



Macro-Economic Scenarios for The Amazon Region 2005-2025

Executive Version

January 2006

 **Elettronorte**
Pura energia brasileira

Eletrobrás 
Centrais Elétricas Brasileiras S.A.

Ministério de
Minas e Energia

BRASIL
UM PAÍS DE TODOS
GOVERNO FEDERAL

MACRO-ECONOMIC SCENARIOS FOR THE AMAZON REGION

2005 – 2025

Executive version

General Coordination

Expansion Planning Superintendence

João Neves Teixeira Filho

Technical Coordination

Market Studies and Projections Management

José Sarto Souza

**Ministry of Mines and
Energy**

**Centrais Elétricas
Brasileiras ELETROBRÁS**

**Centrais Elétricas Norte
do Brasil S/A –
ELETRONORTE**

Minister

Silas Rondeau CavFTAAnte Silva

President

Alúcio Marcos Vasconcelos Novais

Administrative Director

Araciba Alves da Rocha

Engineering Director

Valter Luiz Cardeal de Souza

Financial Director

José Drumond Saraiva

Special Projects Director

João Rui Castelo Branco de Castro

Board of Directors

Valter Luiz Cardeal de Souza - President
Carlos Raimundo Albuquerque Nascimento
José Antonio Corrêa Coimbra
Luiz Alberto dos Santos
José Ivanir Bortot
Sidney do Lago Júnior

CEO

Carlos Raimundo Albuquerque Nascimento

Corporative Management Director

Hércio José Ramos Brandão

Financial-Economic Director

Astrogildo Fraguglia Quental

Production and Trading Director

Wady Charone Júnior

Technology Director

Manoel Nazareth Santanna Ribeiro

Planning and Engineering Director

Adhemar Palocci

FOREWORD

Law # 10.847 of 03/15/2004 authorized the government to establish the *Empresa de Pesquisa Energética - EPE*¹, then implementing the New Institutional Model for the Electric Power Sector. The EPE aims at rendering services in the field of studies and researches oriented to provide inputs to the energy sector planning, such as electric power, oil and natural gas and their byproducts, mineral coal, renewable energy sources and energetic efficiency, among others. These duties are reflected on the planning for companies working in the sector.

Within the planning perspectives, in 2005 the EPE took on the responsibility for carrying out prospective studies on the Brazilian and global scenarios. Eletronorte then focused its attention on the Amazon region.

Therefore, Eletronorte is engaged towards efficiently performing its public responsibility and commitment to the Amazon region, attaching priority to electric and energetic planning to the region, using this work as the new starting point.

Eletronorte, developing a unique and unprecedented work, has historically promoted a comprehensive survey on the macro-economic and energetic scenarios in the Amazon region, so as to ground its projections on the electric power demand and its strategic and investment-related decisions. The first survey on scenarios to the Amazon region was carried out in 1988 and retaken ten years later, with the second and third subsequent surveys in 1998 and 2000, respectively.

This led the *Comitê Coordenador de Planejamento do Setor Elétrico – CCPE*² to appoint Eletronorte to coordinate the *Grupo de Trabalho de Quantificação de Cenários – GTQC*³, at national level, along the last four years prior to the establishment of the EPE-MME. This group was in charge of developing the surveys on global, national and regional scenarios, which served as baseline to the projections on the electric power demand in Brazil, its Regions and States.

Taking into consideration that the projection of electric power demand is the outset of the entire planning process, Eletronorte -- by means of its Planning and

¹ Energy Research Company

² Coordination Committee of the Electric Sector Planning

³ Work Group on Quantification of Scenarios

Engineering Board -- once again invests on prospective studies capable of anticipating future scenarios and, thus, underpinning present decisions and actions. These are the Macro-Economic Scenarios to the Amazon Region, where Eletronorte rested on the participation of institutions representing the Federal Government, State Governments, companies part of the Eletrobrás Groups, state electric power utilities, big industrial consumers, universities, trade associations, among others.

The studies on scenarios developed herein stand for an important contribution by Eletronorte to the government's planning, supporting future actions at Federal and State level, so as to contribute towards the Amazonian sustainable development.

With this work, Eletronorte reaffirms the crucial role of the increasingly integration between public and private actors engaged to the electric sector planning. It also pursued the permanent optimization of services provided in order to convert the quality of the electric power input into a factor of sustainability to regional and national development, besides being an effective condition of social inclusion, universalizing the access to this common good.

Adhemar Palocci
Planning and Engineering Director
Eletronorte

INDEX

1. CONSTRUCTION OF SCENARIOS	7
2. RETROSPECTIVE ANALYSIS AND DIAGNOSIS	9
3. GLOBAL AND NATIONAL SCENARIOS.....	12
4. SCENARIOS FOR THE AMAZON REGION.....	13
4.1. INITIAL SCENE.....	14
4.2. CONDITIONING FACTORS FOR THE FUTURE.....	19
4.3 MORPHOLOGICAL ANALYSIS.....	20
4.4. SCENARIO A – SUSTAINABLE AMAZON REGION.....	21
4.5. CENÁRIO B – COMPETITIVE AMAZON REGION.....	23
4.6. SCENARIO C– DISARTICULATED AMAZON REGION.....	25
4.7. SCENARIO D – VULNERABLE AMAZON REGION	27
4.8. REFERENCE PATHS.....	29
BIBLIOGRAPHY.....	34
GLOSSARY	37
Acronyms and Terms Referring to Scenarios.....	37
COORDINATION AND TECHNICAL TEAM.....	41

1. CONSTRUCTION OF SCENARIOS

The construction of scenarios is a methodological resource to project likely futures for a given reality being studied. Based on historical elements and understanding structural factors that characterize our contemporaneous reality, the construction of scenarios extracts from present the variables that may come to condition society's evolution in its different dimensions. The methodology tries to analyze the likely behavior of a set of uncertainties in a given time horizon. Therefore, the scenarios are likely results stemming from the evolution of current phenomena, based on logical and consistent possibilities, projected by means of the combination of hypothesis. It aims at providing guidance to present actions for likely futures in face of the opportunities and threats posed by a world marked by uncertainties.

ESSENTIAL PROCEDURES FOR THE CONSTRUCTION OF SCENARIOS

Retrospective Analysis and Diagnosis on the Object of study

Selection of Conditioning Factors for the Future

Selection of Low Uncertainty Conditioning Factors

Election of High Uncertainty Conditioning Factors (Critical Uncertainties)

Identification of Players with Power of Influencing the Critical Uncertainties' Behavior

Description of the Critical Uncertainties' Likely Status

Morphological Analysis – Coherent and Consistent Combination of the Critical Uncertainties' Likely Status

Description of the Described Likely Status

Definition of Alternative Likely Paths of Reality

Description of Scenes

Estimate on the most Relevant Indicators of the Object of study in Each Scenario

The building of Macro-Economic Scenarios to the Amazon Region started in May 2005 and the process was completed in November, after five workshops and field researches in nine States belonging to the Legal Amazon and at governmental institutions in Brasilia. Altogether, 100 interviews were held with regional and national players. Representatives of 24 guest institutions attended the workshops. The work rested on the cooperation and participation of electric power utilities and Eletrobrás.

Furthermore, the study relied on the analytical cooperation of experts by means of 20 lectures held focusing on regional approach. The work incorporated definitions and concepts by the researcher Bertha Becker, who have kindly accepted being exceptionally interviewed by Eletronorte's and Eletrobrás' experts.

It would be worth mentioning that the field research aimed at gathering updated data and information and exploring the view and sectoral/local perception by the relevant Amazonian players, so as to incorporate them to the diagnosis and prognostic analyses. Supported by techniques for prospecting the future, which go through the identification and selection of conditioning factors to the future (facts that holds future, tension points and bottlenecks, ongoing changes, strategic actions to development, threats, etc.) and the selection of critical uncertainties by means of brainstorming, a final consensus on the construction of likely macro-economic scenarios to the region was reached.

The research basis involved a broad range of documents and publications dealing with the Amazonian reality, focused on the retrospective analysis -- aiming at finding the way followed by the region in its development until reaching its current status -- and the potential, essential and relevant elements to its further development.

