

Belo Horizonte Metropolitan Economic Strategy Report

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Overview

Located within the Brazilian Highlands of southern Brazil, the State of Minas Gerais has long been known for its mineral wealth – dating back to the discovery of gold in the 1690s. (Bergard, 1999, p. 81) In fact, the name “Minas Gerais” is Portuguese for “general mines.” Even today, long after its gold reserves have been effectively exhausted, mining constitutes Minas Gerais’ largest source of wealth (though agriculture provides the largest source of employment), due to its supply of iron ore. Brazil’s fourth-largest State in terms of area, Minas Gerais is second only to the State of São Paulo in terms of the size of both its population and its economy. The State of Minas Gerais encompasses 226,460 square miles and contains an estimated 19,426,356 people. (Encyclopedia Britannica) (Ministerio do Turismo) Of those 19 million people, approximately 2,375,300 live in the capital City of Belo Horizonte, with 5,391,284 residing in the greater Belo Horizonte metropolitan area. (Encyclopedia Britannica)

Brazil’s first planned city, Belo Horizonte was established to replace Ouro Preto, a symbol of colonialism, as Minas Gerais’ capital shortly after the country became a republic in 1889. Originally known as Cidade de Minas, the city’s name was changed in 1901 to Belo Horizonte – Portuguese for “beautiful horizon.” (Encyclopedia Britannica) Governor Alfonso Pena tapped civil engineer Ararão Reis for the construction of the new capital. City streets, laid out as a grid including both perpendicular and diagonal streets named after Brazilian states and indigenous tribes, bears the influence of Washington, D.C. and Paris, France, which Reis used as models. Unfortunately, Reis’ plan proved lacking in foresight. He envisioned an eventual population of 300,000 and city streets were ill-prepared for automotive traffic. After years of steady growth, by 1950 the city itself housed 352,724 people, with over half a million total living in the Belo Horizonte metropolitan area. By 1960, the population nearly doubled: 924,279 people now lived in the metropolitan area with 693,328 in Belo Horizonte proper. By 1991, nearly 3.5 million people called the Belo Horizonte metropolitan area home (just over 2 million lived in the city itself.) Expansion continues in the surrounding metropolitan area, which now contains over 5.3 million citizens. (Eakin, 2001)

Population of Belo Horizonte, 1890-2008

Year	Município	Metropolitan Area
1890	8,009	-
1900	13,472	-
1920	55,563	-
1940	211,377	-
1950	352,724	507,993
1960	693,328	924,279
1970	1,255,415	1,669,392
1980	1,789,855	2,598,224
1991	2,048,851	3,461,905
2008	2,375,300	5,391,284

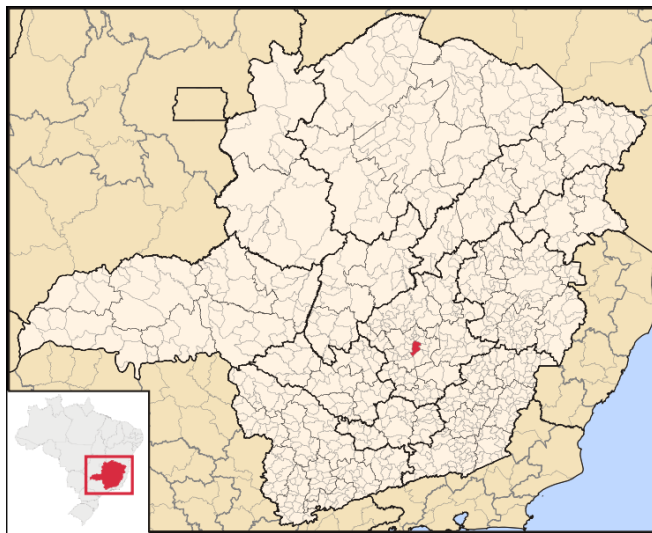
Sources: (Eakin, 2001) (Encyclopedia Britannica)

The following series of maps should give you a good sense of the geographical relationships between Minas Gerais relative to Brazil, the Belo Horizonte metropolitan area relative to Minas Gerais, and Belo Horizonte's urban center relative to the surrounding metropolitan area.



