

THE CHALLENGES OF THE 21ST CENTURY

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From whatever angle one approaches the issue, whatever the knot one tries to undo, it remains clear that to overcome the great challenges it will face in the 21st century Brazil must drastically change its posture – and place the environmental issue at the forefront and center of every policy, so that it pervades all concepts and all actions. If this is not done, we will proceed from precariousness to precariousness, and always return to an increasingly complex and somber starting point.

Let us begin with the challenge that is deemed the most serious and immediate of all: overcoming the constraints of our country's external accounts. To achieve this, we would have to *double* our exports, in order to obtain the trade surplus needed to pay off our deficit accounts: debt service, remittance of profits, royalties, technical assistance, trips abroad, and so on.

Our current practices, however, show an altogether different picture. An anticipated trade surplus of \$10 billion soon began to dwindle down and a trade deficit is now expected.

This is not exactly surprising. Since the early 1990s, repeated diagnoses have highlighted the structural uncompetitiveness of Brazilian exports due to, essentially, a lack of actual technological innovation. To compensate for this deficiency, we have resorted to appropriating environmental factors, as if they were financial

elements, and to cheap labor, to depressed real wages. See, for instance, the *National Human Development Report for Brazil* (UNDP¹, 1966).

The environmental and social costs of such a scheme, however, tend to be recklessly high in the long run, for these resources are finite and will eventually be depleted. Furthermore, when competitiveness is achieved in this manner, the absence of scale of competition creates another, almost insurmountable obstacle.

A more recent document – *Agenda 21 Brasileira: Bases para Discussão (Brazilian Agenda 21: Groundwork for Discussion)* – confirms this prognosis.

This document is fruit of exhaustive discussions and analyses by the CPDS (Commission for Sustainable Development Policies) and the national Agenda 21, established by the federal government on a parity basis – that is, in addition to government officials, this board also has representatives from the business world and from society at large.

Through a public bid, the CPDS contracted a firm to prepare diagnoses on six sectors: sustainable agriculture, natural resources management, sustainable cities, reduction of social inequality, infrastructure and national integration, and science & technology. The six diagnoses were discussed in regional seminars and in a national seminar in Brasília, and were then systematized in the *Agenda 21*, currently being discussed in every state and to be discussed in yet another national seminar – at the end of which the document will become a proposal for sustainable development in Brazil.

The finished document’s diagnosis of the science & technology sector confirms the viewpoint expressed above, calling “spurious” the environmental factors and the low-cost labor the country uses to achieve competitiveness in exports, and decrying their serious social and environmental implications.

This diagnosis can be easily confirmed by even an offhand examination of reality.

In agricultural exports, for instance, with commodity prices reaching a 150-year low – or precisely because of this – Brazil continues resorting to the appropriation of environmental costs as if they were financial factors. In a broad sector of Brazilian agribusinesses, one of the costs of the current model is a brutal erosion

1. United Nations Development Program.

rate, which may reach 10 kilos of lost soil per kilo of harvested grain – totaling 1 billion metric tons of lost soil per year according to official figures. The soil's fertility will eventually have to be replaced with high-cost chemical inputs that will certainly not improve the price of our exported commodities.

This is just one of the many ways through which we pay an environmental cost that should be borne by the importing countries. But this does not happen and so these countries are able to maintain the competitiveness of their products – meat, among others. Many other such costs exist.

The current model of intensive deforestation to make room for intensely mechanized farming (coupled with mechanical plowing and furrowing of the land between harvests) leaves the soil dangerously exposed to erosion by rain, wind and sun. The soil that is carried to unprotected waterways will clog riverbeds and degrade water resources, as it is also loaded with agrochemicals. The costs can be stratospheric; one has only to see what happened in western Santa Catarina.

But there is more. The same model of intensive mechanization is the determining cause of rural exodus, one of the reasons for the brutal increase of the country's urban population and all its past and present fateful consequences.

In the 36 years between the 1960 Census and the population counting of 1996, the urban population in Brazil grew by more than 90 million people (31.3 to 123 million), while the rural population fell from 38.7 to 33.9 million. In the mid-west, a dramatic example, as an outcome of the so-called “expansion of the agricultural frontier”, urban population skyrocketed from 1 to 8.8 million during this period, while the rural population fell from 1.9 to 1.6 million. Although high birth rates account for part of the increase in urban population, the migration of farm laborers is also a major element in this trend.