2. RETROSPECTIVE ANALYSIS AND DIAGNOSIS

Two processes divide current Amazon region and that of twenty years ago. The first one is of territorial nature, while the second is of structural character. The conjugation of both brought about a new socioeconomic and political dynamic which starts to show important changes. The evidences disclose not only the consolidation and exhaustion of the geo-political project that marked the 1970's and 1980's but, above all, they evidence the private capital advance attracted by the advantages and potentialities provided by the Legal Amazon. The deepest changes concern land use standards and social and regional division of work and production, which stem from the association between local and international interests.

The most evident and prevalent signal of economic-spatial resetting of the Amazon region is expressed by the agriculture and cattle farming industry performance, upon the consolidation of agricultural and industrial fronts in continuous expansion. Such fronts establish new patterns for land use leading the agricultural frontier expansion experienced in the 1990's to incorporate a new dimension, which is completely different of that of the regional dynamic in the 1970's and 1980's.

In previous decades, expansion was characterized more by population mobility resulting from "expelling power" of the center-south to settle the social pressures than by the displacement of capitalized economic fronts because of the frontiers' "attraction power" which are now fostered by a favorable conjuncture. According to Becker (2005), land is no longer occupied as a value reserve, as it used to be by the time of the previous frontier. Still according to her, land is now used for productive purposes.

On the other hand, structural changes are also taking place. The policy for the occupation of the Amazon region under the National Integration Program, from early 1970's to middle 1980's, has deeply marked the region. Becker highlights four structural changes that have been consolidated along this process: closer local-global relationships, which resulted from expanded connectivity provided by telecommunications networks; industrialization and increased mineral production; intensified urbanization; and, diversification and organization of the Amazonian society.

However, these changes have not ended and only recently the most important consequences could be perceived.

One of such consequences is the strengthening of socioeconomic inter-relations of heterogeneous activities. That is what happens with what Becker uses to call the “cattle-soybean binomial” that increasingly follows the logic of specialties’ integration, besides determining a concentration of flow in a given space, expressed by the territorial production-demand relationship, in consonance to the concepts by Guimarães⁴. This fact is expressed in a myriad of territorial uses in the Amazon region, where agriculture and cattle farming expansion is intrinsically articulated to timber exploitation.

This structural process entails another important consequence, i.e., the social resistance against land expropriation and uncontrolled exploitation of natural resources. This may result from improved organization at the regional society level, or from international pressures that advocate for socio-environmental causes. Increased awareness unfolds a conflict of interest that, in turn, integrates and determines the dynamic for the region. The process of increasingly establishing conservation units in the Amazon region -- which currently stands for almost 33% of the territory, including the indigenous areas -- is an evident indicator of the major role played by the socio-environmental variable in regional development.

Based on the aforementioned perspectives, the concept of Amazonian planning and development, both present and future, could not fail in considering the close relationship held between the economic, demographic, political-institutional and socio-environmental dimensions and its territoriality. Within this context, the major challenge posed to public policies in the Amazon stem from the conflict between two different ways of territorial usage: on one hand, a forest-related model; on the other hand, that related to *cerrado*⁵ strips and the areas opened by cattle farming and timber exploitation. This last is associated to most immediate benefits from economic activities, while the use of forest is based on future results. The transformations pace, jointly with conflicts

⁴ GUIMARÃES, E. N. . Economia regional: elementos conceituais e metodológicos. In: ANPEC, 1997, Recife. XXV Encontro Nacional de Economia. Recife : UFPE, 1997. v. 1. p. 473-492.

⁵ Type of tree savannah.

between two antagonist development models, currently divide the Amazonian territory into three macro-regions.

MACRO-REGION OF CONSOLIDATED PEOPLING

Conjunction of most populated and most economically occupied areas, the Macro-region of Consolidated Peopling⁶ sets up a structured “territoriality” where are most of the inter-dependent cities and urban networks, as well as the major highways. It concentrates the most dynamic regional production and the hugest exports-oriented private productive investments on the mineral sector (Province of Carajás) and the agricultural and cattle farming pool, all of which encouraged by regional fiscal incentives, additionally to the timber industry in verticalization. Its physical mapping makes up an extensive territorial strip that goes from Rio Branco, in the State of Acre, cuts the State of Rondônia, passing through Porto Velho and, along the BR 364, goes by Cuiabá and the most populated area of Mato Grosso, continuing through the BR-153 (Belém/Brasília) to Palmas northwards of Tocantins, until east and southeast of Pará (Marabá), also reaching Belém and the west of Maranhão (Imperatriz), including São Luís.

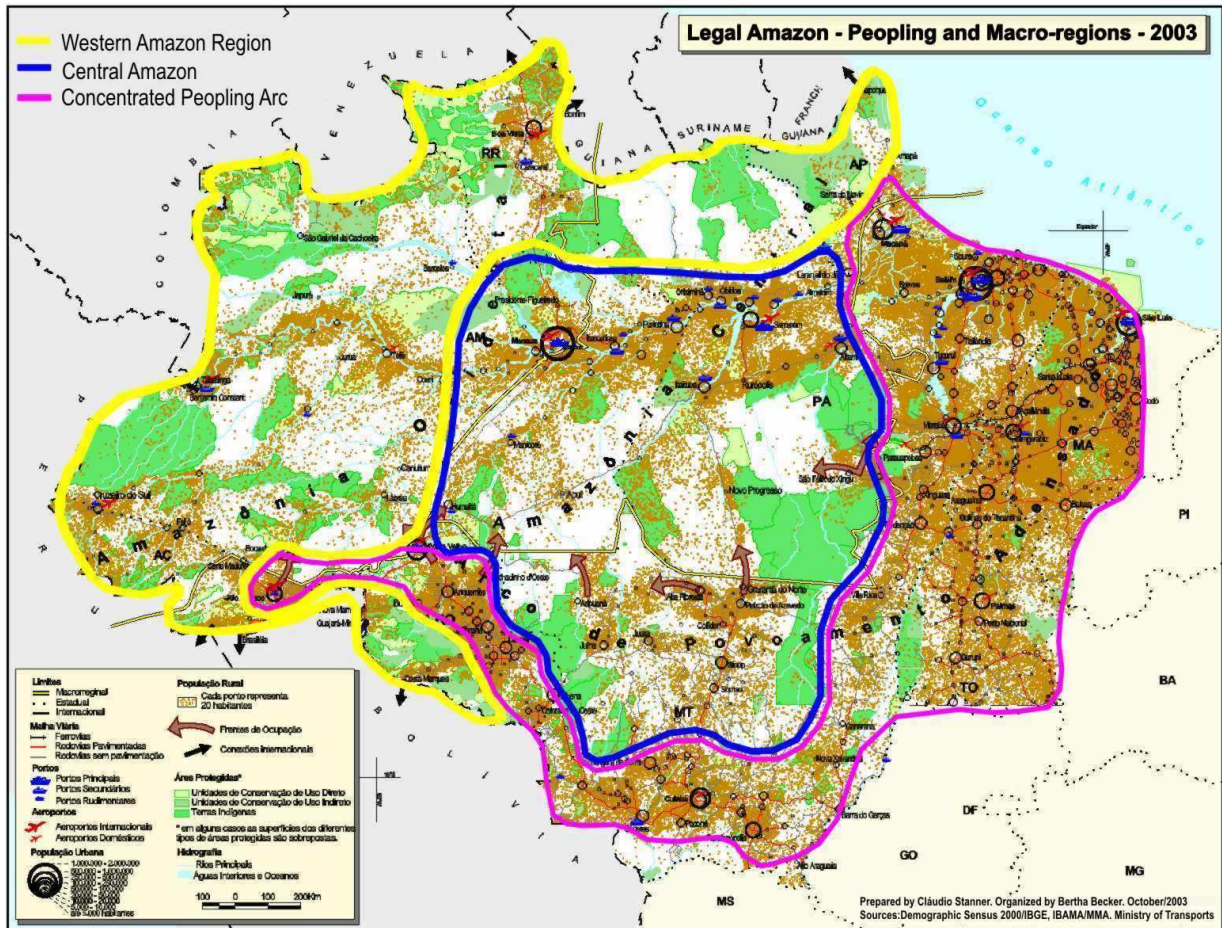
MACRO-REGION CENTRAL AMAZON REGION

The second macro-region comprises the entire Central Amazon region and establishes a “territoriality” of potential disturbances, since it comprises the portion subsequent and contiguous to the saturated areas of the Consolidated Peopling. It comprises the so-called “big north” of Mato Grosso additionally to the municipalities at the west and center-south regions of the State of Pará. It incorporates the whole area comprised by BR-163, from Santarém to Calha do Amazonas, including the northwest of Amapá. Southwestward, it goes until Humaitá, in Amazonas. Nowadays it is the most vulnerable portion of the Amazon region, since it gathers three major fronts of the Amazonian frontier expansion and is pressured by the consolidated agricultural and cattle-farming belt. Extensive areas of forest and indigenous lands also characterize this region. Therefore, most of the recently established Conservation Units is concentrated in this macro-region.

