA that was truly special and very much appreciated. Nobody was ever excluded. We treated everyone with respect and appreciation for their contributions to our collective efforts. Considering that we had no money to pay anyone and very limited resources even to cover basic expenses, participatory inclusiveness made it possible for us to succeed through almost entirely voluntary action and extensively donated in-kind resources.

During our first ZISPOA course, I spoke about a politically radical news program on a progressive San Francisco rock music radio station (KSAN)

during the late 1960s, with the announcer always concluding his half-hour broadcast by saying: "That's today's news. If you don't like it, go out and make some of your own." I told them that in ZISPOA we were "making our own news" -- which turned out to be an attractive and energizing idea for many people who were truly pleased to be included in such a special opportunity to actively participate and contribute to making real change.

A closely related aspect of ZISPOA's approach was that we tried to keep things simple and practical in our communications and our actions, and most importantly, to always have lots of fun. In Brazil people love to laugh and hug, and we did plenty of both. Whether it was a meeting or an event, whatever we did, we made sure that everyone was enjoying themselves and having a good time, which was why it was so important for people to feel genuinely included.

One example of our approach is ZISProf. Not only have we been able to get professors to collaborate across different universities, we even brought together faculty from different schools and departments at UFRGS who did not know each other and had never worked together before. It's been wonderful to foster such fruitful collaboration, and it led directly to the new interdisciplinary Sustainable Innovation Professional (SIP) Program, and to similar cross-disciplinary faculty cooperation on our Participatory Community Transformation research and teaching (Danilevicz and Nascimento, 2020; Pinto da Silva Filho, 2020; Coelho de Souza, Marzulo, and Meirelles, 2022).

Probably the best example of our participatory inclusiveness approach came in November 2017 when GUD and ZISPOA organized a three-day Urban Thinkers Campus, an officially sponsored initiative of UN-Habitat's World Urban Campaign (Jornal do Comércio, 2017; Weiss, 2017b; Weiss, 2018a). We had nearly 200 participants, but what was incredibly path-breaking was that we had more than 90 speakers representing 75 different organizations from throughout the city, and many people from this wide spectrum of groups had not previously worked together (Weiss, 2018b). Our Urban Thinkers Campus was much more inclusive than typical events in Porto Alegre, and clearly established the broad base of support and collaboration that ZISPOA symbolized. Indeed, in 2018 a new public-private partnership called Pacto Alegre was organized, and it was far more inclusive than earlier civic initiatives (Pinto da Silva Filho, 2020). Then in 2019 a new citizen movement called POA Inquieta was created, based on organizing numerous voluntary issue-oriented working groups. Both Pacto Alegre and

POA Inquieta, in terms of the participatory and inclusive ways they were organized, drew ideas and inspiration from ZISPOA.

c) Independent Governance and Political Non-Partisanship

GUD had consistently run into the difficulties of politics in Brazil, where each time we were making progress somewhere, a new election brought a change in leadership from different political parties, and soon thereafter our progress would grind to an abrupt halt. In fact, the only reason we were even trying to organize ZISPOA ourselves is because our original client, RS Governor Tarso Genro, didn't get reelected in October 2014. In creating ZISPOA, we drew upon Saul Alinsky's community organizing philosophy, and maintained scrupulous non-partisan political neutrality (Horwitt, 1992). We did not associate our efforts with any particular politicians or political parties. As ZISPOA became more well-known and popular, we happily welcomed support from all political leaders and elected officials, at the same time making it clear that we would not be endorsing their electoral activities.

For example, our two biggest supporters on the Porto Alegre City Council, André Carús and Marcelo Sgarbossa, were from opposing parties. ZISPOA was one of the few issues they both agreed on. In December 2017, two years after ZISPOA began, the Porto Alegre City Council voted unanimously to officially recognize ZISPOA and commit to providing policy support (Carneiro, 2017). Even despite extreme partisanship, when almost every vote taken on any issue was sharply divided, every single Councilmember voted for ZISPOA, and nobody voted against us. This was an extraordinary accomplishment.

The previous year, in October 2016, there was a mayoral election. Mayor Fortunati was in his second term and could not run again. Vice Mayor Sebastião Melo ran to succeed him. Both of them had been strong supporters of ZISPOA. Vice Mayor Melo was bitterly opposed by a more conservative candidate, Nelson Marchezan Jr., who won the election. At first we were apprehensive, until we were soon pleased to learn that Mayor Marchezan also supported ZISPOA, and he later agreed with and signed the ZISPOA bill that the City Council unanimously passed. In November 2020 we had yet another municipal election, and this time Sebastião Melo was elected Mayor. Mayor Melo then appointed Luiz Carlos Pinto da Silva Filho (UFRGS Engineering Professor, Pacto Alegre Coordinator, ZISProf leader, and GUD Senior Fellow and Board Member) as his Innovation Secretary. We knew

that whichever candidate won the mayoral election, ZISPOA would continue receiving strong support from the city government leadership, because we enjoyed very good connections with all major political parties. Independent governance and political non-partisanship have been a vital blessing for ZISPOA.