In the large cities, this movement corresponds to the disorderly expansion of the peripheral or suburban areas, where real estate speculation transferred to an already impoverished State the costs of implementing all infrastructure – transportation, energy, provisioning, basic sanitation, education, health care, garbage collection, leisure etc. In most cases, no such implementation occurred leading to an overall picture that is difficult to solve today, culminating in extreme insecurity, unemployment and other deprivations.

Furthermore, this kind of urban expansion engendered the devastation of the environment and the occupation of high-risk and/or permanent preservation

areas. Simultaneously, neighboring rivers began to silt up – this time because of the raw sewage thrown and the garbage hauled into them, causing the erosion of their unprotected banks.

The recurrent floods that have become dismally familiar in the large Brazilian cities during the rain season is one of the end-results of the entire process, made even worse by the growing impermeableness of the urban soil – which, in turn, is a consequence of the slack enforcement of works ordinances that require permeable areas to be preserved. Add to all of this the progressive occupation of the riverbanks, areas of natural flooding, by large expressways and the result is a chaotic scenario during the summer rainstorms, when the large cities are constantly inundated – not seldom side-by-side with water rationing, because the highly polluted water sources that traverse the urban area cannot be used.

Inadequate occupation of the land – both rural and urban – is one of the most striking characteristics of the Brazilian model today. In urban areas, the transportation and energy matrix we have adopted has led to an absurd situation whereby more than 50% of the land is occupied either by routes of transportation or ancillary facilities (e.g., parking lots and garages), according to the National Public Transportation Association. What should be a means has become an end in itself, engendering the inconveniences of traffic jams, car restriction programs and delays in displacement.

Simultaneously, the overall costs of our transportation matrix, fundamentally based on fossil fuels, are not accounted for: no mention is made of the costs of roadway maintenance and expansion, the high rates of air pollution (implying other costs in the public and private health care networks), diminished productivity at work (more time wasted in displacement to perform the same task) etc. If these costs were accounted for, we might come to see that alternative sources of energy, now considered “more expensive”, might actually be more feasible.

The problems with the Brazilian energy matrix do not end here – far from it.

The Brazilian *Agenda 21* document mentioned above explicitly recommends that the country’s energy industry prioritize conserving existing energy, not expanding the supply. For a very simple reason: the conservation of 1 kilowatt of energy costs several times less than the generation of a new kilowatt (an estimated 5 to 10 times less, according to experts, depending on several factors). Furthermore, the waste and loss in the Brazilian matrix are voluminous – according to Eletrobrás,

R\$ 2.8 billion are wasted each year, while energy losses represent 15.5% of all the energy produced.

Discussions on this issue have involved, year in year out, on one hand the threat of brownouts and blackouts that never seem to materialize² and, on the other, the beguiling concept that conserving energy means refrain from using electric showers during peak hours or adequately closing the refrigerator door. Many other aspects should be considered:

- In the late 1980s, a consulting firm hired by Eletrobrás stressed the possibility of reducing energy consumption by 20% by the end of the 1990s at a cost five times lower than that of expanding the power system. The report also emphasized that more investments in energy imply fewer investments in education, health and housing – not to mention that lower energy consumption increases the competitiveness of exportable products.

- This possibility came clearly to light in the United States after the 1973 oil shock, for instance, where the economy grew 35% from 1974 to 1988 with not one additional kilowatt of electric energy being consumed, although millions of houses and commercial and industrial facilities were built.

- Notwithstanding, the budgets of the Brazilian electric sector only allocate scrimping funds for energy conservation programs (and even these minute percentages often do not materialize), even being aware that reducing annual consumption by 0.25% represents, after 20 years, a 5% reduction in consumption, that is, the expected annual rate of demand expansion.

- The energy debate in Brazil should also consider the possibility of adding a third shift in industrial and commercial activities. This would not involve expanding the supply of energy, because during the night and graveyard shifts the system's idle capacity is almost 80%.

- Finally, the current model that prioritizes huge power plants, entailing inevitably high losses, should also be questioned.