⁶ The concept of three macro-regions was developed by the researcher Bertha Becker (2005) and incorporated by the Federal Government to the concept of the *Plano Amazon Region Sustentável – PAS* (2004).

MACRO-REGION WESTERN AMAZON REGION

The third macro-region -- Western Amazon Region -- corresponds to the most preserved areas in the Amazon region, including the boundary sub-regions, the States of Amazonas, Roraima, Amapá and part of the State of Acre. It is bordered by the Pan-American countries and comprises the area of lowest human density and economic occupation. Here, Manaus -- industrial city confined in the protected forest -- is outstanding among other few urban centers (mostly made up of capital cities), thus explaining the strong urban concentration in this macro-region.

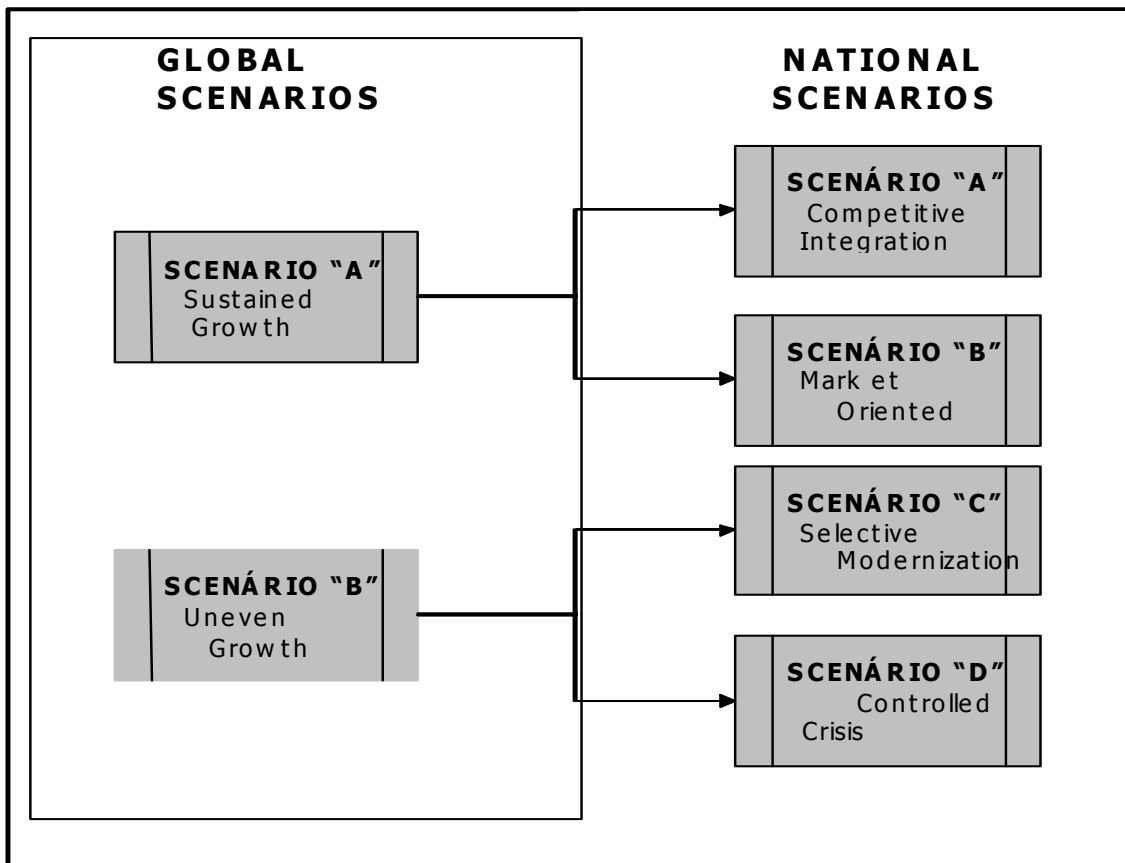


Source: Brazilian Ministry of National Integration

Figure 2.1 – Map of the three Macro-Regions in the Legal Amazon Region (2003)

3. GLOBAL AND NATIONAL SCENARIOS

The regional scenarios are inserted in a framework established by the performance of global and national scenarios. The initial parameters adopted were the studies by the *Empresa de Pesquisa Energética (EPE)* which in 2005 analyzed the likely behaviors of six national and seven global critical uncertainties. Based on the status of the critical uncertainties, EPE outlined two global scenarios and four scenarios for Brazil. The links among them are disclosed below.



Source: EPE – Empresa de Pesquisa Energética - Descrição dos Cenários Nacionais (2005– 2016)

Figure 3.1 – Links with Global and National Scenarios

4. SCENARIOS FOR THE AMAZON REGION

4.1. INITIAL SCENE

The initial scene was built in the “Retrospective Diagnosis and Analysis” and stands for the characterization of those paths that led to current reality, considering the impact, limitations and conditioning factors imposed by that reality to future movements.

This construction also incorporates elements of the national context where regional reality is inserted. In the current context, the Brazilian policy in force restricts public investments so as to produce high primary surplus to the National Treasury. This policy tries to reach a political strategy to equate public indebtedness. On the other hand, it is strongly committed to an aggressive policy of foreign trade, focused on new markets and new ways of establishing partnerships so as to expand the commercial balance surplus and, therefore, reduce the external debt/exports ratio.

Simultaneously, economic growth is limited by high interest rates resulting from a monetary policy that attaches priority to the inflation control and restricts credit and monetary means, as a way to holdback domestic demand and maintain the prices level under control.

Therefore, investment becomes moderate and even irregular sometimes. Unemployment rates remain high and the investments on social and regional policies have not yet become a priority. Social and regional disparities remain, or are reduced at extremely slow pace only as a reflex of the increased exploration of competitive advantages provided by each region and the short amount represented by the most undeveloped regions, particularly the Amazonian.

The environmental issue -- the importance of which is recognized by most of the players -- has been the target of important public policies, such as the *Amazônia Sustentável (PAS)*⁷ Plan and the *Plano de Desenvolvimento Regional Sustentável para a Área de Influência da Rodovia BR-163*⁸, which are expected to be implemented along the initial scene and are the main tools of regional policy to the Amazon region.

⁷ Sustainable Amazon Region Plan

⁸ Regional Sustainable Development to the area of Influence of the BR-163 Highway

Current infrastructure-oriented investments are focused on paving the BR - 319 Highway (Manaus – Porto Velho), expanding the Ferronorte and the Itaquí Harbor, as well as on fostering production by means of FINOR⁹, FCO¹⁰, PRONAF¹¹, among others. However, these investments are not enough to promote the required economic dynamic.

The approach to land issues is beyond the required level. The investments on research, science and technology are far below the required level to promote the economic and sustained use of regional resources and to the proper evaluation of current and future value of the Amazonian patrimony.

The fiscal policy to the Amazon region aims at maintaining current incentives, both at federal and state levels, thus guaranteeing the grounds to perpetrate the existing dynamic in the region.

Within this national context, the region reports a recent historical trend towards significant growth, with rates above the country's average. Sometimes it takes advantage of the international market conditions and its exports agenda; other times it turns its focus to the domestic market, which is the most feasible strategy to the Industrial Pool of Manaus. That is so because the region is still little expressive for the Brazilian product composition and, above all, due to the forestry, agricultural and cattle farming and mineral potentials, additionally to the existing production basis and the obvious competitive advantages provided.

