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Metropolitan Economic Strategy and Sustainable Economic Development in Brazil

Sustainable Innovation: The Third Wave of Economic Growth in Minas Gerais

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The logo for FIEMG (Federation of Industries of Minas Gerais) is displayed in a red rectangular box with white text. The letters 'FIEMG' are in a bold, sans-serif font. The background of the slide features a large, stylized red arrow pointing upwards and to the right, set against a light gray background with abstract white and gray shapes.

FIEMG SYSTEM'S FOCUS

MARKET

TECHNOLOGY

SUSTAINABILITY

COMPETITIVENESS



MINAS GERAIS

Territorial area: 586,521 Km² (bigger than France, Sweden, Spain or even Japan)

Population: approximately 20 million inhabitants

Economy is equivalent to countries like Denmark, Norway, and Chile.

Accounts for 17.74% of the electric energy produced in Brazil

The most extensive highway and railway transportation networks in Brazil

The largest producer of iron ore, coffee, milk, and dairy products

The second largest producer of automobiles in Brazil.

Other key industries: metal-mechanics, electric-electronics, footwear, apparel, thread and fabrics, food and beverages, furniture, refractory and plastics, magnesium, silicon, and gold.

Solid tradition in agribusiness

Excellent climate, rich soil, and vast water resources




FIEMG System

The Federation of Industries of the State of Minas Gerais (FIEMG) contributes to the better inclusion of the state's industries into the internationalization process, aimed at promoting sustained development, defense of national interests, and increased profits with a competitive edge.

The FIEMG System works so that the industry of Minas Gerais can become increasingly more competitive, innovative, and sustainable, thereby capable of generating new business, wealth and development .



NUMBER OF ENTERPRISES / JOBS / SIZE - MG (criteria IBGE)

Industries/jobs	Industries		Jobs	
	Number	(%)	Number	(%)
0 job	67.817	52,3	-----	----
Micro (1 a 9 jobs)	44.074	34,0	177.810	11,8
Small (10 a 49 jobs)	13.906	10,7	286.350	22,8
 Medium (50 a 249 jobs)	3.184	2,5	312.265	24,9
Big (more than 250 jobs)	678	0,5	509.731	40,6
Total Amount of Micro and Small	125.797	97,0	434.160	34,6
Total amount of Medium and Big	3.862	3,0	821.966	65,4
Total	129.659	100%	1.256.126	100%

The background features a solid red color with abstract, layered, wavy shapes in a darker shade of red. On the left side, a prominent dark red arrow curves upwards and to the right. On the right side, there are more complex, layered wavy shapes that resemble a stylized 'S' or a series of overlapping curves.

THE FIRST WAVE: INDUSTRIALIZATION AND URBANIZATION

THE FIRST WAVE INDUSTRIALIZATION AND URBANIZATION

While Minas Gerais has been steadily following a path of industrialization and urbanization throughout the 20th century, the most important period of modern growth and transformation began in the 1940s and 1950s, during the time that one of our greatest political leaders, Juscelino Kubitschek, served first as Mayor of Belo Horizonte, then as Governor of Minas Gerais, and finally as President of Brazil. Though the former JK is best known internationally for spearheading the efforts to build Brasilia, “mineiros” remember him for his leadership in accelerating industrial and urban development in Minas Gerais. Key strategic actions included creating a major energy company, CEMIG, to generate and distribute high volume, low-cost, hydropower-based electricity, and establishing the Development Bank of Minas Gerais, to provide capital for attracting and expanding manufacturing industries.

THE FIRST WAVE INDUSTRIALIZATION AND URBANIZATION

During this First Wave, Minas Gerais made many other strategic public and private investments, including:

A transportation infrastructure of major roads and highways

Freight rail system for transporting iron ore and other minerals that helped foster a local iron and steel industry.

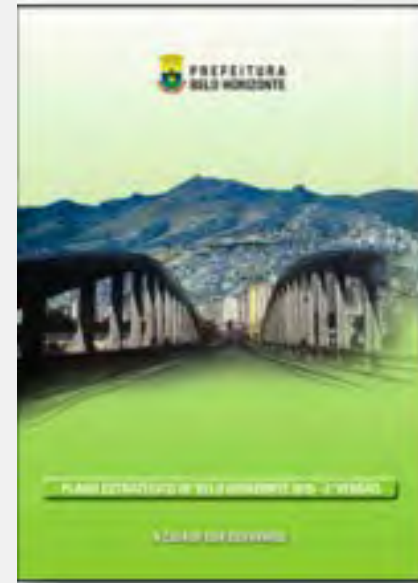
Developing Belo Horizonte as a modern city and metropolitan region;

The pioneering Cidade Industrial, attracting manufacturing to the region

An advanced higher education system, such as the School of Mines and the Faculty of Economic Science.