Beyond ZISPOA: Organizing More Sustainable Innovation Zones

As ZISPOA became firmly established after our first two years of activity, in 2017 we developed a much stronger institutional base of support at UFRGS by establishing the ZISPOA Project office in the Engineering School and hosting the UN-Habitat Urban Thinkers Campus. During 2018 we began considering how we could potentially spread Sustainable Innovation Zones to other cities. The various lessons learned from our two years of experience at that point turned out to be of critical importance, because we were able to advise Jose Barria, a young architect in Panama who was part of GUD's global network, on how to organize a Sustainable Innovation Zone. Through many online conversations and email messages, we were able to help guide Jose and his colleagues step-by-step through our ongoing process. They generally followed our ZISPOA approach, organizing the Panama City Sustainable Innovation Zone (ACTA) as an independent community-based citizens movement. It was a pleasure to share with them everything we had already learned, and they did an excellent job of launching ACTA in March 2019.

Around the same time, we also got our third Sustainable Innovation Zone, in Santo Ângelo, a smaller city in Rio Grande do Sul. In the 2015 Leapfrog Economic Strategy we had envisioned Sustainable Innovation Zones being established in the state's larger cities with more than 200,000 residents. Santo Ângelo has a population of 80,000. Also, in the Leapfrog Economic Strategy we had recommended that Sustainable Innovation Zones should include one or more neighborhoods near a major university in larger cities. Santo Ângelo, a regional agricultural services center (their biggest annual event is a large Agroindustry Corn Fair called Fenamilho Internacional) that is home to three local universities, chose to designate the entire municipal boundaries of the city as their Sustainable Innovation Zone.

How did it happen? Jorge Tonetto, a ZISProf leader and GUD Senior Fellow who lives in ZISPOA, was the Porto Alegre City Government's Finance Secretary under Mayor Fortunati, and later served as Deputy

Finance Minister for the RS State Government. When Mayor Marchezan took over in 2017, Jorge Tonetto went back to his hometown of Santo Ângelo to serve for one year as the Innovation Secretary for his good friend and newly elected Mayor, Jacques Barbosa. Jorge enthusiastically convinced Mayor Barbosa to help create a local version of ZISPOA. In December 2017 they brought me in to give two major public speeches and engage in multiple meetings with city officials and business, university, and community leaders, sharing with them insights and experiences about how we organized ZISPOA. Mayor Barbosa hired Helenice Reis, a local entrepreneur and former university professor, as the full-time coordinator of ZISSAN. She has done an excellent job over the past five years, following ZISPOA's approach by organizing ZISSAN as a citizen movement with several action-oriented working groups plus a ZISProf group of professors from all three local universities. ZISSAN frequently organizes and sponsors many community festivals and other related activities and projects.

Fortunately Mayor Barbosa, who was in his first term in 2017, was reelected in November 2020 for a second four-year term, and Helenice Reis, now a GUD Senior Fellow, is continuing to work for the city government. Notably, his reelection campaign exposed the potential problems of relying primarily on partisan political support, because if Mayor Barbosa had been defeated, possibly Helenice would not have been able to keep her job. Perhaps ZISSAN still would have survived, though it might have suffered serious organizational setbacks if Helenice could not continue working full-time to lead ZISSAN's efforts.

The fact that Rio Grande do Sul now has both ZISPOA and ZISSAN has made a significant impact on the administration of Governor Eduardo Leite, who was first elected in 2018 and then reelected in 2022. In 2019 Governor Leite appointed UFRGS Professor Luis Lamb as his new Secretary of Innovation, Science, and Technology (SICT), and together they created a new program called Inova RS, which in some ways is an updated version of GUD's 2015 World Bank-funded Leapfrog Economic Strategy. With encouragement from ZISProf, Secretary Lamb then hired André França and Tiago de Abreu, two young ZISPOA leaders who were recent UFRGS graduates and GUD Fellows, to serve as coordinators for Inova RS by working with key cities in eight regions around the state. Currently several of these regions are beginning to organize Sustainable Innovation Zones similar to ZISPOA and ZISSAN, including the Litoral Norte region (ZISLIT), led by GUD Senior Fellows Rosangela Viegas and Juliana Klas. Rosangela Viegas is an Innovation Manager for Inova RS, and Juliana Klas

is an Engineering Professor at the UFRGS campus in Tramandai.

In 2019 GUD began considering how to organize a global movement of Sustainable Innovation Zones, building on the accomplishments of ZISPOA, ACTA, and ZISSAN. A GUD team began organizing a Sustainable Innovation Zone in London (UK), and we started discussions with Brooklyn College and the City University of New York (CUNY), and with the University of Toronto, about potentially organizing Sustainable Innovation Zones in Brooklyn and Toronto. GUD is actively exploring similar opportunities in other cities in many countries. During December 2019, we held another UN-Habitat Urban Thinkers Campus at UFRGS, Vila Flores, and other ZISPOA venues to explore how to globalize Sustainable Innovation Zones (Weiss, 2020a). Then in June 2020, Professor Nicky Morrison, a GUD Senior Fellow at Western Sydney University (WSU) in Australia, began organizing the Penrith Sustainable Innovation Community (PSIC), with strong support from WSU and the New South Wales State Government.