(Source: www.v-brazil.com)

The major mountain ranges are indicated in capitalized italics: Serra do Espinhaço in the north, Serra dos Aimorés to the east, Serra Dacanastra in the west, and Serra da Mantiqueira in the south. As we'll see, the cluster of cities surrounding Belo Horizonte is no coincidence. Note the location of the Belo Horizonte *município* within the map below, shaded in red:



(Source: http://commons.wikimedia.org/wiki/File:MinasGerais_MesoMicroMunicip.svg)

We'll zoom in, now, on the Belo Horizonte metropolitan area:



(Source: <http://portalpbh.pbh.gov.br>)

Key Industries

Throughout much of its history, industry in Minas Gerais produced food, textiles, and metal goods. These industries, however, were geographically scattered compared to those in Rio de Janeiro and São Paulo. The development of a modern capital in the form of Belo Horizonte proved catalytic to the region's economic growth. Marshall Craig Eakin, author of *Tropical Capitalism: The Industrialization of Belo Horizonte, Brazil*, found that the creation of Belo Horizonte served to "provide the industrial growth pole that Minas had lacked in the nineteenth century to accelerate the growth of these dispersed regional industries." (Eakin, 2001, p. 37) The city, he adds, "acted as a magnet attracting not only the state's political elite, but also its business elite," although fragmentation persisted through the 1940s and it was not until the 1960s and 1970s that Belo Horizonte began to assert its dominance over the state's business community. (Eakin, 2001, p. 38)

The following chart depicts the composition of the state's economy over time:

Industrial Structure of Minas Gerais, 1919-1980 (percent of value of production by industry)

Industry	1919	1940	1960	1980
Food Processing	51.5	34.1	48.9	20.9
Textiles	29.7	14.4	15.5	6.5
Metallurgy	2.3	20	12.6	31.8
Leather, wood, clothing	9.9	7.9	7	2.5
Chemicals	1.3	1.9	1.1	8.9
Non-metallic minerals	-	3.3	4.4	7.2
Mining	-	5	2.8	7.4
Other	5.3	13.4	7.7	14.8
Totals	100	100	100	100

(Source: Eakin, 2001, p. 137)

Note the increasing importance of metallurgy to the regional economy. Compare this information with the state's main exports from 2008:

Products	US\$ (million)	Part. % Total	Var. % 07/08
Non agglomerate iron ore and its concentrates	6,880.10	28.10%	48.70%
Non toasted coffee, not decaffeinated, in grain	2,981.40	12.20%	17.80%
Ferroniobio	1,506.10	6.20%	56.90%
Non linked raw iron cast	1,273.10	5.20%	90.40%
Gold bars, threads, solid sec. profiles, golden “bulhão”	616.2	2.50%	19.30%
Wood chemical paste (cellulose)	609.8	2.50%	10.00%
Automobiles w/ an ignition engine, 1500<cm3<=3000	500.1	2.00%	29.90%
Iron/steel billets	459.2	1.90%	51.80%
Semi-manufactured iron/steel products, not linked	447.4	1.80%	287.30%
Other silicons	417.4	1.70%	42.70%
Total – ten main products	15,690.80	64.20%	43.30%
Total – all the products	24,444.40	100%	33.20%

(Source: Minas Online,

http://www.desenvolvimento.mg.gov.br/index.php?option=com_content&task=view&id=24&Itemid=38)

The primacy of iron is self-evident. As one might expect given the centrality of Belo Horizonte, a number of large siderurgical companies, including Açominas, Usiminas, and Belgo-Mineira have their headquarters in the city. Unfortunately, the Minas Gerais iron industry has taken a substantial hit in the wake of the global financial crisis. In the fall of 2008, Governor Neves announced the creation of a working group to study alternatives to help the iron industry at a time when approximately 70 to 80 percent of furnaces in Minas Gerais are no longer in operation. Thus far, the State Government has addressed the issue via tax flexibility and the extension of additional credit. (State Development Secretariat, 2008)

Of course, within the practical realm, iron can only be considered a renewable resource as a recyclable. Though the potential exists to utilize the region’s ironworking specialization to transition from extraction to reuse, clearly the state economy must continue taking strides in the direction of sustainability and loosen its reliance on minerals. To that end, Belo Horizonte, as the main engine of progress, must continue to lead the way. Belo Horizonte has thus far succeeded in drawing traditional industrial operations, with steel manufacturers like the Japanese firm Sumimoto Metals and the French

company Vullourec building steelworks on Belo Horizonte's outskirts. The Italian automaker Fiat continues to invest heavily in the region, having already built a plant in nearby Betim. (The majority of large production facilities in the area reside in the suburbs of Betim and Contagem.)