A particularly thorny issue concerns subsidies for electricity-intensive products, such as aluminum, metallic silicon, and pig iron. These products use 50% of the energy generated in Tucuruí, for instance, and their energy rates are subsi-

2. They did materialize in June 2001, when energy rationing had to be imposed.

dized anywhere from 30% to 60%, totaling an accrued loss with subsidies of R\$ 200 million per year (in 1997).

Industrialized countries are progressively ceasing to manufacture these electricity-intensive products because of their high environmental and energy costs (47% of the total cost of aluminum, for instance). Japan used to produce 1.1 million tons of aluminum per year; today it only produces 41,000 tons for its strategic stockpile, and imports the remaining, including from Brazil.

This is another instance where the environmental and economic costs are transferred, without compensation, to the exporting country.

More than 70% (794,000 tons) of the Brazilian output of aluminum (1.1 million tons/year) are exported. And we plan to export even more, now that the flow of the Tocantins river has been stabilized by the Serra de Mesa hydroelectric power plant – in addition to generating electricity, with enormous environmental costs, the 1784 sq. km [688 sq. mi.] reservoir will allow other dams to be built downstream and the Tucuruí energy production to double (where, as mentioned above, half the energy is already used up by electricity-intensive products).

Concern about the construction of new dams involves more than the losses and waste of our energy matrix – the elimination of which should be a priority, by the way. Let us also examine the issue from an environmental standpoint.

The 800,000 dams that exist in the world today have reservoirs that, if put together, would cover an area larger than France. Dams more than 15 meters high alone number 45,000 (in Brazil, 500-plus). The construction of these dams has displaced more than 10 million people.

Tucuruí, with its 2875 sq. km [1110 sq. mi.] reservoir, displaced more than 40,000 people, buried 2.9 million cubic meters (over 82 million bushels) of tropical wood, destroyed fishing downstream, disseminated malaria and led to mercury concentration levels 5 times higher than allowed by law.

Dams are being increasingly contested, especially those in forest areas. One of the reasons is that the decomposing organic matter retained in the reservoir releases more carbon dioxide and methane (the latter 20 times more harmful than the former in greenhouse gas emissions) than a thermal power plant of comparable size. One of the examples quoted by the World Commission on Dams is the Balbina hydroelectric plant, which releases 3 million metric tons of carbon dioxide per year, almost 10 times the emission of an equivalent thermal power plant.

These arguments reinforce doubts concerning Brazil's program to implement new large-size hydroelectric power plants in Amazonia.

In truth, the Amazon region may be the greatest challenge Brazil will face in the 21st century. And one for which the country still has no defined strategy.

Most studies of the Amazon region point to the glaring inadequacy of its soils to the traditional agricultural model. Yet, Brazilian government programs continue to refer to the new "axes" of penetration – actually, corridors to facilitate the expansion of this agricultural frontier, whose production is almost entirely for exportation, implying all the above-mentioned inconveniences.

From another perspective, only recently did the Ministry of Agrarian Matters enact a directive forbidding land reform initiatives from establishing new settlements in primary forest areas. In 1997, in a report on the activities of foreign lumber companies in the region, the External Commission of the Chamber of Deputies had already stressed that land reform settlements were responsible for more than 50% of all deforestation in the Amazon region. During the last 30 years, 88.15% of land given over for land reform were located in Amazonia. The reason is simple: this is the region with the least political and corporate resistance to governmental dispossessing, and also the one with the largest extension of public lands.

It is a well-known process. First, an area is chosen to become a new settlement for the landless, the lots are delimited and the new settlers arrive. Resourceless, with no credit, no type of technical assistance, these settlers make deals for the lumber companies to cut down the forest and make room for a house, a cleared plot for planting of "white crops" and pasture. Some time later, they either sell or rent their lot to a neighboring farmer and set out looking for a new one, where the same procedure will be repeated. This is called "itinerant deforestation". In some measure, the process also occurs in the *cerrado*³, where settlements in areas of native vegetation are not forbidden.

Current Brazilian policies have yet to find some format providing for the sustainable use of wood in the Amazon region. It is fully admitted that at least 80% of

3. A kind of tropical savanna, covering approximately 22% of Brazil, where grasses coexist with a wide variety of scattered tree and shrub species. The acid soils are ancient and deep, with a high concentration of iron and aluminum, and low productivity.