During 2022, GUD helped organized two new Sustainable Innovation Zones: 1) the Wheaton Sustainable Innovation Zone (WSIZ) in Montgomery County, Maryland, near Washington, DC, led by the Montgomery County Economic Development Corporation (MCEDC), Bethesda Green, and One Montgomery Green, with funding from MCEDC and the US Department of Energy's Inclusive Energy Innovation Prize; and 2) the Poznan Sustainable Innovation Zone (EDIT Poznan) in Poland, led by an interdisciplinary group of energetic professors and students from the Poznan University of Technology and Adam Mickiewicz University.

In November 2022, the US National Academies of Sciences, Engineering, and Medicine (NASEM) published a new report, *Operationalizing Sustainable Development to Benefit People and the Planet*. Chapter 5 highlights two major case studies that NASEM's distinguished international committee of experts considered to be best practices examples of sustainable urban development. The case study for the Global North is about Copenhagen, Denmark. The case study for the Global South is about Porto Alegre, Brazil, focusing on ZISPOA (NASEM, 2022).

COVID-19 has made things much more difficult and challenging for everyone in the world since the beginning of 2020. Nevertheless, we remain optimistic and hopeful about the long-run prospects for this very important and exciting international Sustainable Innovation Zones movement.

CONCLUSION: Participatory Inclusiveness and Taking Action to Produce Results are Vital for Sustainable Innovation Zones to Succeed

In considering the three key lessons that GUD learned from organizing ZISPOA since 2015, one of them, independent governance and political non-partisanship works very well for the university-based model where key leadership is coming from academia, civil society, and the private sector, and that is the approach currently being applied in Panama City, Poznan, and Western Sydney. However, in some Sustainable Innovation Zones, such as in Santo Ângelo and Wheaton, governments are playing a vital leadership role. Either way, the other two key lessons from ZISPOA are essential for any Sustainable Innovation Zone to succeed: 1) Taking Action and Producing Results; and 2) Participatory Inclusiveness.

Focusing on these two methods will be key for involving large numbers of people and organizations to effectively collaborate and mobilize sufficient resources to invest in developing Green Savings, Green Opportunities, Green Talent, and Green Places that generate Sustainable Innovation and Inclusive Prosperity, both in the short term and in the long run. While the physical, financial, and political challenges are immense, Participatory Community Transformation involving the vision, spirit, capabilities, and power of people working together for their mutual benefit is an excellent way to overcome those challenges.

Bibliographic references

Anderson R. with White R. (2009), *Confessions of a Radical Industrialist: Profits, People, Purpose – Doing Business by Respecting the Earth,* St. Martin's Press, New York.

Araujo L. (2017), "Governments should encourage good environmental practices, says Nascimento", *Jornal do Comércio*, Porto Alegre, October 8, 2017.

Banuri T. and Weiss M. (2009), *Global Climate Prosperity Agreement: The One Trillion Dollar Deal*, United Nations Department of Economic and Social Affairs, New York, and Global Urban Development, Washington, DC.

Bloomberg M. and Pope C. (2017), *Climate of Hope: How Cities, Businesses, and Citizens Can Save the Planet*, St. Martin's Press, New York.

Bennett R. (2011), *Presentation on the Portland Metro Climate Prosperity Project*, ECPA Conference on Planning for Sustainable Economic Development Across the Americas, Curitiba, Brazil, June 7, 2011, Global Urban Development, Washington, DC.

Biber E. (2013), "Cultivating a Green Political Landscape: Lessons for Climate Change Policy from the Defeat of California's Proposition 23," *Vanderbilt Law Review*, 66 (2): 399-462.

Bigolin M., Danilevicz A., Weiss M., and Pinto da Silva Filho L. (2021), "Sustainable New Product Development: a Decision-Making Tool for the Construction Industry," *International Journal of Sustainable Engineering*, 14 (4): 618-629.

Builders, Inc. (1982), *The Colgate Project*, University of California, Berkeley.

Cahyadi G., Kursten B., Weiss M., and Yang, G. (2004), *Singapore's Economic Transformation: GUD Metropolitan Economic Strategy Report*, Global Urban Development, Prague.

Cahyadi G. and TenBrink S. (2004), *Barcelona Metropolitan Economic Strategy*, Global Urban Development, Prague.

California Commission on Industrial Innovation (CCII) (1982), *Winning Technologies: A New Industrial Strategy for California and the Nation*. California Commission on Industrial Innovation, Sacramento.

Cano H., Enerson R., Gardels N., and Kieschnick M. (1982), *An Innovation Finance Strategy for the 1980s*, California Commission on Industrial Innovation, Sacramento.

Carneiro C. (2017), "City Council approves ZISPOA, the Sustainable Innovation Zone of Porto Alegre", *Camarapoa*, Porto Alegre City Council, December 20, 2017.

Carneiro C. (2018), "Council releases access to send ZISPOA Project to the Master Plan for Urban Environmental Development", *Camarapoa*, Porto Alegre City Council, June 8, 2018.