In 2007, Minas Gerais received R\$ 5 billion in new investments from Fiat to increase its annual production from 700,000 to 800,000 units, establish "intelligence laboratories," and create a new automotive parts plant in the state. The investments were expected to generate 26,000 total jobs: 5,600 direct and 20,400 indirect. An additional R\$ 1.4 billion in investments from Fiat is expected between 2008 and 2010. Between 2003 and 2007 alone, Minas Gerais generated R\$ 159 billion in private and public investments. The state publicized the announcement of 1,767 different projects (both public and private) to be carried out by 2012, which would create 305,000 direct jobs. Rather than mining and metallurgy, the primary investments were made in agribusiness, electronics, chemicals, trade, and service sectors. (State Development Secretariat, 2007) This, perhaps, suggests the region's economic future.

Belo Horizonte in particular has succeeded in attracting a number of businesses within the tech sector, the most notable example being Google, which established its Latin American headquarters within the city. From there, Google operates the social networking site Orkut, visited by 80 percent of Brazilian Internet users. (Gross, 2008) Other information technology firms in the area include RM Sistemas and Paiva Piovesan. Biotechnology in particular is quickly becoming one of the city's distinguishing specializations. Today, over 16 percent of Brazilian biotech companies are located in Belo Horizonte, generating combined annual revenues in excess of \$550 million US. The city's universities have helped drive this growth in part through their research efforts regarding biodiesel, which have been supported by the Brazilian government as well as companies like Petrobras. (GloboTrends)

The services sector currently dominates Belo Horizonte's economy, accounting for a whopping 85 percent of the city's GDP. This is reflected in the city's unique culture, particularly the abundance of dining and entertainment venues within the city. Though its tourism and international renown trails Rio de Janeiro and São Paulo, the city has quietly become known as Brazil's "bar capital." Belo Horizonte offers most the drinking establishments per capita than any other Brazilian city with approximately 12,000 in total. Location may help explain this development. "One theory," suggests New York Times travel writer Seth Kugel, "has turned into a popular saying: 'Não tem mares, tem bares.' Loosely: 'There are no seas, thus there are bars.'" (Kugel, 2007) Perhaps the city's leadership deserves a share of the credit as well, though, for establishing job training courses to prepare low-income youth and young adults for potential careers in the food preparation and food service industry. (worldmayor.com) The city's botecos have been characterized as relaxed, informal, and diverse places catering to young and old alike. Each April, the Comida di Buteco competition, which began in 1999, invites residents and visitors to vote for the best bar in a variety of categories, from service and beer temperature to best tira-gosto (appetizer.) (Kugel, 2007)

While it may lack the beaches that have become so synonymous with Brazilian tourism, in recent years Minas Gerais has attempted to counter this by focusing on a different brand of tourism entirely: business tourism. Belo Horizonte alone has promoted more than 3,000 national and international events each year. The 2005 Inter-American Development Bank meeting remains one of the largest professional gatherings to date within the state and exemplifies the fruit of the city's recent investments in business

tourism. (GloboTrends) Eco-tourism, too, has received increasing attention in recent years and will be covered in the ‘natural resources’ section below.

Investments in Transportation

Minas Gerais maintains the largest road system in Brazil, spanning over 24,000 km, along with an additional 5,080 km in railroad lines, routinely used to transport products from both within Brazil and for global export through Brazilian seaports. (State Development Secretariat, 2009) A lesser used means of conveyance may be found in the state’s waterways, with ports in three major rivers: Iturama on the Grande River, Santa Vitorio on the Paranaíba river, and Pirapora on the São Francisco river. As for air travel, the state contains 70 paved airports, the largest of which is the aforementioned Tancredo Neves International Airport in northern Belo Horizonte. In 2006, Brazil’s first industrial cargo air freight service began operating at Tancredo Neves International Airport. Special customs clearances permit the tax-free import and export of component and of products assembled using locally-made parts and materials. Only in the case of finished products sold in the domestic market are duties and local taxes assessed. Belo Horizonte’s industrial airport covers 46,000 square meters, with ample room for expansion. (State Development Secretariat, 2009)

