

Policy in Focus

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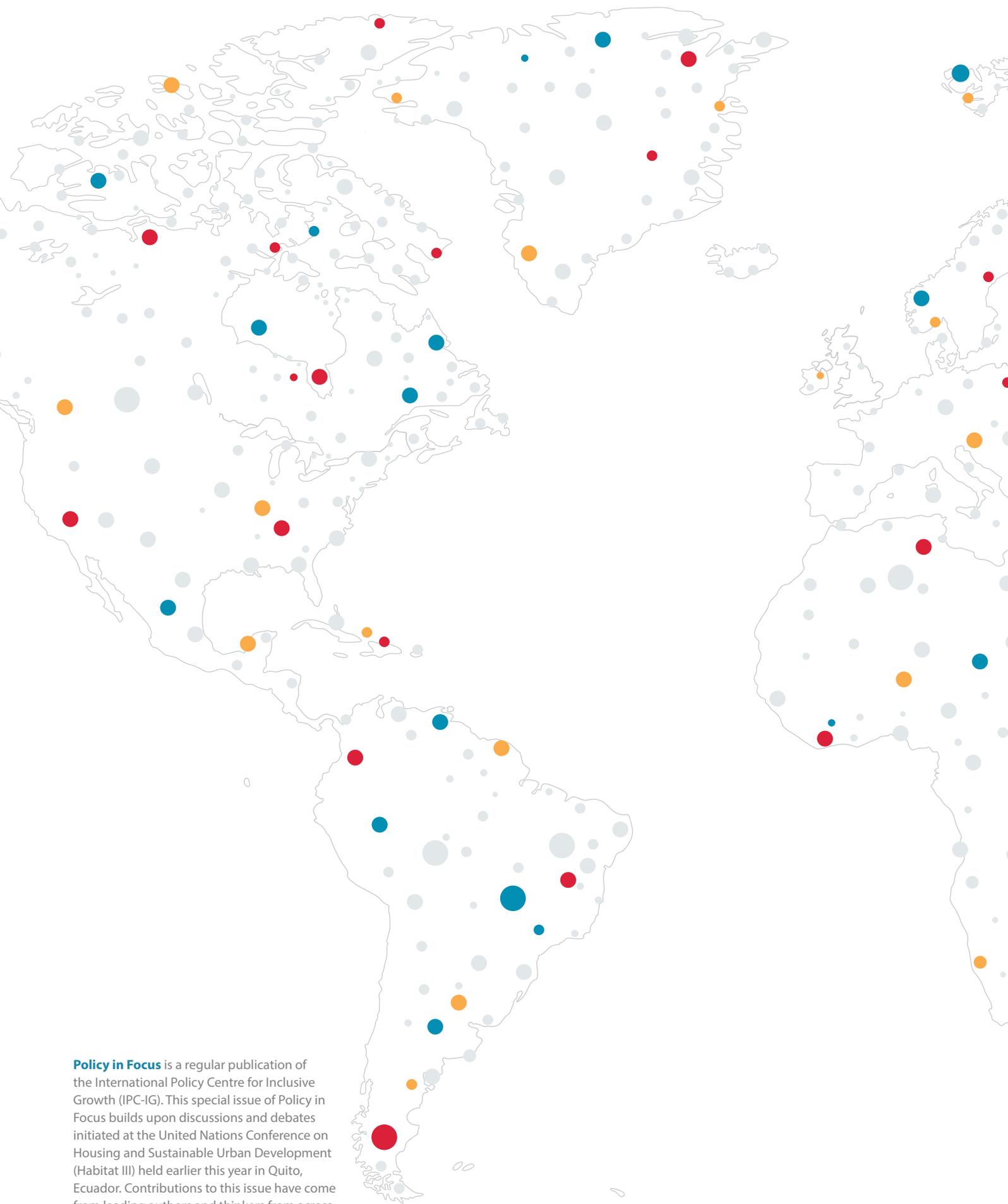
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A new urban paradigm:
pathways to sustainable development



Empowered lives.
Resilient nations.