Carter S., Wang D., and Chang A. (2006), "The Rosenfeld Effect in California: The *Art* of Energy Efficiency", presentation to *Energy Symposium: "The Rosenfeld Effect"*, April 28, 2006, College of Natural Resources, University of California, Berkeley.

Castells M. and Hall P. (1994), *Technopoles of the World: The Making of 21st Century Industrial Complexes*, Routledge, London.

Cisneros H. (ed.) (1993), *Interwoven Destinies: Cities and the Nation*, W.W. Norton, New York.

Cisneros H., Weiss M., Waldhorn S., Gollub J., Lyman T., Egan T. and Goldstein S. (1996), *America's New Economy and the Challenge of the Cities: A HUD Report on Metropolitan Economic Strategy*, US Department of Housing and Urban Development, Washington, DC.

Cisneros H. and Weiss M. (1997), "The wealth of regions and the challenge of cities", *The Regionalist*, 2(4): 42–45.

Cisneros H. and Weiss M. (1999), "Metropolitan economic strategy for America's cities and regions", in Nyham B. Atwell G. and Deitmer L. (eds.) *Towards the Learning Region: Education and Regional Innovation in the European Union and the United States*, CEDEFOP, Thessaloniki.

Clean Environment Act (1972), California Proposition 9, University of California, Hastings College of the Law, Scholarship Repository, California Ballot

Propositions and Initiatives, San Francisco.
Coelho de Souza G., Marzulo E., and Meirelles M., eds. (2022), *Transformações Comunitárias Participativas* (Participatory Community Transformation), CirKula, Porto Alegre.
Correio do Povo (2019), "Innovation: Capital will have a sustainable parklet", *Correio do Povo*, Porto Alegre, April 8, 2019.
Coyle E. (1982), *Report on the California Photovoltaic Industry*, California Commission on Industrial Innovation, Sacramento, CA.
Danilevicz A. and Nascimento L. F. (2020), "ZISProf: UFRGS Professors Supporting ZISPOA and Creating the Sustainable Innovation Professional (SIP) Program," Presentation to *Inside ZISPOA: The Porto Alegre Sustainable Innovation Zone, 2015-2020* Webinar 21 August 2020, Global Urban Development, Porto Alegre.
Domingues F. (2020), "Solarizing ZISPOA," Presentation to *Inside ZISPOA: The Porto Alegre Sustainable Innovation Zone, 2015-2020* Webinar 21 August 2020, Global Urban Development, Porto Alegre.
Energy and Climate Partnership of the Americas (ECPA) (2011), International Conference on Planning for Sustainable Economic Development Across the Americas, Curitiba, Brazil, June 7–8, Conference Agenda, Global Urban Development, Washington, DC.
Engel D. and Kammen D. (2009), *Green Jobs and the Clean Energy Economy*, Copenhagen Climate Council, Copenhagen.
Fazzano A. and Weiss M. (2004), *Curitiba Metropolitan Economic Strategy Report*, Global Urban Development, Washington, DC.
Fecomércio-RS (2016), "Interview with Marc Weiss on a sustainable and innovative economy for Rio Grande do Sul", *Revista Bens & Serviços*, Fecomércio-RS, Porto Alegre, June 2016.
Fischer D. (2010), "Local governments lead efforts to combat climate change", *The Daily Climate* and *Scientific American*, May 21, 2010, Springer Nature Group, New York.
Fitzgerald J (2020), *Greenovation*: *Urban Leadership on Climate Change*, Oxford University Press, New York.
Garmise S., Singerman P., and Thorstensen E. (2009), *The Climate Prosperity Handbook*, International Economic Development Council, Washington DC.
Goldstein D (2007), *Saving Energy, Growing Jobs*, Bay Tree Publishing, Richmond, CA.
Gonzatto M. (2019), "Porto Alegre can become a world leader in sustainable innovation, says US urban planner," *Zero Hora*, Porto Alegre, September 25, 2019.
Gray A. (2009), *Belo Horizonte Metropolitan Economic Strategy Report*, Global Urban Development, Washington DC.
Hall P. (1998), *Cities in Civilization: Culture, Innovation, and Urban Order*, Weidenfeld and Nicolson, London.
Hall P. (2001), "Globalization and urban economic prospects", *Global Outlook: International Urban Research Monitor*, 1(1): 1–4.