Attracting a major Fiat assembly plant

Attracting several multinational steel producers



THE FIRST WAVE INDUSTRIALIZATION AND URBANIZATION

There was similar growth in cement, chemicals, food and beverage processing, clothing and textiles, leather goods and footwear, wood and metal furniture, electrical and mechanical equipment, and other manufactured products. We invested in R&D that significantly improved the productivity of agriculture and mining. We also invested in skills training and workforce development to help support industry expansion.

Even with the various successes in the growth of businesses, jobs, and incomes during the First Wave, there also were many missed opportunities. We were still purchasing much of the technology and importing most of the capital goods from other countries.

We did not have a full cycle of companies operating effectively at every stage of the value chain, from technology research and development all the way to mass production.

Our private sector was lacking in many dynamic and fast-growing middle-sized firms. Instead we had few big corporations and a large number of very small enterprises that needed investment and support to grow.



**THE SECOND WAVE:
RISING INCOMES AND GROWING CONSUMER DEMAND**

THE SECOND WAVE: RISING INCOMES AND GROWING CONSUMER DEMAND

This brought on the Second Wave of the past decade, when Brazil has experienced major employment and income growth. An export-led boom has increased overall incomes, plus various federal government initiatives have helped to substantially raise the standard of living for lower income families. Such dramatic change has resulted in rising consumer spending for a growing range of products, including locally produced goods and services, further contributing to business and employment expansion. Real average income in the Belo Horizonte metropolitan region rose by 46 percent from 2006 through 2010. As a powerful symbol of this Second Wave boost in disposable income and consumer demand, Belo Horizonte recently opened Boulevard Shopping, a thriving multi-level retail downtown.



FIEMG

THE SECOND WAVE: RISING INCOMES AND GROWING CONSUMER DEMAND

However, the bulk of this income growth was fueled by exporting iron ore, soya, and other resources and crops to Asia, Europe, and elsewhere. Exports from Minas Gerais peaked in 2010 and 2011, and recently declining demand highlights the urgent need to reinvest local revenues and move beyond exporting commodities to exporting innovative and sustainable advanced technology products, both to other states in Brazil, and to many developed and developing countries.



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**THE THIRD WAVE:
SUSTAINABLE INNOVATION**

THE THIRD WAVE: SUSTAINABLE INNOVATION

It is now time for Minas Gerais to become a producer of innovative technologies.

For the next generation and beyond, our main focus must be on promoting **Sustainable Innovation**.

We use the term **sustainability** to fully reflect both of its meanings:

- 1) Creating a self-sustaining, momentum-building dynamic of positive, continuous, long-term, and broad-based economic growth and prosperity; and
- 2) Generating prosperity and quality of life by conserving and reusing resources much more efficiently and in far greater harmony and balance with ecosystem cycles and the natural environment.

FIEMG's Youth Council leadership is developing a long-term strategy for dynamic, innovation-led economic transformation for the next generation, and we are working together with Global Urban Development (GUD), to help advise us on how to take further steps along this path of increased prosperity. GUD is working with FIEMG and the State Government to apply the framework of Metropolitan Economic Strategy in order to accelerate the Third Wave of Sustainable Innovation

THE THIRD WAVE: SUSTAINABLE INNOVATION

For the past decade we have been working to strengthen the innovation system in Minas Gerais, by investing in our fundamental assets, starting with our 11 federal universities, 2 state universities, and 9 technological institutes. The Federal University of Minas Gerais (UFMG) is the source of many of the innovative start-up enterprises in the business incubators of Inova, Habitat, and Insoft, and it gave birth to numerous successful companies in Belo Horizonte such as Labtest and Akwan. In 2005 Google acquired and converted Akwan into its Brazilian Research and Development center and its Latin American New Business Development headquarters. UFMG recently spawned BH-TEC, the Belo Horizonte Technology Park, as a new home for many fast-growing innovative firms. Technology parks and business incubators are now proliferating throughout the state, mainly near university campuses, in Vicoso, Itajuba, Santa Rita do Sapucaí, Lavras, Araxá, and many other communities.