Policy in Focus is a regular publication of the International Policy Centre for Inclusive Growth (IPC-IG). This special issue of *Policy in Focus* builds upon discussions and debates initiated at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) held earlier this year in Quito, Ecuador. Contributions to this issue have come from leading authors and thinkers from across the globe addressing different aspects of sustainable urban development, innovations, and metropolisation from several different local and regional perspectives.



The International Policy Centre for Inclusive Growth (IPC-IG) is a partnership between the United Nations and the Government of Brazil to promote South–South learning on social policies. The Centre specialises in research-based policy recommendations to foster the reduction of poverty and inequality as well as promote inclusive growth. The IPC-IG is linked to the United Nations Development Programme (UNDP) in Brazil, the Ministry of Planning, Budget and Management of Brazil (MPOG) and the Institute for Applied Economic Research (Ipea) of the Government of Brazil.

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Editor's note: A new urban age has bestowed cities with environmental, social, economic, political and even diplomatic clout, pushing them into new positions of power as agents and locations of change for solutions to not only local challenges, as sites where positive social economic development outcomes may be scaled, but also to increasingly nebulous global problems.

This special issue of Policy in Focus sheds light on new ways of thinking about our world, and contributes to a new body of knowledge to better equip policymakers and academics to face the challenges and seize the opportunities of an era of shifting global systems and an emerging new urban paradigm.

On behalf of the UNDP IPC-IG, I would like to express our gratitude to UN-Habitat for their support in the development of this special issue. In particular, we would like to extend a special thanks to all of the authors for their generous and insightful contributions, without which this special issue simply would not have been possible.

Editorial

Humankind has entered a new 'urban era', where the majority of the population lives in urban areas. It is, therefore, not surprising that sustainable urban development has become an integral pillar of the 2030 Agenda for Sustainable Development, including the adoption of a specific goal dedicated to cities.

An analysis of the state of the world's urbanisation over the last 20 years by UN-Habitat, the lead United Nations agency on urban development, reveals that the current trends are not only not sustainable, but also very damaging for the quality of life of future urban dwellers and for the planet as a whole.

Our cities are increasingly less planned and less dense, consuming 78 per cent of the world's energy, producing more than half of all greenhouse gas emissions and taking up much more land than needed, with unaffordable housing. The consequences of these trends are dramatic.

With the adoption of the New Urban Agenda at Habitat III, the debate over the positive and transformative outcomes of well-planned urbanisation has led us to challenge this paradigm. This paradigm shift is crucial, as it reaps the benefits of good urbanisation in seeking solutions to many of the problems the world is facing today.

If we get urban development right, cities can be centres for creating jobs, promoting social inclusion and protecting local ecosystems. Cities, when planned and managed well, are engines of national economic growth, social prosperity and environmental sustainability.

To that end, the New Urban Agenda offers five strategies that will help countries to address the current urbanisation challenges.

First, developing national urban policies that establish mechanisms of coordination between central and local governments, preventing the duplication of services and costs: The New Urban Agenda calls for new and reinforced cooperation between central and local governments. The role of central governments in the quality of urbanisation is very relevant. National urban policies amalgamate the dispersed energy and potential of urban centres within a national system or hierarchy of cities and towns. They help to coordinate the work of different sectors and tiers of government, establish incentives for more sustainable practices and provide a basis for the allocation of resources.

Second, ensuring proper urban legislation: Urbanisation should be based on the rule of law. Robust legislation and its equitable implementation shape operational principles and stabilise organisational structures, fostering institutional and social relationships that underpin the process of urbanisation.