Hall P. (2005), “The world’s urban systems: a European perspective”, *Global Urban Development Magazine*, 1(1): 1–12.
Hall P. (2007), “Urban land, housing, and transportation: the global challenge”, *Global Urban Development Magazine*, 3(1): 1–11.
Hall P. (2014), *Good Cities, Better Lives: How Europe Discovered the Lost Art of Urbanism*, Routledge, London.
Hall P. and Markusen A. (eds.) (1985), *Silicon Landscapes*, Allen and Unwin, London.
Hartmann M. (2022), “Why UFRGS is the best federal university in Brazil for sustainability and social impact”, *Zero Hora*, Porto Alegre, November 3, 2022.
Hawken P. (ed.) (2017), *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global* Warming, Penguin Books, London.
Hawken P. (2021), *Regeneration: Ending the Climate Crisis in One Generation*, Penguin Books, London.
Heatherington K. (2011), *Presentation on the Southwest Florida Regional Planning Council’s Climate Prosperity Strategy*, ECPA Conference on Planning for Sustainable Economic Development Across the Americas, Curitiba, Brazil, June 7, 2011, Global Urban Development, Washington, DC.
Henderson H., Nash T., and Weiss M. (2009), *New Global Climate Prosperity Scoreboard finds over One Trillion Dollars Invested in the Green Economy since 2007*, December 4, 2009, Ethical Markets Media, Global Urban Development, and Climate Prosperity Alliance, Washington, DC.
Horwitt S. (1992), *Let Them Call Me Rebel: Saul Alinsky: His Life and Legacy*, Vintage, New York.
Hughes K. (2001), “Recent Wilson Center national conference on metropolitan economic strategy, and upcoming international conference on metropolitan quality of life”, *Global Outlook: International Urban Research Monitor*, 1(1): 12.
Intergovernmental Panel on Climate Change (IPCC) (2007), *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Pachauri R. K and Reisinger A. (eds.), Intergovernmental Panel on Climate Change, Geneva, Switzerland.
Jornal do Comércio (2017), “Porto Alegre discusses actions to be the most sustainable and innovative city in Latin America in 2030”, *Jornal do Comércio*, Porto Alegre, November 9, 2017.
Kelsey N. and Zysman J. (2014), “The Green Spiral” in Zysman J. and Huberty M. (eds.), *Can Green Sustain Growth?: From the Religion to the Reality of Sustainable Prosperity*, Stanford Business Books, Stanford.
Krutko P. (2011), *Presentation on San Jose’s Green Vision*, ECPA Conference on Planning for Sustainable Economic Development Across the Americas, Curitiba, Brazil, June 7, 2011, Global Urban Development, Washington, DC.
Liskaukas S. (2013), "Innovation and partnerships: mobility depends on process improvements", *Valor Econômico*, São Paulo, September 16, 2013.
Lerner J. (2016), *Urban Acupuncture*, Island Press, Washington, DC.

Lovins A. and Rocky Mountain Institute (RMI) (2011), *Reinventing Fire: Bold Business Solutions for the New Energy Era*, Chelsea Green Publishing, White River Junction, VT.

Lutrin C. E. and Settle A. K. (1975), "The Public and Ecology: The Role of Initiatives in California's Environmental Politics", *Western Political Quarterly*, 28(2): 352–371.

Markusen A. and Bennett M. (1981), *Job Creation in the Family Service Sector: The Case of Child Care*, Institute of Urban and Regional Development, University of California, Berkeley.

Markusen A. and Weiss M. (1984), "Beyond shopping malls: planning for jobs and for people in Berkeley, California", *Berkeley Planning Journal*, 1(2): 5–23.

Mayer N. (1985), *Action Recommendations for Berkeley Economic Development*, Neil Mayer and Associates, Berkeley.

McClellan S. (2011), *Presentation on Delaware's Clean Energy Economic Strategy*, ECPA Conference on Planning for Sustainable Economic Development Across the Americas, Curitiba, Brazil, June 7, 2011, Global Urban Development, Washington, DC.

Meckling J., Kelsey N., Biber E., and Zysman J. (2015), "Winning coalitions for climate policy: Green industrial policy builds support for carbon regulation", *Science Magazine*, 349(6235): 1170-1171.

Miles M., Malizia E., Weiss M., Berens G., and Travis G. (1991), *Real Estate Development Principles and Process*, Urban Land Institute, Washington, DC.

Monteilh R. and Weiss M. (1998), *The Economic Resurgence of Washington, DC: Citizens Plan for Prosperity in the 21st Century*, District of Columbia Government, Financial Responsibility and Management Assistance Authority, US Department of Commerce Economic Development Administration, Local Initiatives Support Corporation, Fannie Mae, and the World Bank, Washington, DC.

Mulas V. and Gastelu-Iturri M. (2016), *New York City: Transforming a City into a Tech Innovation Leader*, (Washington, DC: World Bank, November 2016).

National Academies of Sciences, Engineering, and Medicine (NASEM) (2022), *Operationalizing Sustainable Development to Benefit People and the Planet*, The National Academies Press, Washington, DC.

Nixon J., Cleveland J., and Weiss M. (2009), *Southwest Florida Climate Prosperity Strategy*, Southwest Florida Regional Planning Council, Fort Myers, FL.

Nixon J. and Weiss M. (2010), *Sustainable Economic Development Strategies*, Global Urban Development, Washington DC.

Nixon J., Cleveland J., Weiss M., and Victors A. (2011), *Prosperity in Paradise: Growing the Sustainable Economy in Sarasota County*, Sarasota County Government and US Department of Energy, Sarasota, FL.

O Sul (2016), "First charging station for electric cars is launched at Shopping Total", *O Sul*, Porto Alegre, October 20, 2016.

Oliveira B. (2019), "Urbanism: ZISPOA project wants to install first 100% sustainable parklet in Porto Alegre," *Jornal do Comércio*, Porto Alegre, April 2, 2019.

Peltz M. and Weiss M. (1984), “State and local government roles in industrial innovation”, *Journal of the American Planning Association*, 50(3): 270–279.