Nevertheless, such historical trend may change in times of crisis or simultaneous retraction of national and global markets, when regions with higher productive density may take advantage of their more diversified economic portfolio which would lead then to more significant growth than that of the Amazon region.

An important aspect for outlining likely scenarios to the region would be the evaluation of its level of dependence on external markets, whether national or international, *vis-à-vis* its reduced domestic market. It establishes the dependence or even weakness level for the regional economics.

Therefore, global economics' behavior, the development projects for economic blocks, additionally to the effectiveness of international systems of commercial flows

⁹ Investment Fund for the Northeast Region

¹⁰ Constitutional Fund of Financing to the Middle-West Region

¹¹ Brazilian Program to Strengthen Familiar Agriculture

regulation undoubtedly work as expressive conditioning factors to the region, considering its insertion into global economics and the strong vocation of the exportation sector.

Concerning the Industrial Pool of Manaus, despite the current level of consolidation of its park, three great threats have been identified: dependence on fiscal incentives, predatory international competitiveness and specific protective measures by the FTAA. Thus, the future of the Pool depends on some factors, among which: its maturity and productivity to compete in other markets and achieve its independence from fiscal incentives; the maintenance -- currently granted until 2023 -- of fiscal incentives until the industrial park is consolidated; international limitations to predatory competitiveness that are being structured in the scope of the WTO, and commercial protective measures to some sectors, should the FTAA be implemented.

It is almost imperative for the initial scene to approach the financial status of local policy powers which restrains or even strangles the possibility for states and municipalities to build faster alternatives for expanding public services and promoting social development and improved income distribution, or even work as fosterers of their social and human capacity in face of the challenges posed by a globalized world. On the other hand, taking into consideration the strong dependence on processes of debt rollover and the lack of resources granted by the Federal Government transfer programs one can hardly envisage a path of strong regional political articulation to advocate for the States' interests.

The high levels of indebtedness and the commitment of its revenues to pay current expenses limit the States' financial capacity, hampering or even impeding the accomplishment of development programs, public investments and partnerships with the private initiative.

Another relevant aspect in this picture is the states' weakness in face of the resources-generating power in expansion-oriented initiatives. Such weakness may lead the states to become less rigorous in the inspection and approval of projects with strong environmental impact, or even to be complacent to activities aggressive to environment, as a way of obtaining tax-related revenues to alleviate this picture of financial impoverishment. This practice can be observed in some states which are strongly

mobilized towards installing iron industries, without the due procedures to control the resulting impacts.

The organization and synergy of regional players become more mature as threats and opportunities entailed by actions developed by different economic agents are identified. This provides more legitimacy and increases participation in the development of PAS and the BR-163 Plan. This posture trends to enhance the priority placed on socio-environmental issues, despite the financial situation of local political powers, which may become a limiting factor to mobilization.

Contradictorily, the organized endogenous movements -- capable of reflecting their legitimate interests at the political and economic levels – currently represent the greatest complexity of the Amazonian social dynamic. Thereupon, it would be possible to develop from the vicious circle of lack of central policies, economic concentration and spatial isolation towards achieving expanded power of interference in the regional and international public space. This would allow for reaching effective results at local level, oriented to the sustainable economic development of the Amazon region.

Therefore, the space issue is a determining factor to this reality and its space-related unbalances and diversities are reflected in the three macro-regions that make up the regional map. Such macro-regions, with their endogenous potential and exogenous influences, mirror the nature, pace and level of changes occurred in a given space-time, as aforementioned.

The Macro-region of Consolidated Peopling may be considered an organized macro-region, more or less developed and structured depending on the levels of requirement by the organizations and economic institutions. The Macro-region of the Central Amazon region which forms a “territoriality” of potential disturbance, stands for the strongest contradiction in relation to the actions developed by the State,. Such a contradiction brings about deep consequences to the economic, social and environmental dimensions, namely: support the exploitation of natural resources (minerals, agricultural and forestry, water resources, etc.) upon fiscal incentives and the implementation of infrastructure to provide dynamism to economics on one hand, and guarantee the environmental conservation by expanding the conservation units on the other hand.

The Macro-region of Frontier or Western Amazon Region -- where Manaus is outstanding -- has few urban centers along its extension. The frontier's susceptibility to the increasing external pressures urges for preventive actions at the three Governmental spheres.

Although this paper does not aim at outlining specific scenarios for each macro-region, it is of ultimate importance to understand that each scenario described below entails different impacts on each macro-region. For example, on one hand the environmental threat scenario has direct impacts on the Central Amazon region, since this area is found at the economic frontier and, on the other hand, a stagnation scenario would mean impacts on the strip of Consolidated Peopling, worsening the urban and social problems experienced there.

4.2. CONDITIONING FACTORS FOR THE FUTURE

The conditioning factors for the future are variables that either have or may come to have strong or weak impact on the object of study. They are classified as variables of low and high uncertainty. The first are those variables that, despite having significant impact on the future picture to the region do not have enough power to change the orientation or direction of regional dynamics (low impact), or their path is highly predictable (low uncertainty). Some variables may be classified as low uncertainty and low impact at the same time. The high uncertainty conditioning factors are characterized by high levels of unpredictability and, therefore, the so-called *critical uncertainties* are characterized by strong impact and high uncertainty. The following chart discloses the conditioning factors classified according to their predictability.

Chart 4.1 – Low and High Uncertainty Conditioning Factors

LOW UNCERTAINTY CONDITIONING FACTOR	HIGH UNCERTAINTY CONDITIONING FACTOR
Consumer Market Size	Regional Policy
Dependence on External Market	Fiscal Policy
Socio-environmental Awareness	
Existing Industrial Basis	Public and Private Investments
Intensified Use of Natural Resources	Political and Institutional Articulation
Carbon Market	
Biodiversity	Socio-Environmental Issue
Indigenous Issue	Land Issues
Amazonian Brand	
Conflicts on the NGO's works	Research, Science and Technology
Ecotourism Exploitation	Economical Dynamic

4.3 MORPHOLOGICAL ANALYSIS

The morphological analysis stands for the combination of likely future states of those conditioning factors of high uncertainty and strong impact, or critical uncertainties that result in pure scenarios. The combinations take into consideration the hypothesis' coherence and consistence and their relation one another. The chart below discloses the qualitative comparison among the scenarios, with previously combined hypothesis, considering the likely realities for 2025.

Chart 4.2 – Qualitative Comparison among Scenarios to the Amazon region

UNCERTAINTIES	REASONABLE HYPOTHESIS TO THE SITUATION IN 2025			
Regional Policy	Effective	Partially implemented	Compensatory	Missing
Fiscal Policy	Space expansion and diversification of existing incentives	Maintenance of current incentives	Maintenance of current incentives	Abolishment of fiscal incentives
Public and Private Investments	Hastened with public and private participation	Moderate with public and private participation	Maintenance of current level of investment with little private participation	Reduced investment, only with public resources
Political and Institutional Articulation	Strong articulation capacity	Medium articulation capacity	Low articulation capacity	With no articulation
Socio-environmental Issue	High Priority	Moderate priority	Low priority	No priority
Land Issue	Partial solution, easing conflicts	Partial solution with conflicts	With no solution and worsened conflicts	With no solution and worsened conflicts
Research, S&T	Hastened development	Moderate development	Slow development	Stagnation
Economic Dynamic	Hastened	Moderate	Low	Stagnated
MOTIVE IDEAS	SUSTAINABLE AMAZON REGION	COMPETITIVE AMAZON REGION	DISARTICULATED AMAZON REGION	VULNERABLE AMAZON REGION

4.4. SCENARIO A – SUSTAINABLE AMAZON REGION

Scenario Philosophy

Sustained and hastened growth, with effective regional and fiscal policies and conservation of the Amazonian patrimony.

Scenario Description

The backdrop to this scenario is the aforementioned global scenario of “Sustained Growth” and the national scenario of “Competitive Integration”. These contexts set up favorable global situation that opens broad spaces to emerging countries in global trade, combined to hastened growth of Brazil resulting from the comprehensive implementation of structural reforms, expanding the social and regional sharing of products entailed by economic activities.

Although the initial scene imposes limitations to economic growth, the combined effects of the implementation of structural reforms, inflation control, equated financial situation of the National Treasury and the policy on foreign trade should be perceived along this scenario.