Third, supporting urban planning and design: The capacity of urbanisation to generate prosperity is closely linked to the physical design. Good planning can change a city's internal structure, form and functionality, contributing to a more compact, integrated and connected layout and leading to sustainable solutions. Densification, social diversity, climate change mitigation and adaptation, the sustainable use of natural resources, and adequate public spaces, including vibrant streets, are all results of good urban planning and design.

Fourth, financing urbanisation: Urbanisation is one of the few social and economic phenomena in which public investment generates private value. To create employment, urban areas and regions require strong economic growth strategies that take into account regeneration, cluster development and industrial zones. Strengthening municipal finance comprises realigning fiscal authority, responsibility and revenue sharing—i.e. achieving the right balance between different levels of government, designing new financial mechanisms and exploring new sources of capital, improving systems of revenue collection and improving budget management and transparency.

Finally, the local implementation of the New Urban Agenda: In expanding a city, we must maintain planned city extensions and planned city infills. This results in lowered costs of basic urban services, urban energy use and greenhouse gas emissions.

I would like to thank the International Policy Centre for Inclusive Growth (IPC-IG) for launching this special edition of *Policy in Focus*, continuing the discussions facilitated by Habitat III and enriching the current debate towards a new urban paradigm.

**by Dr. Joan Clos, Secretary-General
of Habitat III/Executive Director of UN-Habitat**

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The Rio Grande do Sul leapfrog economic strategy and the Porto Alegre Sustainable Innovation Zone (ZISPOA)

by Marc A. Weiss¹
and Luis Felipe Nascimento²

The Porto Alegre Sustainable Innovation Zone (*Zona de Inovação Sustentável de Porto Alegre*—ZISPOA), located in the Independência and Floresta neighbourhoods of the Brazilian city of Porto Alegre (Weiss 2016),³ represents the first major step towards the implementation of Global Urban Development's (GUD) 2015 World Bank-funded Leapfrog Economic Strategy (LES) for the state of Rio Grande do Sul (RS) to become the most sustainable and innovative place in Latin America by 2030 (Weiss et al. 2015). Both the LES and the development of Sustainable Innovation Zones, starting with ZISPOA, offer excellent opportunities for the city and the state to successfully achieve both the United Nations Sustainable Development Goals (SDGs) and the New Urban Agenda, and can perhaps highlight ways in which other regions may be able to do so as well.

Sustainable Innovation Zones in Rio Grande do Sul

The focus on sustainable innovation and inclusive prosperity is vital for the success of the RS LES. The future of the world will be about finding ways for billions of people to live and thrive in peace with each other and with nature. In the 21st century, people, places and organisations can literally get richer by becoming greener—earning and saving more money by conserving, renewing and reusing resources much more efficiently. In the future, businesses, jobs and incomes will grow through the 'four greens': green savings, green opportunities, green talent and green places (ibid., 46–48).

Many of the major technological advances of the coming decades will involve enabling people to enjoy economic prosperity and quality of life in ways that conserve and reuse natural resources and protect and enhance global ecosystems. The places in the world that 'leapfrog' into such a future, as some places are already

doing, will have an economic competitive advantage over the rest of the world. The first places among emerging economies in developing countries that can accomplish such technological breakthroughs will leapfrog into the front ranks of global competitiveness.

This will happen for two main reasons. First, because such successful places will have expertise and experience, reflected in their products and services, of enormous value to the rest of the world. Second, because many global resources will flow to such places from elsewhere: talent, technologies, investors, entrepreneurs, students, scholars, traders, tourists, developers, donors and much more. The world has a huge interest in supporting places committed to sustainable innovation and inclusive prosperity, and this growing interest and the global resources that come with it will increase exponentially during the coming decade.

Sustainable Innovation Zones are a centrepiece of the RS LES (ibid., 132–156). These many special areas in municipalities throughout the state will be among the leading centres for research and development of new innovations and technologies; for promoting entrepreneurial start-ups and business incubation and acceleration; for experimenting with state-of-the-art methods for improving sustainability and resource efficiency in business and daily life; for enhancing creativity and collaboration; for reducing burdensome rules and regulations and creating a more supportive business-friendly environment; for establishing public–private collaboration in strategic investments and participatory community management; and much more.