Penalver Aguila M. and Fazzano A (2004), *San Diego-Tijuana Region Metropolitan Economic Strategy*, Global Urban Development, Washington DC.

Pinto da Silva Filho L. C. (2020), “Some Remarks About the ZISPOA Trajectory and its Impact on Porto Alegre and Rio Grande do Sul”, presentation to *Inside ZISPOA: The Porto Alegre Sustainable Innovation Zone, 2015-2020*, Webinar, 21 August 2020, Global Urban Development, Porto Alegre.

Roe D. (1984), *Dynamos and Virgins*, Random House, New York.

Roland-Holst D. (2008), *Energy Efficiency, Innovation, and Job Creation in California*, Center for Energy, Resources, and Economic Sustainability, University of California, Berkeley.

Rosenfeld A. (2008), *Energy Efficiency: The first and most profitable way to delay Climate Change*, Oppenheim Lecture, UCLA Institute of the Environment, California Energy Commission, Sacramento.

Roso L. (2017), “Sweden's Minister of Education rides a bicycle through the streets of Porto Alegre", *Zero Hora*, Porto Alegre, November 5, 2017.

Sandred J. (2004), “Catching the green wave: Investment in environmental technology gaining momentum”, *SFGATE*, San Francisco, May 31, 2004.

São Paulo Housing and Urbanism (2011), *International Congress for Housing and Urban Development*, São Paulo City Government, June 29-30, 2011, Global Urban Development, Washington, DC.

Schneider M (2016), “Interview with Marc Weiss on Rio Grande do Sul as the most sustainable and innovative place in Latin America”, *Jornal do Comércio* (*GeraçãoE*), Porto Alegre, March 10, 2016.

Schwartz H. (2004), *Urban Renewal, Municipal Revitalization: The Case of Curitiba, Brazil*, Higher Education Publications; Falls Church, VA.

Scruggs G. (2014), "A post-industrial Brazilian neighborhood aims to be Latin America's Silicon Valley", *Next City*, Philadelphia, June 19, 2014.

Seymoar N. (2007), *Sustainable Urban Development in Canada*, report to the Mistra Foundation, Global Urban Development, Washington DC.

Shah J., Nixon J., and Weiss M. (2010), *Global Coal Transition and Cleantech Investment Initiative*, Carbon War Room, Climate Prosperity Alliance, and Global Urban Development, Washington, DC

Silicon Valley Climate Prosperity Council (2009), *Climate Prosperity: A Greenprint for Silicon Valley*, Joint Venture Silicon Valley Network, San Jose.

Skewes-Cox A. (1981), *Creating Jobs in Berkeley by Alternative Energy Strategies*, Institute of Urban and Regional Development, University of California, Berkeley.

Soh E. (2004), *Towards a Metropolitan Economic Strategy for Cape Town, South Africa*, Global Urban Development, Prague.

Talen A., Weiss M., and Sarkar S. (2001) “The Future of Microfinance in the United States: Research, Practice, and Policy Perspectives”, in Carr J. and Tong Z. (eds.), *Replicating Microfinance in the United States*, Woodrow Wilson Center Press, Washington, DC.

TenBrink S. (2004), *Trieste-Koper Cross-Border Cooperation and Metropolitan Economic Strategy,* Global Urban Development, Prague.

US Consulate General in Porto Alegre (2017), *Secondary Cities Project*, Global Urban Development, Porto Alegre.

US Department of Energy (2022), *Property Assessed Clean Energy Programs*, State and Local Solution Center, Office of Energy Efficiency and Renewable Energy, Washington, DC.

Vogel D. (2018), *California Greenin': How the Golden State Became an Environmental Leader,* Princeton University Press, Princeton.

Weiss M. (1978), *Pension Fund Investments: The Issue of Control*, Center for Economic Studies, Palo Alto. Reprinted in 1981 by the Conference on Alternative State and Local Policies, Washington, DC.

Weiss M. (1980), "Democratic Control of Investments" in Carnoy, M. and Shearer, D., *Economic Democracy: The Challenge of the 1980s*, M.E. Sharpe, White Plains, NY.

Weiss M. (1983*a*), "High technology industries and the future of employment", *Built Environment,* 9(1): 51–60. Reprinted in Hall P. and Markusen A. (eds.) (1985), *Silicon Landscapes,* Allen and Unwin, London.

Weiss M. (1983*b*), "Berkeley and the regional economy: the need for a new 'space' program", in Minkus D. and Duster T. (eds.) *Economic Development in Berkeley*, Institute for the Study of Social Change, University of California, Berkeley.

Weiss M. (1986), "State and local economic development policy: where to put your money", in *Annual Proceedings of the Institute on Planning and Zoning*, Bureau of Urban and Regional Planning Research, University of Illinois at Urbana-Champaign, pp. 35–48.

Weiss M. (1987), *The Rise of the Community Builders: The American Real Estate Industry and Urban Land Planning*, Columbia University Press, New York.

Weiss M. (1997), *Comeback Communities: The Revival of America's Cities*, US Department of Housing and Urban Development, Washington DC.