Therefore, soon after the early years, Brazil shall gradually start reaping the fruits of efforts developed along the first years, reducing the risk-Brazil and the domestic interest rate, thus increasing its investment capacity and the availability of public resources.

The implementation of the regional policy to the Amazon region is increasingly enhanced, putting into effect the PAS and the *Programa de Desenvolvimento Sustentável da Área de Influência da BR -163*.

The regional policy performance is reinforced by an increasingly articulation among regional players. This naturally leads to legitimate and expand this policy from a governmental plan to an Amazonian society project.

Within this scope, fiscal incentives are gradually expanded, reviewed and endowed with new tools. This increases their power of attracting and establishing development projects.

As the economic dynamic expands and the State recovers its financial capacity, the investments on science, technology and education are also expanded. That would

unfold a more dynamic process of producing the knowledge required to properly appraise the Amazonian patrimony, incorporate technology to productive processes and improve quality of life.

The private capital gradually takes on investments on infrastructure, as a consequence of the reduced risks and increased availability of resources entailed by the level of economic activity achieved.

It increases the priority placed on socio-environmental issues, leading to a gradual recovery of the social debt and integration of the Amazonian traditional communities into the productive process. The technology incorporation and appraisal of environmentally sustainable activities are the baseline for this process.

The equating of land issues is gradually expanded as the regional macro-zoning – fruit of an effective regional policy -- comes true, thus providing guidance to this process.

Along the first years, the economic dynamic in the Amazon region experiences slight acceleration, which trends to increase in the long-run, in a stable curve.

4.5. CENÁRIO B – COMPETITIVE AMAZON REGION

Scenario Philosophy

Competitiveness-focused growth, under the risk of uncontrolled advance of the agricultural and cattle raising frontier and little expressive regional development.

Scenario Description

The background of this scenario is the aforementioned global scenario “Sustained Growth” and the national scenario “Market-oriented”. This context sets up favorable global situation, although at domestic level the political reforms have been partially implemented, and the National Treasury has failed in reaching a surplus situation at the speed required to leverage investments in social and regional areas.

The motive idea for this scenario is the competitiveness-based economic process. Therefore, it leads to the growth of specific sectors where the region has competitiveness, available natural resources or comparative advantages like, for example, the mineral extraction industry, agribusiness and timber industry, additionally to Manaus’ industrial sector. Here, investments are oriented to sectors reporting higher return rates and lower risk and that is why the infrastructure developed is oriented to meet specific demands.

The priority attached to social and environmental issues is not adequate and, therefore, advances achieved directly stem from economic activities rather than from effective public policies, due to the lack of resources to implement them. Thus, regional policy is only partially implemented in some areas while in others it is just of compensatory nature. Likewise, social policies are also of compensatory nature only.

Environmental risks are increased because the priority focus of the economic process is placed on achieving immediate results, with no effective regional policy. Deforestation tends to keep its current pace and the restricted insertion of community-based economic activities into the economic process in general trends to be perpetuated, upon their own efforts.

The approach to land issues is insufficient, as well as investments on research, science and technology that remain far below the required level to establish sustainable

natural resources management in the region and develop economic alternatives, additionally to the adequate evaluation of current and future value of the Amazonian patrimony.

The fiscal policy oriented to the Amazon region contemplates the maintenance of current incentives, both at federal and state level, thus guaranteeing the basic conditions to sustain the economic dynamic currently in force in the region.

The organization of and synergy among regional actors remain fragmented, since they are strongly influenced by the economics dynamic and miss the due priority to distributive, social and environmental issues. The players' articulation is focused on the paradigm in force of maximizing production, exploring comparative advantages and competitiveness.

Upon moderate investment, the regional production capacity follows the same pace in its expansion, leading to a moderate increase on the regional GDP although the path tends to be of continuous growth with slight acceleration, particularly along the last years.

The Amazon region participation in the Brazilian GDP grows slowly. This growth results from its most competitive sectors and its comparative advantages. This condition is due to the linking of some important sectors of regional economics to international market conditions. Since this scenario is inserted into a favorable global context, such sectors of regional economics may take broad advantages of it and "pull" its economic dynamic.

4.6. SCENARIO C – DISARTICULATED AMAZON REGION

Scenario Philosophy

Disarticulation of regional and fiscal policies, as well as of the synergy among regional players, with high risk of increasing environmental degradation and worsening regional disparities.

Scenario Description

This scenario is inserted into a global reality of “Uneven Growth” and the national scenario of “Selective Modernization” previously described.

The global context sets up an unfavorable situation where growth is concentrated on developed countries, reporting low level of regulation over global financial and commercial flows. It is also characterized by the persistence of customs and non-customs barriers which restrict global trade.

At national level, the implementation of political reforms is only partial. The country risk develops in slow pace and with fluctuations, while the financial situation of the Brazilian National Treasury remains tight, with higher interests that, nevertheless, are below the current interest rates. Difficulties in attracting and expanding the debt profile remain and the debt/GDP ratio is reduced at slow pace.

The motive idea in this regional scenario is disarticulation, reaching the field of regional and social policies, coalition among regional players and priority attached to environmental issues.

The actions of social nature are exclusively compensatory ones, aiming at preventing the degradation of human development indexes and the intensification of regional disparities existing in the country. The indicators for such regional disparities experience some oscillations.

Environmental risks are increased due to uncontrolled economic process which tends to a disordered advance over the Amazonian patrimony. There is a strong trend towards increased environmental degradation and the insertion of community-based productive activities into the economic process may be jeopardized.

No priority is placed on land-related issues and there is a strong trend towards perpetuating the current conflicts about lands. The investment on research, science and technology tends to be reduced due to scarce public resources, thus increasing the risk of predatory exploitation of the Amazonian biome-based resources.

The most likely fiscal policy tends to maintain the current incentives both at federal and state levels, co-existing with constant threats and fights that would be translated into a single point of synergy among regional actors.

In a scenario of reduced global growth, the high level of dependence on external market should lead the Amazon region to constrict its economic activities, notably those based on foreign trade. This trend is also perceived in activities oriented to domestic market.

Investments on infrastructure are shortened to the minimum required to preserve economic activities, as a result of scarce public resources, reduced level of the economic dynamic and the risk identified by private investors.

The Amazon region's participation in the Brazilian GDP is expected to decrease with direct consequences on its social indicators.

4.7. SCENARIO D – VULNERABLE AMAZON REGION

Scenario Philosophy

Economic stagnation leaving the region in the hands of productive powers. The environmental degradation is expanded and human development indexes are significantly reduced.

Scenario Description

This scenario is inserted into a likely reality where the global scenario is that of “Uneven Growth” and the national scenario is of “Managed Crisis”, as described above.

The global context sets up an unfavorable situation with intensified conflicts and increased disparity among nations. Disarticulation on global power structures and consequent contraction of international trade are very likely to happen. Then, there is an intensive shrinking on investments resulting from increased risks perceived and scarce resources. Investments are now mainly oriented to more mature economics. The world experiences global contraction.

At internal level, the political reforms are partially implemented. Only the most urgent policies are implemented. The country risk reports ascending curve and great volatility. The debt/GDP ratio is worsened despite the trend towards compensatory fiscal and monetary policies focused on mitigating the crisis’ social consequences, leading to losses on the long-term view and on the existing consistence.

The motive idea for this regional scenario is the vulnerability that reaches the fields of regional and social policy, coalition among regional players and the priority placed to socio-environmental issues.

Regional and social actions are of compensatory nature and merely aim at avoiding the intensive degradation of human development indexes. The existing regional disparities in the country are worsened and their indicators experience some oscillations.

The maturation of some projects mainly in given sectors that have managed achieving competitiveness and quality at international standards, jointly with fiscal difficulties, can ground the reduction of fiscal incentives to local industry and projects.

Environmental degradation is intensified as a result of the impossibility of organizing economic activities, additionally to the dynamic's retraction that lead to the logic of reducing costs at any price.

Impoverishment establishes extremely restrictive outlines that wear out the synergy among regional players in the fight for fiscal incentives. Then, each player starts focusing on their own survival.

Investments on infrastructure are reduced to the minimum extent required to preserve economic activities, as a result of scarce public resources, reduced level of the economic dynamic and the level of risk identified by private investors.