Current and future Sustainable Innovation Zones in RS will be located in mixed-use urban communities near colleges and universities, technology parks and technology business incubators, with commerce, housing and other key amenities and services. They hope to

serve as magnets for international talent and experiments in 21st century technology.

The RS Leapfrog Economic Strategy

The state of RS has been an economic leader in Brazil for a long time. In the 20th century it became one of the first states in the country to successfully industrialise and urbanise, and today it remains the third biggest industrial economy among Brazilian states. More than a dozen RS industries are either the largest or second largest among similar industries in other states in Brazil (ibid., 62).

However, RS is facing considerable economic challenges in the coming decades: relatively slow economic growth, a decreasing working-age population, modest productivity improvements, increasing global competition, and insufficient resources to upgrade infrastructure and education, among others.

An alternative to this projected slow growth in the future is one of dynamic, high growth characterised by broad-based employment and income gains. A way forward for RS to achieve a new level of prosperity and quality of life for families and communities and accomplish such a high-growth future is to become the most sustainable and innovative place in Latin America by 2030. This ambitious plan builds on the GUD approach, referred to as the 21st century LES, designed to accelerate into a more technologically advanced future (ibid., 53–158).⁴

The objective of the LES is to dramatically improve the standard of living, enhancing livelihoods and well-being for families and communities throughout the state. This goal will be achieved through much more dynamic, rapid, broad-based and long-term economic growth driven by sustainable innovation and inclusive prosperity.

Moving forward, the LES hopes to grow jobs and incomes for many people,



Photo: Felipe Valduga. Air view of Porto Alegre, Brazil, 2015 <<https://goo.gl/uwU27V>>.

“The future of the world will be about finding ways for billions of people to live and thrive in peace with each other and with nature.”

expanding public and private resources to enable substantial new investments in cleaner water, more effective sanitation, better housing and many other vital necessities of infrastructure and transportation, health and education, safety and security, stores and services, for all income levels statewide.

The proposed RS LES directly addresses five key economic challenges/objectives over the next 15 years:

- doubling the economic growth rate;
- dramatically increasing productivity by upgrading skills and technologies;
- expanding the working-age population by retaining and attracting a more educated and talented workforce;
- strengthening global competitiveness by producing technologically advanced and innovative goods and services that compete more effectively with imports and are in greater demand as exports; and
- improving infrastructure and education by attracting substantial international and private-sector investment and by enhancing resource efficiency.

One of the best ways to accelerate economic growth in RS is to develop a highly productive workforce, both by enhancing education, skills training and advanced technologies for the state's

residents and involving them more actively in dynamic economic activities, as well as by attracting and retaining energetic entrepreneurs and professionals from other states and from abroad.

The LES strives to maximise economic contributions by fully utilising individual talents and expertise through productive employment and competitive business opportunities, and by ensuring that such contributions are rewarded with rising incomes and asset ownership. The main engine of economic growth will continue to be the massive food production value chain, representing nearly one third of the state's economy in terms of agriculture, livestock, food processing, marketing, distribution and the many closely related business activities in manufacturing and services. Because global food demand is expected to increase by as much as 50 per cent by 2030, according to the United Nations, the food production value chain will have even better opportunities to be 'the rising tide that lifts all boats' in RS.

To become a 21st century leader in sustainable innovation and inclusive prosperity, developing, producing and marketing a very advanced generation of precision production, smart machines and digital technology, comprehensively applied to agriculture, industry and services, will be needed. This is a central tenet of the LES approach which builds on existing RS assets and strengths in metal mechanics and electronics, including automation and control, agricultural machinery and equipment, transportation equipment,

motor vehicles and auto parts. It focuses on higher productivity through new production methods such as precision agriculture, where some RS companies such as Stara are already becoming international leaders, and it will enhance many other key RS industry drivers, including renewable energy and clean technologies; sustainable innovation in advanced manufacturing, precision engineering, new materials, biotechnology, chemicals and polymers; and fashion, design and a wide range of related creative and cultural industries.