Weiss M. (2001*a*), "Metropolitan economic strategy: how urban regions innovate and prosper in the global marketplace", *Global Outlook: International Urban Research Monitor*, Washington, DC, 1(1): 8–12.

Weiss M. (2001*b*), *Productive Cities and Metropolitan Economic Strategy*, Theme Paper presented to the United Nations International Forum on Urban Poverty, Marrakech.

Weiss M. (2001*c*), *The Smart Growth Experience: Lessons from the US*, Global Urban Development, Washington, DC.

Weiss M. (2002*a*), *State Policy Approaches to Promote Metropolitan Economic Strategy*, Center for Best Practices, National Governors Association, Washington DC.

Weiss M. (2002*b*), *Report on Metropolitan Economic Strategy to the South African Cities Network*, South African Cities Network and US Agency for International Development, Cape Town.

Weiss M (2002*c*), *Strategic Economic Development: Lessons from Washington, DC*, Global Urban Development, Washington DC.

Weiss M. (2003*a*), *Report to the Strategic Metropolitan Plan of Barcelona: Metropolitan Regions are Dynamic Economic Engines of Global Prosperity and Quality of Life for Everyone*, PEMB, Barcelona.
Weiss M. (2003*b*), "Community development", in Potter J. (ed.), *Private Finance and Economic Development: City and Regional Investment*, Organization for Economic Cooperation and Development (OECD), Local Employment and Economic Development (LEED) Programme, Paris.
Weiss M. (2005), "Teamwork: why metropolitan economic strategy is the key to generating sustainable prosperity and quality of life for the world", *Global Urban Development Magazine*, 1(1): 1–11.
Weiss M. (2006*a*), "Metropolitan economic strategy: the key to prosperity", *Harvard College Economics Review*, 1(1): 25–27.
Weiss M. (2006*b*), "Leveraging Private Financing and Investment for Economic and Community Development", *Global Urban Development Magazine*, 2(1): 1-11.
Weiss M. (2007a), *Global Report to the Brookings Institution on National Government Policies to Promote Metropolitan Economic Strategy*, Blueprint for National Prosperity Project, Metropolitan Policy Program, Brookings Institution, Washington, DC.
Weiss M. (2007*b*), *Sustainable Urban Development in the US*, report to the Mistra Foundation, Global Urban Development, Washington, DC.
Weiss M. (2008*a*), *Report for the OECD and the Government of Wales on the NoMa (North of Massachusetts Avenue) Strategic Economic Development Initiative in Washington, DC*, Organization for Economic Cooperation and Development, Paris.
Weiss M. (2008*b*), "Reviving the Economy through Climate Prosperity," *Citiwire*, October 20, 2008.
Weiss M. (2015*a*), "Global Urban Development, Paralelo Vivo, and Sustainable Innovation Zones in Porto Alegre, Brazil", *World Urban Campaign Newsletter*, UN-Habitat, Nairobi, October 2015.
Weiss M. (2015*b*), Course Description for "Strategic Planning for a Sustainable Innovation Zone in Porto Alegre", October 20, 2015, Global Urban Development, Porto Alegre.
Weiss M. (2016), "Global Urban Development (GUD) in Brazil: the Porto Alegre Sustainable Innovation Zone (ZISPOA) and the Paralelo Vivo Sustainable Innovation Hub," *World Urban Campaign Newsletter*, UN-Habitat, Nairobi, September 2016.
Weiss M. (2017*a*), "Global Urban Development: The Porto Alegre Sustainable Innovation Zone (ZISPOA) – Two years of accomplishment and progress", *World Urban Campaign Newsletter*, UN-Habitat, Nairobi, October 2017.
Weiss M. (2017*b*), "Porto Alegre Urban Thinkers Campus: Sustainable innovation, citizen empowerment, entrepreneurial engagement, and strategic collaboration", *World Urban Campaign Newsletter*, UN-Habitat, Nairobi, November 2017.
Weiss M. (2018*a*), "Porto Alegre Urban Thinkers Campus: Sustainable Innovation Zones (ZIS) as catalysts for the New Urban Agenda, Sustainable Development Goals, and Paris Climate Agreement through citizen empowerment,