The participation of the Amazon region in the Brazilian GDP is expected to undergo a drastic drop, with direct consequences on human development indicators and worsened quality of life. It should be observed that regional economic sectors bound to international market shall face a scenario of global economics contraction, while those sectors that depend on national economics shall face an internal scenario of crisis.

4.8. REFERENCE PATH

The reference path Amazon region future behavior was built based on the pure scenarios A to D, described in previous chapters. The background for this path is the EPE “reference path” to global and national scenarios. Such context configures a favorable situation at global level capable of opening room to emerging countries in the international trade, jointly with the Brazilian hastened growth resulting from the broad implementation of structural reforms, expanding the social and regional sharing of the economic activity’s product, as previously described.

Scene 1 (2006 to 2008) – Consolidation of the Grounds to a Sustainable Growth

The first scene is determined by the initial scene, where the country restricts public investments so as to produce high primary surplus to the National Treasury, following a political strategy to equate public indebtedness. On the other hand, Brazil is strongly committed to an aggressive foreign trade policy, focused on new markets and new commercial partnerships, aiming at expanding the commercial balance surplus and thus reduce the external debt/exports ratio.

Simultaneously, the economic growth in this scene is limited by high interest rates that result from a monetary policy mainly oriented to control inflation. This monetary policy restricts credit and monetary means as a way to refrain the internal demand and keep the prices level under control.

Therefore, investment increases in a moderate and even irregular way sometimes. Unemployment rates remain high and the investments on social and regional policies are not priorities. Social and regional disparities remain, or are reduced at extremely slow pace only as a reflex of the increased exploration of competitive advantages provided by each region and the short volume represented by the GDP of most undeveloped regions, particularly the Amazon region.

The environmental issue -- the importance of which is recognized by most of the players -- has been the target of important public policies, such as the *Amazônia Sustentável (PAS) Plan* and the *Plano de Desenvolvimento Regional Sustentável para a*

Área de Influência da Rodovia BR-163, which are expected to be implemented along this scene and are the main tools of regional policy to the Amazon region.

Public investments also comprise paving the BR -319 Highway (Manaus – Porto Velho), expanding the Ferronorte and the Itaquí Harbor, as well as fostering production by means of FINOR, FCO, PRONAF, among others. However, these investments are not enough to increase the economic dynamics to such a level that allows for recovering the social debt and regional disparity.

The approach to land issues remains beyond the required level. The investments on research, science and technology continue far below the required level to produce the economic and sustained use of regional resources and to the proper evaluation of current and future values of the Amazonian patrimony.

The fiscal policy to the Amazon region contemplates the maintenance of current incentives, both at federal and state levels, thus guaranteeing the grounds to sustain the existing dynamic in the region.

The organization and synergy of regional players become more mature as threats and opportunities entailed by actions developed by different economic agents are identified. This provides more legitimacy to and increases participation in the development of PAS and the plan on the BR-163 Sustainable Development. This posture trends to enhance the priority placed on socio-environmental issues.

Scene 2 (2009 to 2016) – Retaking Continuous Growth

Along this period, Brazil starts -- at internal level -- reaping the fruits yielded by the implementation of structural efforts and public finances equating, reaching the investment grade by the international agencies of investment risk evaluation. Simultaneously, it takes advantage of the commercial opportunities entailed by its foreign trade policy along scene 1 and by the favorable global scenario, where the regulation system development provides stability to international flows and broad rooms for emerging countries.

The excellent risk level reached leads to intensified investments that hasten the economic dynamic and the GDP growth, thus reducing unemployment. The investment

on science and technology is likewise intensified, broadly spreading its benefits over the productive processes and quality of life.

Most of the infrastructure-oriented investments are now made employing private resources, therefore allowing the use of public resources to social and regional policies. This triggers a cycle of recovering social debt and reducing regional disparities.

The Amazon region directly benefits from these processes and from the enhanced positioning of its internal players concerning the Sustainable Amazon region. This leads to an economic-ecological zoning at regional level capable of providing guidance and organization to economic activities, simultaneously to the sustainable use of the region's natural potentiality.

The priority placed to social issues leads to increased equating of financing, technology and logistic affairs in community-based production projects, additionally to management projects, producing a movement towards sustainable development.

Land issues are now effectively approached, based on the regional economic-ecological zoning. This allows for gradually settling conflicts and fomenting economic activities.

The economics dynamic for the Amazon region undergoes gradual acceleration and starts running a way to recover its human development indexes.

Aiming at expanding the social benefits entailed by economic activities, mainly concerning the spatial scope of these benefits, fiscal incentives are expanded in what concerns their territorial effectiveness and their tools are reviewed and expanded.

Scene 3 (2017 to 2025) – Sustained Development

The process of national sustainable development is consolidated in scene 3. This scene is inserted in a scenario of global development, with multi-polar hegemony, an efficient system to rule international financial flows and hastened development of science and technology capable of disseminating technology.

The Amazon region is integrated to this new economic moment, reaching a virtuous cycle of development, increasing its participation in the GDP and improving its social indicators.

The regional growth is enhanced by an effective regional policy that produces a project to the region's future, with broad participation of local players, allowing for an adequate resources commitment plan.

The expansion and diversification developed in scene 2 allow for maintaining fiscal incentives. Nevertheless, fiscal exemption is reduced in sectors where industrial and competitive maturation no longer require for the same level of incentives as the existing ones.

The resources employed to investments on infrastructure are mainly private ones. This allows the Governments to concentrate their resources on social areas, thus intensifying the recovery of social debt and reduction of regional disparities.

The level of investments on the productive sector remains accelerated due to the trustworthiness achieved by Brazil, and also to the availability of resources entailed by economic activities.

Regional players provide continuity to the processes of consolidating their alliances and strategies, producing general enhancement of the Amazon region mainly in face of external players. Furthermore, they can now take advantage of the potential opportunities provided by both global and national scenarios.

The effectiveness of social and regional policies naturally increases the priority attached to social and environmental issues. It also places emphasis to investments on science and technology thus providing the required means to disseminate knowledge, use resources and appraise the Amazonian patrimony, besides increasing the incorporation of technology to productive processes, clearly improving the quality of life.

The economic dynamic reaches high levels, broadly spreading progress. Its association to effective social policies, it leads to times of significant social and economic development, with the sustainable use of natural resources and effective participation of endogenous players who are now better organized.

The participation of the Amazon region in the Brazilian GDP increases along the scenario life, with slight displacements in the first years that tend to be intensified as time goes by. Human development indicators improve, mainly along the last years.

Chart 4.3 – Scenes of the Reference Path

UNCERTAINTIES	SCENE 1 (2006-2008)	SCENE 2 (2009-2016)	SCENE 1 (2017-2008)
Regional Policy	Under implementation	Partially Implemented	Effective
Fiscal Policy	Maintenance of fiscal incentives	Expansion and diversification of fiscal incentives	Diversification of fiscal incentives
Public and Private Investments	Maintained at current level, with little private participation	Moderate, with public and private participation	Hastened, with public and private participation
Political and Institutional Articulation	Low capacity	Medium capacity	Strong capacity
Socio-environmental Issue	Moderate priority	High priority	High priority
Land Issue	With no solution and with conflicts	Partial solution, easing conflicts	Partial solution, easing conflicts
Research, S&T	Slow development	Moderate development	Hastened development
Economic Dynamic	Moderate	Moderate	Moderate

Source: Eletronorte/EPDM

BIBLIOGRAPHY

BECKER, Bertha K. 2005 – “Geopolítica da Amazônia”. In: Estudos Avançados, vol.19, # 53, p. 71-86

_____, Bertha K. 2004 - Amazônia: geopolítica na virada do III milênio. Rio de Janeiro, Garamond.

_____, Bertha K. 2001 – “Revisão das políticas de ocupação da Amazônia: é possível identificar modelos para projetar cenários?”. In: Parcerias Estratégicas, MCT, # 12, p.135 to 159

_____, Bertha K. 2005a – “Amazônia: desenvolvimento e soberania”. In: Brasil, o estado de uma Nação – Editora Garamond, IPEA, 2005a. p. 201-249

ELETRONORTE. 2001 – Cenários Sócioenergéticos da Amazônia 2000 – 2020, Brasília, February/2001.