The emphasis in the LES on digital technology puts RS businesses ahead of the curve for the innovations of tomorrow, including both hardware and software components of goods, services and production processes. RS can become more globally competitive in digital software by educating, attracting and retaining high-quality talent, especially because of its strong focus on sustainable innovation and inclusive prosperity. A new global influx of talent can facilitate faster economic and technological progress even before major improvements are completed in modern sustainable transportation mobility, efficient renewable energy and broadband telecommunications infrastructure. This strategy maximises existing strengths of RS, even as it builds towards much greater capacity to develop and use advanced technologies by 2030.

The evolution of ZISPOA since 2015
ZISPOA and the *Paralelo Vivo* Sustainable Innovation Hub have made extensive progress since September 2015, involving

dozens of start-ups and hundreds of active participants and generating a solar-powered electric car-charging station, a community garden and composting centre, solar 'trees', a mapping of renewable resource capacities, a neighbourhood festival and many other achievements.

A major focus of ZISPOA and *Paralelo Vivo* is on fostering start-ups and business growth among young university-educated entrepreneurs, technicians, students and social activists. This rising generation of young adults in their 20s and 30s is a vital resource for achieving a successful urban transformation based on sustainable innovation and inclusive prosperity.⁵

The *Paralelo Vivo* Sustainable Innovation Hub is the first start-up hub, co-working and maker space⁶ and innovation ecosystem in Latin America focused mainly on promoting sustainable entrepreneurship and green businesses, currently with 36 member companies and organisations.⁷

Six key elements

ZISPOA combines six key elements:

- innovation and technology;
- entrepreneurship and start-ups;
- sustainability and resource efficiency;
- creativity and collaboration;
- participatory community management; and
- a business-friendly environment.

Over the past year, working groups were organised around these six key elements, and hundreds of people have collaborated to take action and produce results on a wide variety of initiatives. These include promoting 'solar trees', building a community garden and composting centre (*Espaço Floresta*) at a neighbourhood recycling facility, hosting weekly 'Zistalks' by local entrepreneurs/activists/experts, organising monthly Sustainable Connections seminars with Net Impact, mapping and surveying ZISPOA for renewable energy and resource recycling capacity, participating in an RS State Government Commission supporting the SDGs and much more.⁸

Early recognition and success

In June 2016 both ZISPOA and *Paralelo Vivo* won 'Good Ideas in Sustainability' awards from *Virada Sustentável* and *Fundação Gaia* in a major regional competition among more than 150 contestants. In addition, two ZISPOA start-ups, *Re-ciclo* and *Gênese Social*, also won awards, and four other ZISPOA start-ups were finalists: *Cesta Feira*, *Horteria*, *MVM Technologies* and *weBike* (Zero Hora 2016; *Virada Sustentável* 2016).

In December 2015, ZISPOA was selected by the Government of Sweden, the Swedish Institute and Swedish Incubators and Science Parks to participate in the Smart Living Challenge global network, starting with an international webinar in April 2016 about 'Sharing for Sustainable Mobility', featuring international technical experts mentoring ZISPOA start-ups such as MVM for electric car sharing, weBike for bike sharing, and Easybox for sharing garages for bikes and cars.

MVM recently developed Porto Alegre's first solar-powered charging station (SiVi) for electric car sharing in ZISPOA, with assistance from local firms, start-ups and students from the Federal University of Rio Grande do Sul (UFRGS). In October 2016, as part of Sweden–Brazil Innovation Week, ZISPOA inaugurated the new charging station at a well-attended ceremony with Sweden's Ambassador to Brazil Per-Arne Hjelmhorn, Porto Alegre Mayor José Fortunati, and other Porto Alegre leaders (*O Sul* 2016). ZISPOA also helped organise Sustainable Cities seminars and lectures, in addition to other activities.