THE THIRD WAVE: SUSTAINABLE INNOVATION

A key element of this innovation strategy is FAPEMIG, a state government agency funding innovative industry-oriented science and technology research and SENAI - CETEC, which is receiving major private and public investment from National Confederation of Industry (CNI) to establish several new **Innovation and Technology Institutes** focused on cutting-edge research for vital growth industries.



(I served as President of CETEC during the First Wave, and I'm proud to see it playing a new and more prominent role in the Third Wave.)

THE THIRD WAVE: SUSTAINABLE INNOVATION

We also are focusing on creating a more entrepreneurial, business-friendly culture that will make Minas Gerais a magnet for sustainable innovation, learning from our world-class business school, “Fundação Dom Cabral”, and from related organizations such as the Innovation Institute, and drawing on the experience of venture financing experts including FIR Capital and Inseed Investments.

In pursuing this approach, we are working with federal agencies such as BNDES, the Brazilian Development Bank, and FINEP, the Brazilian Innovation Agency, to obtain early-stage and growth financing for innovative businesses.



THE THIRD WAVE: SUSTAINABLE INNOVATION

We are making strategic investments in regional development to improve the attractiveness and competitiveness of the Belo Horizonte Metropolitan Region, Enhancing the quality of life through mobility and sustainability.



These include the new Tancredo Neves International Airport at Confins, and a nearby industrial airport and technology park for shipping high-value, low-weight technology products; major improvements in highways and rail service, including the region's first bus rapid transit (BRT) line; and a regional plan that designates concentrated innovation centers in the North, West, and South Vectors to encourage a range of industries from biomedical products and health services, to aerospace engineering, to renewable energy generation.

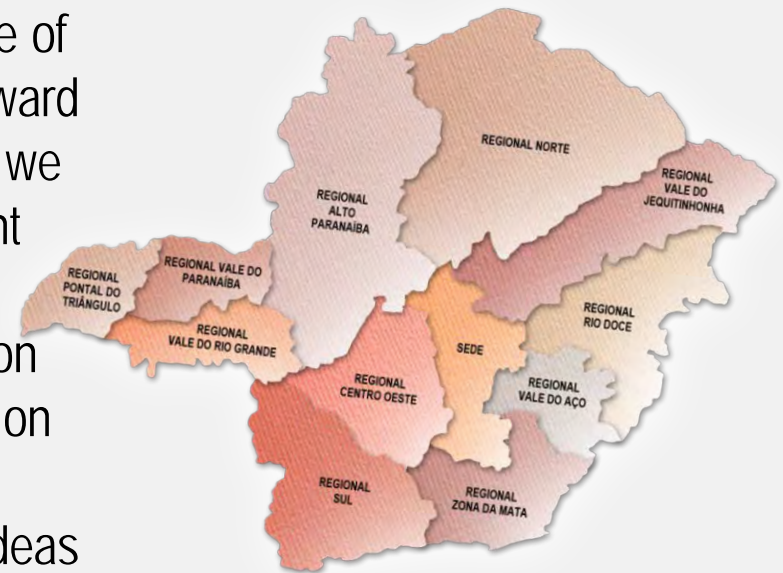
THE THIRD WAVE: SUSTAINABLE INNOVATION

Improving quality of life in Metropolitan Belo Horizonte and throughout every region in the state includes: enhancing historical and ecological tourism, such as along the Estrada Real in Ouro Preto, Mariana, Diamantina, and other communities; enhancing energy and water efficiency in buildings; improving the fashion and design appeal of locally produced clothing, furniture, jewelry, and related goods; and promoting the many famous Minas products worldwide, such as coffee, cheese, cattle, and cachaça. In GUD's strategic framework people are the most important economic asset, more than resources or location. Accordingly, in Minas Gerais we will continue to invest in many different ways to develop, retain, and attract a high quality, well-educated workforce, while encouraging and supporting an innovative, entrepreneurial culture.



THE THIRD WAVE: SUSTAINABLE INNOVATION

It took more than 60 years for the industrial –urban First Wave vision of Juscelino Kubitschek and his bold group of fellow business, government, and civic leaders in Minas Gerais to finally succeed during the first decade of the 21st century. Now that we are moving rapidly forward along the Third Wave path of Sustainable Innovation, we expect that it may take several decades for our current vision to be fully realized. That is why we put it in the hands of the FIEMG Youth Council and their generation of future leaders. The wisdom of the ancient expression _ “a journey of 1.000 Km begins with a single step” _ remains ever true today. We welcome you to share ideas and lessons with us, as we follow similar journeys towards Sustainable Innovation in our respective cities, regions, states or provinces, and countries throughout the world.



Thank you!

For further information, please contact:

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