In June 1995, the City of Belo Horizonte received a \$99 million loan from the World Bank to help finance the construction of a \$200 million metropolitan transportation project, intended to improve public transportation by decentralizing it from the Federal to the State level, reducing air pollution, traffic congestions, and other adverse environmental impacts from motor vehicles (in part by promoting non-motorized transportation), and improving low-income citizens’ access to employment, health, and education. This metropolitan transportation investment project, which encountered numerous delays, included substantial infrastructure improvements. Specifically, Belo Horizonte’s rail line was extended, additional stations were added, transfer terminals were established to integrate bus and rail transportation, and a centralized road traffic control system was installed at 250 intersections. A vehicle inspection and maintenance program was established to control both tailpipe emissions and noise pollution. The World Bank’s evaluation of the project rated its impact as substantial, its sustainability as likely, and its overall performance as satisfactory. Borrower performance was rated unsatisfactory, however, primarily due to delays attributed to the Federal Government.

Though progress remains ongoing, the Belo Horizonte is successfully integrating bus and rail lines. Passengers traveling within the municipality can use a single smart card for both bus and rail trips – which is doubly beneficial for the environment in that the convenience of a single card system encourages public transportation use while the elimination of disposable tickets reduces waste. Inter-municipal buses, however, still use paper tickets. (The World Bank, 2006)

Education

Minas Gerais lays claim to the largest number of public universities in the country, with over 289 institutions of higher learning in total. The State’s public higher education system serves 5.3 million students, making it the largest in the nation. Minas Gerais’ leadership status is perhaps best exemplified,

by its budgetary resource commitment to spend nearly a quarter of its annual income (29.4% and approximately \$2 billion U.S.) on education. Minas Gerais was the first state in Brazil to offer a nine-year education program, receiving children into public schools beginning at age 6. (State Development Secretariat, 2009)

Health

Today, there are over 700 hospitals in Minas Gerais. The government continues its efforts to reduce the migration of patients to cities for healthcare, mounting the largest preventive healthcare program in Brazil, yet health coverage within Minas Gerais remains incomplete, with 64.8% of Minas Gerais citizens covered by 3,623 health teams. (State Development Secretariat, 2009) Minas Gerais leads Brazil in preventive healthcare, and one of Belo Horizonte's innovative health care initiatives is considered to be a global best practice. In 1993, Mayor Patrus Ananias, then freshly elected, began to treat food as a fundamental right. Designed and implemented by a 20-member council composed of citizen, labor, business, and religious representatives, the program uses City Government resources to assist both consumers and farmers. Public space is made available to local farmers, who operate "Direto da Roca" (Direct From the Country) stands in prime locations throughout the center of Belo Horizonte, offering fresh, healthy food at affordable prices. The Belo Horizonte City Government also offers entrepreneurs the opportunity to bid for the right to establish "ABC" markets on city-owned land. (ABC is a Portuguese acronym for 'food at low prices.')

Belo Horizonte sets the price for each of 20 food items, with pricing for all other items left to the retailer's discretion. ABC sellers must also bring their food products each weekend directly to poor neighborhoods.

Bringing food to poor neighborhoods may seem a minor convenience at first blush, yet the benefits are profound. Consider, for example, the case of Chicago. As J.D. Trout summarizes in *The Empathy Gap*,

In the predominantly black South and West sides of Chicago, residents are about twice as far from a grocery store than from a fast food place. In white, Hispanic, and diverse neighborhoods, however, fast food establishments and grocery stores are about equal in distance from residents. As the distance from grocery stores increases, so does obesity. In the "food deserts" in Chicago, about eleven out of every one thousand residents die of cardiovascular disease; the number is about half that in "food oases." The diabetes death rate in the areas with the worst access to grocery stores is more than twice that in the areas of best access. The correlation between food choice and health is stable across differences in education, income, and race. (Trout, 2009, p. 179)