entrepreneurial engagement, and strategic collaboration", *World Urban Campaign Newsletter*, UN-Habitat, Nairobi, January 2018.
Weiss M. (2018*b*), "Global Urban Development (GUD) in Brazil: The Porto Alegre Sustainable Innovation Zone (ZISPOA) and Urban Thinkers Campus", *World Urban Campaign Newsletter*, UN-Habitat, Nairobi, March 2018.
Weiss M. (2019), *The Porto Alegre Sustainable Innovation Zone (ZISPOA)*, Global Urban Development, Porto Alegre.
Weiss M. (2020*a*), "Global Urban Development (GUD) in Brazil: Porto Alegre Urban Thinkers Campus in ZISPOA highlights progress of Sustainable Innovation Zones", *World Urban Campaign Newsletter*, UN-Habitat, Nairobi, February 2020.
Weiss M. (2020*b*), "The Porto Alegre Sustainable Innovation Zone (ZISPOA) and Participatory Community Transformation", Global Urban Development, Porto Alegre.
Weiss M. (2022*a*), "The Porto Alegre Sustainable Innovation (ZISPOA) and Participatory Community Transformation", in Coelho de Souza G., Marzulo E., and Meirelles M. (eds.), *Transformações Comunitárias Participativas*, CirKula, Porto Alegre.
Weiss M. (2022*b*), *GUD's Sustainable Innovation Zones Global Initiative*, Global Urban Development, Washington, DC.
Weiss M. (2022*c*), "Swedish Support for and Collaboration with ZISPOA", Presentation to *Seminar on Local-Level Integration and Systems Change for Urban Sustainability and Climate Action*, House of Sweden, May 10, 2022, National Academies of Sciences, Engineering, and Medicine (NASEM), Viable Cities, UN-Habitat, and Global Urban Development, Washington, DC.
Weiss M. and Markusen A. (1981), *Economic Development: An Implementation Strategy for the City of Berkeley*, Institute of Urban and Regional Development, University of California, Berkeley.
Weiss M. and Metzger J. (1987*a*), "Community planning for technological development: a new bargaining process", in Goldberg S. and Strain C. (eds.), *Technological Change and the Transformation of America*, Southern Illinois University Press, Carbondale, IL.
Weiss M. and Metzger J. (1987*b*), "Technology Development, Neighborhood Planning, and Negotiated Partnerships: The Case of Pittsburgh's Oakland Neighborhood", *Journal of the American Planning Association*, 53(4) 469-477.
Weiss M. and Metzger J. (1988), *Neighborhood Lending Agreements: Negotiating and Financing Community Development*, Lincoln Institute of Land Policy, Cambridge, MA.
Weiss M. and Weinstein M. (1997), *The Baltimore, Maryland Metropolitan Region: A Community Views its Future – Civic Leaders' Strategies for Economic Prosperity and Quality of Life in the 21st Century*, A HUD Report on Metropolitan Economic Strategy, US Department of Housing and Urban Development, Washington, DC.
Weiss M. and Rosan D. (1999), *Baltimore Economic Growth Strategy*, Baltimore City Government, Baltimore Development Corporation, and Center for National

Policy, Baltimore and Washington, DC.
Weiss M. and Fazzano A. (2004), *Metropolitan Economic Strategy Report for the Hampton Roads Partnership, Norfolk, Virginia*, Global Urban Development, Washington DC.
Weiss M. and Nixon J. (2011), *The Global Future of Green Capitalism*, Energy and Climate Partnership of the Americas, Global Urban Development, Washington DC.
Weiss M., Sedmak-Weiss N., and Bromley I. (2012), *Advanced Manufacturing and Sustainable Innovation: The Third Wave of Industrial and Urban Economic Growth for Minas Gerais*, report to Federation of Industries of the State of Minas Gerais (FIEMG), Global Urban Development, Washington, DC.
Weiss M., Sedmak-Weiss N., and Rodriguez E. (2012), *Local and Regional Economic Development Opportunities Related to the Implementation of the Sao Jose do Norte EBR Shipyard in Rio Grande do Sul*, report to Federation of Industries of the State of Rio Grande do Sul (FIERGS), and the Rio Grande do Sul Development and Investment Promotion Agency (AGDI), Global Urban Development, Washington, DC.
Weiss M. and Schoenberger E. (2015), "Peter Hall and the Western Urban and Regional Collective at the University of California, Berkeley", *Built Environment*, 41(1): 63-77.
Weiss M., Sedmak-Weiss N., Yamashita Rodriguez E. (2015), *21st Century Leapfrog Economic Strategy: Rio Grande do Sul Becomes the Most Sustainable and Innovative Place in Latin America by 2030*, report to the Rio Grande do Sul State Government and the World Bank, Global Urban Development, Washington, DC.
Weiss M. and Nascimento L. (2016), "The Rio Grande do Sul Leapfrog Economic Strategy and the Porto Alegre Sustainable Innovation Zone (ZISPOA)", United Nations Development Programme (UNDP), International Policy Center for Inclusive Growth, *Policy in Focus*, 13(3): 42-45.
Yang G. (2002), *Shanghai's Economic Development: Its Opportunities and Challenges in the 21st Century – GUD Metropolitan Economic Strategy Report*, Global Urban Development, Washington DC.
Yunus M. (2005), "Eliminating Poverty Through Market-Based Social Entrepreneurship", *Global Urban Development Magazine*, 1(1): 1–10.
Zdenek R. and Walsh D. (2017), *Navigating Community Development: Harnessing Comparative Advantages to Create Strategic Partnerships*, Palgrave Macmillan, New York.
Zero Hora (2016), "Good ideas in Sustainability Awards selects 12 winners", *Zero Hora*, Porto Alegre, June 30, 2016.
Zinn L. (2011), *Presentation on San Antonio's Mission Verde*, ECPA Conference on Planning for Sustainable Economic Development Across the Americas, Curitiba, Brazil, June 7, 2011, Global Urban Development, Washington, DC.
Zukin S. (2020), *The Innovation Complex: Cities, Tech, and the New Economy*, Oxford University Press, New York.