_____. 2005 - Curso sobre Metodologia de Construção de Cenários, Brasília, May.

_____. CCPE/GTQC. 2002 – Cenários Mundiais e Nacionais 2002-2012, Brasília, May/2002.

_____. CCPE/GTQC. 2003 – Cenários Mundiais e Nacionais 2003-2013, Brasília, October/2003.

_____. CCPE/GTQC. 2004 – Cenários Mundiais e Nacionais 2004-2014, Brasília, July/2004.

EPE – Cenários Mundiais e Nacionais – Regionalização e Estadualização 2004 – 2014, Rio de Janeiro, 2005.

FEDERAL GOVERNMENT/Interministerial Work Group– Plano de Desenvolvimento Regional Sustentável para a Área de Influência da Rodovia BR-163 Cuiabá – Santarém – Brasília – March/2005.

GODET, Michel 1997 - "Manuel de Prospective Stratégique" - Vol. I: "Une discipline intellectuelle" - Editorial Dunod – Paris.

IBGE – Contas Regionais do Brasil – 2003 .

IPEA. 2005 – “Crescimento Agrícola no Brasil no Período 1999-2004: Explosão da Soja

e da Pecuária Bovina e seu Impacto sobre o Meio Ambiente”, Discussion paper # 1103, Rio de Janeiro, Jul.

_____.Brasil, o Estado de uma Nação. 2005 – “Amazônia: Desenvolvimento e Soberania”. Available at www.ipea.gov.br .

LENTINI, M.; Veríssimo, A. & Pereira, D. 2005. A expansão madeireira na Amazônia. O Estado da Amazônia, # 2. Belém: Imazon. 4p.

MCT/CT Brasil – *Workshop* “Modelos e cenários para Amazônia Brasileira: O Papel da Ciência” www.mct.gov.br

MINISTRY OF NATIONAL INTEGRATION – Estimativa da Produção de Soja na Área de Influência da BR-163, 2005.

_____.Política Nacional de Desenvolvimento Regional - Proposta para Discussão, December/2003.

_____.Regional Programs Bureau – Programas de Desenvolvimento PPA-2004-2007, Brasília, 2003.

_____.Regional Development Policy Bureau – Fundos Constitucionais de Financiamentos, Brasília, 2004.

_____.SUDAM - A Amazônia em Números - CD, 2000.

_____.SUDAM/UNDP – Cenários Sociais para Amazônia Legal 2000-2010 (Projeto BRA 96/025), Belém, 2001.

MINISTRY OF INTEGRATION / MINISTRY OF ENVIRONMENT – Inter-institutional Coordination Commission - Amazônia Sustentável – PAS, volume 1 – Diagnóstico e Estratégia – April /2004.

MINISTRY OF DEVELOPMENT, INDUSTRY AND FOREIGN TRADE /Production Development Bureau – Projeto de Investimento do Segundo Semestre de 2004 – RNAI 2004 www.mdic.gov.br

_____.Production Development Bureau – Anuário Estatístico 2004, April/2005 www.mdic.gov.br

MINISTRY OF ENVIRONMENT/Biodiversity and Forest Bureau – Plano de Controle e Prevenção ao Desmatamento.

MINISTRY OF TRANSPORTS – Banco de Informações e Mapas de Transportes - CD,

2004.

MONTEIRO, C. and Herasme, M. – PIB por unidade da federação: Valores correntes e constantes 1985-1996. Discussion paper, Rio de Janeiro, 1998.

SALATI, E. and FERREIRA, A. “Forças de Transformação do Eco Sistema Amazonas” FBDS, Manaus/Brasília, CNPq, 2002.

SUFRAMA – Indicadores de desempenho do pólo industrial da Manaus 1988 – 2004.

UNDP – Brazilian Human Development Atlas www.pnud.org.br

University of São Paulo / Estudos Avançados 53 – Dossiê Amazôniabrasileira I, São Paulo: IEA, 2005.

_____.Estudos Avançados 54 – Dossiê Amazônia brasileira II, São Paulo: IEA, 2005.

GLOSSARY

Acronyms and Terms Referring to Scenarios

- **BASIC ASSUMPTIONS** – coherent set of hypothesis, information and basic decisions that guide the strategic planning formulation or updating. Based on the analysis of both external and internal environments, basic documents and the Organization's values, the great non-temporal parameters are defined: mission, permanent objectives and management principles.
- **BOTTLENECKS** – are the structural unbalances among variables that interact in a given system or environment (e.g.: gap between services supply and demand).
- **CONDITIONING FACTORS TO THE FUTURE** – these are phenomena or factors that shall define alternative futures, based on the retrospective study and current panorama of the scenerized object, and on a previous analysis on the Global and National Macro-scenarios. These conditioning factors have different typology, according to their inherent visibility and level of uncertainty.
- **CONSISTENCY TEST** – test performed after a scenario is built, aiming at checking for its internal coherence, i.e, if its integral parties are mutually compatible.
- **CRITICAL UNCERTAINTIES** – are the uncertainties concerning the evolution of external factors that cannot be controlled by the organization but that shall significantly influence on the content and implementation of strategic decisions in said organization and, therefore, on the organization's future.
- **EPE** - Empresa de Pesquisa Energética (Energetic Research Company) – established by Law # 10.847 of March 15, 2004 (Decree # 5.184/04) to render services in the field of studies and researches oriented to provide inputs to the energetic sector planning. It is bound to the MME – Ministry of Mines and Energy.

- **FACTS HOLDERS OF FUTURE** – are factors of potential changes in the present time and that may generate relevant trends in the future (e.g.: micro-electronics in the 1970's.)
- **INFORMATION SYSTEMS** – data modeling systems aimed at providing inputs to prospecting studies, besides providing information that allow for following-up and updating the scenarios that have been elaborated. This information is of documental nature (technical and normative); socio-economic statistics; published news; concepts and records concerning facts holders of future, among other categories.
- **INVARIANTS** – phenomena or characteristics of the scenerized object that are believed to be constant along the prospecting.
- **MACRO-SCENARIOS** – are the likely, probable or desired futures for great systems and contexts, gathering and projecting (macro) economic, political, technological, social, environmental trends, among others, in a general and articulated way.
- **ONGOING CHANGES** – stand for transformations that are underway and endowed with great potential of impact but that have not yet produced all the effects on the structure of the object under consideration.
- **OPPORTUNITIES** – current or potential phenomena or conditions capable of providing substantive and long-lasting contribution to the successful performance of the organization (concerning compliance with the Mission, Strategic Objectives, competitive performance, etc.)
- **PATH** – is the route or way followed by the scenerized object along time, i.e., the movement or dynamic of this object, from the initial to the final scenes.
- **PLANNING** – Opposite to improvisation. Systematic anti-improvisation. Process of conceiving the desired futures and what should be done to achieve them.
- **PLAYERS** – public or private entities/organizations, social classes, economic agents, groups or individuals that have or will have significant influence on the

system under consideration, such as companies, political parties, financing agents, technical groups, consumers' entities, etc.

- **PLAYER'S POWER OR HEGEMONY** – is the extent of influence by a player on a given quantity of motive variables. In this sense, the player acts over a given structure of influence and, therefore, has power over the system.
- **PROSPECTING** – systematic reflection aimed at providing guidance to current actions in the light of likely futures.
- **REFERENCE SCENARIO** – stands for the scenario that characterizes the most likely future evolution to the scenerized object when projection is made, and whenever options or ruptures are imposed to the major players.
- **RETROSPECTIVE STUDY** – reconstruction of the historical development of the scenerized object, where major development stages, regulation mechanisms and transformation and inertia factors are identified.
- **ROBUSTNESS TEST** – it aims at checking if a given scenario is plausible (feasible) and to which extent this feasibility strongly depends on specific assumptions or conditions of the system or context.
- **SCENARIO PHILOSOPHY** – stands for the “essence” or “logic” of the scenerized future, i.e., the description of core characteristics that individualize and differentiate a given scenario in comparison to others.
- **SCENARIOS** – Descriptions of a likely, imaginable or desirable future to a system and its context, and the way or path that links it to the initial situation of that system and context. They are useful tools in the participatory strategic planning process to: (a) harmonize the decision-makers' views of future, clearly stating the assumptions that grounded the decision; (b) set up likely developments of the environment wherein the Organization works and the demand for its services; (c) anticipate threats and opportunities for the sector's companies.
- **SCENARIOS DEVELOPMENT** – stage of the scenarios building process where each selected scenario is detailed by: specifying its philosophy; describing the

initial scene; outlining the path; describing intermediary and final scenes; and, robustness test.