Collaborative partnerships

Faculty and students from various programmes at UFRGS and other regional universities, including PUCRS, Unisinos and UniRitter, plus numerous start-ups from university-based technology parks and business incubators such as Hestia and Tecnopuc, along with AIESEC and several UFRGS student junior enterprise groups, are participating in ZISPOA activities. Currently several UFRGS professors are mentoring ZISPOA start-ups. This convening capacity is significant and can help lead to collaborative innovation across organisations and sectors. Currently ZISPOA is engaging in extensive outreach to students and faculty at universities in metropolitan Porto Alegre.⁹

Other examples of collaborative opportunities for sustainable innovation include ZISPOA and local partners such as Porto Alegre Resiliente, *3C Arquiteto e Urbanismo*, UFRGS, *Natureza Digital* and *Casa das Cidades* working with the international GeoSUMR Partnership, including Ecocity Builders, Esri, AAG, GUD and the US State Department, on sustainable urban geoinformation and geodesign with ecocitizen mapping and open data. Also, ZISPOA is developing other international partnerships in Canada, Germany, India, Singapore, Spain, the UK and the USA, and is working with the United Nations Development Programme (UNDP), UN-Habitat and the UN Commission on Science and Technology for Development.



Photo: Betina Carcuchinski/PMPA. Bike sharing is incentivised through ZISPOA, Porto Alegre, Brazil, 2016 <<https://goo.gl/UFpteq>>.

Future goals and activities

Currently ZISPOA is focused on becoming the most sustainable and innovative site in Latin America by December 2020, especially on becoming the: 1) most solar-powered; 2) most energy-efficient; 3) most digitally connected; 4) most renewable technology-friendly; and 5) most bike-friendly.

Sustainable Innovation Hubs and Zones are set to spread to other cities in RS such as Canoas, Caxias do Sul, Pelotas and Santa Maria. Similar Sustainable Innovation Hubs and Zones are expected to begin organising throughout Brazil and Latin America, including São Paulo, Panama City and other major urban centres.

Conclusion

Thus, despite the recent economic and political challenges that Brazil is facing nationally, the localised approach to regional economic development—GUD's Metropolitan Economic Strategy, Sustainable Innovation and Inclusive Prosperity framework (Weiss et al. 2015, 26–52)—currently being applied in Porto Alegre with ZISPOA, and soon to be scaled up with Sustainable Innovation Zones throughout the state of Rio Grande do Sul, may provide new insights about how to generate a specific kind of highly sustainable, innovative and inclusive economic growth that strongly supports achieving the SDGs by 2030. Hopefully this Brazilian experience can positively inform and benefit other cities and regions in emerging economies throughout the world. ●

Elstrodt, Heinz-Peter, James Manyika, Jaana Remes, Patricia Ellen, and Cesar Martins. 2014. *Connecting Brazil to the World: A Path to Inclusive Growth*. San Francisco, CA: McKinsey Global Institute. <<http://www.mckinsey.com/global-themes/americas/brazils-path-to-inclusive-growth>>. Accessed 21 November 2016.

O Sul. 2016. "Primeiro ponto de recarga para carros elétricos é lançado no Shopping Total", *O Sul*, 20 October. <<http://www.osul.com.br/primeiro-ponto-de-recarga-para-carros-eletricos-e-lancado-no-shopping-total/>>. Accessed 21 November 2016.

Revista Bens & Serviços. 2016. "A Economia da Sustentabilidade: Entrevista Marc Weiss." *Revista Bens & Serviços* 134: 19–21. <https://issuu.com/revistabensservicos/docs/revista_bens_servi__os_134>. Accessed 21 November 2016.