In Belo Horizonte, the results of food-as-a-right initiatives have proven nothing less than staggering. In only a decade, the city more than halved its infant death rate. Frances Moore Lappé, author of *Diet for a Small Planet*, recently visited Belo Horizonte and marveled at the effectiveness of their anti-hunger campaign. Underscoring the program's success, Lappé points out that "between 1993 and 2002 Belo Horizonte was the only locality in which consumption of fruits and vegetables went up." Lappé interviewed a former administrator for the program, who told her, "I knew we had so much hunger in the world ... but what is so upsetting, what I didn't know when I started this, is it's so easy. It's so easy

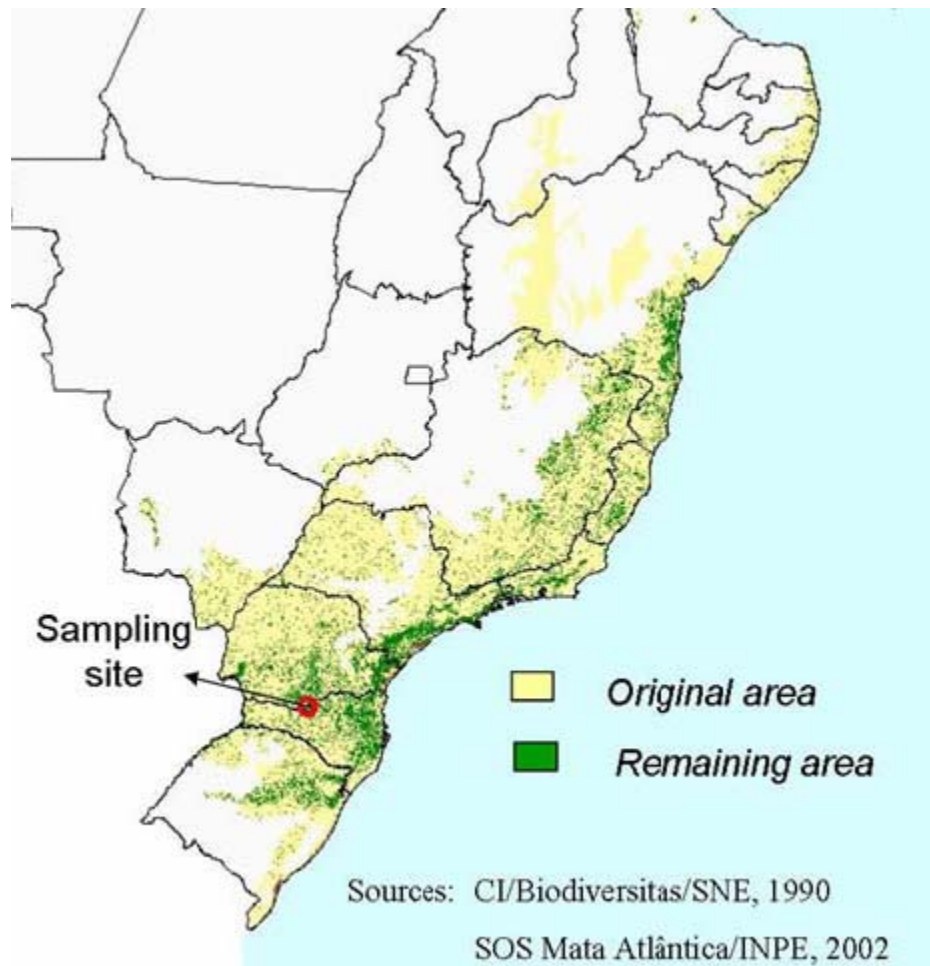
to end it.” At a cost of only \$10 million (U.S.), Belo Horizonte’s affordable and healthy local food program requires less than 2 percent of the City Government budget – which equates to about a single penny per resident. (Lappé, 2009) A food bank program collects unsold food from supermarkets and distributes it to the poor. (worldmayor.com)

These food programs benefit an estimated 40 percent of the city’s population, yet they are available not only to the poor, but to all who choose to avail themselves of the healthy foods offered through the program’s stands and markets, and even through some restaurants. People’s Restaurants provide over 12,000 healthy meals daily, prepared with locally grown ingredients, for less than 50 cents (U.S.) each. No proof of income is required for eligibility – all are welcome. Food security initiatives dovetail with food-as-a-right programs, providing community and school gardens and nutrition classes. Federal Government contributions subsidizing school lunches now purchase foods sourced from local growers where possible, rather than processed, factory-produced food.