- SCENARIOS GENERATION – means the construction, comparison and decision of exploratory scenarios, i.e., plausible settings for the future and further selection of the most likely ones to the system and environment under consideration.
- SCENE – description of the status or situation of a scenerized system and its contexts in a given time, i.e., how actors and situations are organized or linked one another, representing a “cut” in the evolution process of the object under consideration. *Initial Scene*: description of the initial state of the object being scenerized. *Final Scene*: characterization of the state (whether final or intermediary) of the scenerized system resulting from the development path since the previous state (scene).
- STRATEGIC PLANNING – The process of managing a company, of multi-dimension nature and that: (1) establishes a coherent, standardized and integrated decision-making model; (2) sets and discloses the organization’s purpose in terms of mission, long-term objectives, action programs and priorities for resources allocation; (3) selects the businesses in which the organization should participate; (4) tries to achieve long-term competitive advantage (self-sustainable performance) in all of its businesses, being responsive to opportunities and threats posed by the company’s environment and its internal weak points; (5) engages all the company’s hierarchical levels (corporative, business and functional ones); and (6) defines the nature of economic and non-economic contributions it intends to provide to its key clients.
- STRONG TRENDS – perspectives with visible and consolidated directions that allow for envisaging the maintenance of its current path along the period under consideration. In these events, the evolution is predicted with a sound margin of safety (see Pre-Established Elements).
- TENSIONS – are structural conflicts or dispute among relevant players in a given system or environment.

COORDINATION AND TECHNICAL TEAM

GENERAL COORDINATION OF THE WORK

CENTRAIS ELÉTRICAS DO NORTE DO BRASIL S. A. - ELETRONORTE

José Sarto Souza

TECHNICAL COORDINATION OF THE WORK

ELETRONORTE

José Sarto Souza

Nélia Rosa Alves dos Santos

Ícaro da Silva Martins

Marcelo Gomes de Alencar

Zuleica Moura

TECHNICAL TEAM

ELETRONORTE

JOSÉ SARTO SOUZA	- EPEM
ÍCARO DA SILVA MARTINS	- EPEM (CONSULTANT)
JOSÉ BENEDITO INOCÊNCIO	- EPEM
JOSÉ YOSHIZO OFUGI	- EPEM (CONSULTANT)
MARCELO GOMES DE ALENCAR	- EPEM
MARGARETH CARNEIRO MARINHO	- EPEM
NÉLIA ROSA DOS SANTOS	- EPEM
ZULEICA MOURA	- EPEM (CONSULTANT)
FERNANDO GOMES FERNANDES	- EPEM
VANÍSIO DOS SANTOS SILVA	- EPEM
VALÉRIA DANTAS DE FREITAS	- EPEM (CONSULTANT)
VIVIANE ALVES DE SOUZA	- EPEM (ESTAGIÁRIA)
VIRGÍNIA ZERBA GRASSO	- EPEM (SECRETÁRIA)
PEDRO MARRA DE OLIVEIRA	- EPE (INFORMÁTICA)

PARTICIPANTS

ELETRONORTE

CARLOS RASSI	- EMT
DANTE DE CASTRO SIMPLÍCIO	- CCE
GUILHERME BEZERRA LOPES	- EPA
ISABELA DOS REIS COSTALONGA	- EPEE
KÁTIA RESENDE C. COSTA PINTO	- EPE
JOÃO BATISTA MAIA	- EMT
JOSÉ ALBERTO MACHADO	- EROA
JESUS CARLOS DA SILVA	- PPE
JOSÉ WILLIAM DE MEDEIROS	- EPEP
MARCOS BARBOSA DE OLIVEIRA	- PAR / PPE
PAULO CEZAR MOURA LEITE	- FPEF
PAULO RAINER MEINECK	- EEM
RENATO KOVALSKI KAMINSKI	- PPE
SÉRGIO AUGUSTO DE SOUZA	- EEM
SILVIA MARIA FRATTINI G. RAMOS	- EIR
WAGNER DOS SANTOS TEIXEIRA	- CCEF

CENTRAIS ELÉTRICAS BRASILEIRAS S.A. - ELETROBRÁS

HELGUS GENTIL PALHARES
JORGE DE OLIVEIRA CAMARGO
MARLUCE DO R. M. SOBRAL ABREU
RENATA LEITE FALCÃO
THADEU FIGUEIREDO ROCHA

COMPANHIA HIDRO ELÉTRICA DO SÃO FRANCISCO - CHESF

MARIA LÚCIA RIBAS DE FRANÇA

FURNAS CENTRAIS ELÉTRICAS S. A.

MAYSE REGAL MAIA

MÍRIAM TERUMI OKAMOTO

ELETROSUL CENTRAIS ELÉTRICAS S.A.

ANTONIO JOSÉ DE CARVALHO

CESAR GHISI SILVESTRE

ERNESTO STODIECK NETO

MARCO ANTONIO PANIAGUA

EMPRESA DE PESQUISA ENERGÉTICA – EPE

EDUARDO VELHO

RENATO PINTO QUEIROZ

AGÊNCIA DE DESENVOLVIMENTO DA AMAZÔNIA - ADA

ADELAIDE MARIA PEREIRA NACIF

AGÊNCIA REGULADORA DOS SERVIÇOS PÚBLICOS DO ESTADO DO ACRE - AGEAC

FRANCISCO EULÁLIO A. DOS SANTOS

COMPANHIA DE ELETRICIDADE DO AMAPÁ - CEA

ODÍLIO GOES DE MAGALHÃES

CENTRAIS ELÉTRICAS DO PARÁ S. A. - CELPA

VANJA GATO MEDEIROS

JOELTON ABDON

COMPANHIA ENERGÉTICA DO MARANHÃO - CEMAR

FERNANDO MENDONÇA

IVALDO ARAÚJO ANDRADE

CENTRAIS ELÉTRICAS MATOGROSSENSSES S. A. - CEMAT

MIRIAN DE LOURDES GOMES DA SILVA

SAULO ROBERTO S. REIS

CIA DE ENERGIA ELÉTRICA DO ESTADO DO TOCANTINS - CELTINS

ROGER AKIO KITAMURA

CENTRAIS ELÉTRICAS DE RONDÔNIA S. A. - CERON

FRANCISCO FERNANDES BASTOS NETTO

ROSANA APARECIDA DOURADO

COMPANHIA VALE DO RIO DOCE - CVRD

ROSIANE SOUZA

COMPANHIA DE ELETRICIDADE DO ACRE - ELETROACRE

MARIA APARECIDA DOS SANTOS

FEDERAÇÃO DAS INDÚSTRIAS DO ESTADO DO AMAZONAS - FIEAM

RAIMAR DA SILVA AGUIAR

FEDERAÇÃO DAS INDÚSTRIAS DO ESTADO DO MARANHÃO - FIEMA

MARCO ANTONIO MOURA DA SILVA

PETRÓLEO BRASILEIRO S. A. - PETROBRÁS

CARLOS EDUARDO SAROBA

JOÃO CARLOS SOUSA OLIVEIRA

SECRETARIA ESPECIAL DE INTEGRAÇÃO REGIONAL- SEIR - PA

CARMEN LÚCIA VALÉRIO CAL

SECRETARIA EXECUTIVA DE INDÚSTRIA, COMÉRCIO E MINERAÇÃO - SEICOM

RENATA PIQUEIRA DE A. SAORES

SECRETARIA DE ESTADO DE PLANEJAMENTO E DESENVOLVIMENTO ECONÔMICO SUSTENTÁVEL - SEPLANDS-AC

NADMA KUNRATH

MONTCLAIR STATE UNIVERSITY

PROF. ROLF STERNBERG

FRANCES R. STERNBERG

UNIVERSIDADE FEDERAL DO PARÁ - UFPA

PROF. UBIRATAN H. BEZERRA