Amazonian wood continue to be extracted illegally and, by and large, exported. The process is a decisive contribution for the forest fires in the so-called “deforestation belt”, because smaller trees that were cut down are left lying on the ground.

An additional problem, especially in the *cerrado*, is the degradation and/or exhaustion of water resources due to changes in land use patterns – a problem for which we have very little systematized information and which will also be an enormous challenge in the coming decades. The overwhelming predicament, however, is protecting the biomes, so that they may continue to render us natural services (fertile soil, water resources, life conservation in the mangroves, carbon absorption etc.) estimated by Ibama⁴ in R\$ 4 trillion – at least five times Brazil’s Gross Domestic Product.

Both the *cerrados* and Amazonia face the challenge of defining adequate policies for the conservation and sustainable use of biodiversity – the richest in the planet, source of future drugs, of new foods, of new materials to replace those that become depleted. The other major challenge is to define policies for the conservation and sustainable use of these biomes – policies that replace the current free-for-all, whereby migrations are a very precarious substitution for the absence of official income and job policies.

In short, the great Brazilian challenge for the 21st century will be to define and carry out a policy for truly sustainable development – including the difficult task of calling into question our current growth models that focus only on economic aspects and neglect environmental and social elements. It must be remembered that, for this very reason, we have some of the worst indicators of wealth concentration in the world.

With this in mind, Brazil must reexamine its insertion in the international scene, as the *Agenda 21* document recommends.

Today, according to the UNDP, the industrial countries have 19% of the world’s population but account for 86% of the production and consumption of goods, 82% of exports, 71% of world trade, 68% of direct investments, 74% of telephone lines and 93.3% of Internet users. In 1993, the ten richest countries were re-

4. Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian Institute for the Environment and Renewable Natural Resources).

sponsible for 80% of the world's expenditure in research and development. They controlled 95% of registered patents in the United States and 80% of those registered in developing countries – true concentration of knowledge in the so-called “age of knowledge”.

Also according to UNDP, income concentration is also overwhelming all over the world. Together, the planet's three richest *people* hold assets that are worth more than the GDP of the 48 poorest *countries* combined, where 10% of humankind (600 million people) live. And the 200 wealthiest people in the world, all of them with a net worth of over US\$ 1 billion, jointly hold more than the annual income of 45% of humanity. In the last four years, these 200 people increased their assets – already worth more than US\$ 1 trillion – by approximately 150%.

In this scenario, says the UNDP, over the course of its life, a child born today in New York, London or Paris, because of its capacity for consumption, will have an impact on natural resources 50 times greater than a child born in the poorest countries. What will happen to these natural resources if the same pattern of consumption is extended to the 80% of the population in the countries commonly referred to as “developing”?

“This is unsustainable and must not be sustained,” says the UNDP.

If we turn our eyes to our own country, the overall picture is similar. In 1995, the wealthiest 10% of the Brazilian population held approximately 63% of the country's income, while the 50% poorest held only 11.6%. And the situation is getting worse.

Therefore, everything must be reassessed, if only because governance itself is at risk. And “without strong governance, the threat of global conflicts will be a reality in the 21st century – trade wars to promote national and corporate interests, uncontrolled financial volatility infecting healthy neighboring countries, and making politics, business and security unfeasible” (UNDP, 1999).

As jurist José Eduardo Faria has written, the volatility of the financial markets – which already accrue more than US\$ 70 trillion, or three times the world's GDP – forces rulers everywhere to permanently focus their attention on the computers that record changes round-the-clock in foreign exchange markets, interest rates and future commodities prices all over the world. They are likewise forced to react instantly to defend themselves. But such immediacy eliminates the possibility of another, slower tempo: the time for negotiation, discussion, achieving consensus,

that politics requires. And if the time of politics is eliminated, then the time of democracy, human rights and social justice are also eliminated, and the State will be left with only one arm with which to relate to society: that of security.

These are the challenges that Brazil faces on the dawn of the 21st century. Living up to them will require, above all, that the country is capable of changing its political habits and formats, whereby conflicts are never explicated or made explicit.

Every conflict must be made explicit, so that all the parties may sit at the table and reach negotiated formats that can be translated into programs for sustainable development and true governance – with support from society.

If not, we will truly be living in very difficult days.

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