Virada Sustentável. 2016. "Prêmio Boas Ideias de Sustentabilidade." Virada Sustentável website. <<http://viradasustentavel.com/poa/premio-boas-ideias-de-sustentabilidade/>>. Accessed 21 November 2016.

Weiss, Marc A. 2016. "Global Urban Development (GUD) in Brazil: The Porto Alegre Sustainable Innovation Zone and the Paralelo Vivo Sustainable Innovation Hub." *World Urban Campaign* website. <<http://www.worldurbancampaign.org/global-urban-development-gud-porto-alegre-sustainable-innovation-zone-zispoa-paralelo-vivo>>. Accessed 21 November 2016.

Weiss, Marc A., Nancy J. Sedmak-Weiss, and Elaine Yamashita Rodriguez. 2015. *21st Century Leapfrog Economic Strategy: Rio Grande do Sul becomes the most Sustainable and Innovative Place in Latin America by 2030*. Porto Alegre: Global Urban Development. <http://www.globalurban.org/2015_RS_LEAPFROG_ECONOMIC_STRATEGY.pdf>. Accessed 21 November 2016.

Zero Hora. 2016. "Prêmio Boas Ideias de Sustentabilidade elege 12 vencedores." Zero Hora website, 30 June. <<http://zh.clicrbs.com.br/rs/vida-e-estilo/noticia/2016/06/premio-boas-ideias-de-sustentabilidade-elege-12-vencedores-6285836.html>>. Accessed 21 November 2016.

1. Global Urban Development (GUD).
2. Federal University of Rio Grande do Sul (UFRGS).
3. Part of ZISPOA is located in Porto Alegre's historic 4th District.
4. See also Elstrodt, Manyika, Remes, Ellen, and Martins (2014).
5. Over the past year, GUD has worked with ZISPOA start-up *Pulsar* on the Entrepreneurship Challenge for more than 250 students at the UFRGS Engineering School, and collaborated with Pulsar to teach two ZISPOA strategic action courses at *Paralelo Vivo*, and two ZISPOA Next Citizens courses at *Paralelo Vivo* and other ZISPOA collaborative houses: Casa Cultural Tony Petzhold, CC100, Galpão Makers, Marquise 51 Hub Criativo and Vila Flores. A total of over 100 students participated in these courses. In November–December 2016 GUD is offering a new ZISPOA 2020 Vision and Strategy course.
6. Including Ambientalle, AtraiA, AQP Brasil, BAZ, Biciponto, *Cesta Feira*, *ChuChu*, Construert, *Corpo com Equilíbrio*, *Cria*, *Florescer*, *Gênese Social*, GUD, Green is Great, Hidrocicle, Horteria, IGS, INSPE Legado, ME, Net Impact, NutriZero, Orkestra, *Pulsar*, Plancta, Purus, *Re-ciclo*, *Reserva*, SendaViva, Shieldmaiden, weBike, UPSS, Vila Velô, and Young Energy.
7. 'Maker spaces' are shared facilities, machines and equipment for technical, mechanical and construction work by start-ups and other businesses.
8. Other initiatives include: creating a business-friendly website <www.zispoa.info> and an event-oriented Facebook page <www.facebook.com/zispoa>, hosting monthly 'Green Drinks' networking events for sustainable entrepreneurs, organising monthly ZISPOA stakeholder meetings with Pulsar to support and facilitate strategic action initiatives and group projects, developing the *Miudinho* sustainability blog by UPSS, engaging in visioning with UFRGS students from Professor Julio van der Linden's Design course and creating a TEDx Start-up Marathon with the UFRGS Engineering School.
9. Through a project called ZUNI (ZISPOA *nas Universidades*) that recently won the annual PSJúnior "Pitch Your Business" startup challenge.

“ A major focus of ZISPOA and Paralelo Vivo is on fostering start-ups and business growth among young university-educated entrepreneurs, technicians, students and social activists.