Natural Resources

Energy generation plays a major role in the economy of Minas Gerais. Cemig (Companhia Energética de Minas Gerais), the largest energy company in South America, serves over 18 million people across 774 municipalities located within the state. Minas Gerais produces over 18% of Brazil’s electricity, making use of the state’s natural resources. Its rivers power some of the nation’s largest hydroelectric facilities, and its pine and eucalyptus forest reserves have been utilized in the production of charcoal. Though much attention has been paid to deforestation in recent years, potential threats to aquifers and hydrographic basins is being sufficiently addressed. Recently researchers from the Federal University of Lavras published a study on soil erosion in the Grande River Basin in Minas Gerais, finding that 37.5% of the overall basin is experiencing soil loss greater than an acceptable rate. (Beskow, 2009) While deforestation in and of itself remains a common cause of soil erosion, the sudden loss of forest area associated with “slash and burn” tactics can aggravate and intensify the damage. As Jaroslav Balek notes in *Hydrology and Water Resources in Tropical Regions*, “another negative impact is that of bush fires either controlled or uncontrolled. Changes in the hydrological regime can be even more drastic than those created by slow continuous felling of trees when open stands are covered by at least some vegetation. According to various sources such a sudden change can increase runoff volume tenfold and soil losses 100 – 3000 fold. Such a type of effect has been described in the coastal parts of Congo near Point Noir and on sandy deforested soils in Minas Gerais and São Paulo in Brazil.” (Balek, 1983, p. 73)

Though it does not contain any portion of the Amazon rainforest, Minas Gerais includes fragments of the Atlantic rainforest – only 7% of which remains intact. Even in its relatively depleted condition, the Atlantic rainforest remains one of the world’s top five biodiversity hotspots. Its fragments are home to over 20,000 plant species (8,000 of which are endemic) and 850 bird species (over 185 of which are endemic.) (Giorgi, 2007) Of the 850 bird species, 750 may be found in Minas Gerais. In all, the Atlantic rainforest hosts 80% of the endangered species located in Brazil. (Iracambi Research Center) The extent of deforestation is well captured in the map below:



(Giorgi, 2007)

Surprisingly, the Atlantic rainforest is actually in worse shape than the more publicized Amazon rainforest. While just 7% remains, a mere 10% of *that* is still considered primary, as the remainder has been logged at least once. While illegal logging operations persist, perhaps the greatest threat to the survival of the Atlantic rainforest, and the abundant biodiversity of life, is due to increasing human encroachment through agricultural expansion, and to a lesser extent, urbanization and industrialization.

Beyond laws protecting endangered species, including trees, Minas Gerais has attempted to preserve portions of its native forests through its parks. Home to seven national parks and fourteen state parks, the State also includes a number of environmental protection areas. The proximity of several parks to the city of Belo Horizonte has helped bolster a growing ecotourism industry. Itacolomi State Park, for example, is just 100 km from Belo Horizonte. Spanning 7,453 hectares, the park features the 1,700 meter high Itacolomi Peak. A bit further away, visitors can find Rio Doce State Park, part of the Atlantic rainforest. Rio Doce contains 40 natural lakes, the largest of which, Dom Helvécio lake, covers 6.7 sq km and reaches a depth of 32.5 meters. (State Development Secretariat, 2008)

In Belo Horizonte, an ambitious public works project known as Programa de Recuperação Ambiental e Saneamento de Belo Horizonte (Program of Environmental Recovery and Sanitation) set out

to clean 73 polluted streams (approximately 140 km in combined length) and incorporate them into the city's natural landscape. The project, which includes sanitation, flood control, and habitation replacement, will ultimately benefit an estimated 49 percent of the population. (worldmayor.com) The preservation and restoration of green spaces has become a major priority for Belo Horizonte. In 1993, the city could claim just eight parks. Today, there are 53. To help protect these spaces, the city has been divided into development zones based on land-use suitability, limiting construction in certain areas. Public-private partnerships between local authorities, businesses, and residents' associations help to maintain green spaces, as in the case of the "Adote o Verde" (Adopt the Green) initiative, in which 300 green spaces have been adopted by private entities. (worldmayor.com)

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