



**FUNDO
AMAZONIA**



The Amazon under debate:
opportunities, challenges
and solutions



 **BNDES**

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Message from the President



The BNDES has taken on a considerable institutional responsibility as manager of the Amazon Fund. Such responsibility means to be compatible with the trust of national and international donors through safe and efficient management of the wide array of resources available. Demonstrating the ability to manage efficiently is essential to broadening the scope of donations in order to devote more resources to projects that result in tangible benefits for the region.

The legitimacy of the Amazon Fund stems from extensive dialogue with society. Its guidelines are set by a guidance committee, chaired by the Minister of the Environment and which comprises representatives of civil society, the public sector and people and institutions located in the region.

We have major challenges to overcome. There is no room or time for experimenting. Urgent matters presented in light of current global climate change are evident. Therefore, fostering efforts that contribute to environmental conservation, ensuring minimal balance within the planet's ecosystems – for future generations – has become much more important than just another item in the public agenda. I would say the environment is the main issue on the new development agenda. And it is Brazil that must assume a more decisive leadership role in this process.

We, from the BNDES, understand the importance we have, as a development bank, in building a benign model of growth, and we are ready – both with the necessary financial instruments and with the joined forces of the Bank's staff – to collaborate with the Brazilian government in favor of sustainable social development in the Amazon. The private sector, in its turn, must take on a relevant position in this new form of development and should be aware of its social environmental responsibility through investments and sound efforts.

Understanding the richness and complexity of the vast Amazonian territory requires clear vision. With no illusions or dreams. The prevention policy, which includes the use of a Brazilian satellite tracking system that maintains some control over deforestation, is necessary, but does not solve the problem. Only the creation of sustainable economic activities can contain the predatory drain on natural resources.

In this context, investments in research, development and innovation are essential for purposefully generating knowledge needed to implement new business models that can generate income and decent economic employment for the Amazonian populations.

We must squarely face the challenges posed by forest degradation in highly populated regions and by irregular use of soil, often affected by cattle-raising, producers of pig iron, logging companies and soybean producers. Firm regeneration policies and efforts, as well as serious changes to business models and mindsets must be designed and implemented without delay.

For that reason, responsibly-conducted intellectual creativity will be welcome in the pursuit for solutions to the conflict between the need for socioeconomic support and for environmental sustainability, which involves the fate of some 25 million people in the Amazon.

Of course, this vast population needs income. However, owing to a lack of feasible alternatives, they conduct predatory activities that are detrimental to the forest. The challenge is to replace these activities with other competitive pursuits, ensuring the conservation of the largest rainforest in the world. It is a real challenge, and the Amazon Fund faces the reality of investing in a region where only 14% of the land is legally owned.

Consequently, the strategy for the region cannot depend on isolated efforts. Understanding the diversity of the Amazon, as well as making concerted and coordinated efforts, is undoubtedly a huge struggle. The region requires a wide-ranging and all-encompassing policy, but above all it must be operational, practical and effective!

In this vein, the BNDES and its Environmental Division (AMA) will spare no efforts in using the Amazon Fund as a tool to generate effective results, capable of promoting a new sustainable model of environmental development in the region.

Luciano Coutinho
President of the BNDES

Presentation



The texts that have resulted from transcribing the discussions held at the BNDES during the brainstorming sessions on the Amazon Fund are pleasant to read, yet provocative. They clearly portray the creative and candid mood that permeated throughout the discussions. It was a pleasure to watch a team of experts on the environment dialogue on issues and proposals for the Amazon in an organized, methodical way and with mutual respect. Transcripts of the talks recapture the quality and depth of the discussions perfectly.

The period in which the seminars were convened heralds back to a moment in the history of the BNDES – when it was appointed the manager of the Amazon Fund, an instrument designed for raising donations to be invested in reducing deforestation. It was also when a division exclusively dedicated to the environment was created at the BNDES. Once again, the Bank has been called upon to carry out a mission for the State at a crucial moment for the country, when the nation is under global watch due to its responsibilities regarding the preservation of tropical forests.

The Bank's efforts in the environmental area are not new, as we have had a department dedicated to the environment, providing support to operational areas on environmental issues and the development of new programs, since 1989. These 20 years of work will now be expanded with the Environmental Division, offering the manager of the Amazon Fund not only traditional support and policy-making, but also market operations in what is known, today, as *green finance*.

An example of achievements already made in this field is the creation of the BNDES Forest Compensation Program, whose goal is to foster the restoration of damage to legal reserves in rural properties earmarked for agribusiness, and thereby contribute to the preservation and appreciation of the native forests and ecosystems that remain. Also created was the Private Equity Investment Fund, aimed at forestry assets, with a previously selected manager and from

which investments are expected to reach up to R\$ 1.5 billion. Another initiative announced by the BNDES and by BM&FBovespa, at the United Nations Conference on Climate Change (COP 15), in 2009, was the development of the IBRX-50 – Proxy Carbon Efficient Index, designed to encourage publicly-listed companies to reduce their greenhouse gas emissions.

The fact that the management of the Amazon Fund was attributed to the BNDES made panelists optimistic concerning not only the new possibilities expected to stem from dealing with these issues in the region, but also the Bank’s institutional weight and the experience of more than 50 years developing the country. The results have already begun to emerge. At the end of 2009, the BNDES approved the first five projects that will receive funds from the Amazon Fund. In total, some R\$ 70.3 million will be disbursed to prevent and contain deforestation, to survey environmental and rural property data, and to restore degraded areas. The supported projects were submitted by the Sustainable Amazon Foundation (FAS), the Amazon Institute of People and the Environment (Imazon), the Nature Conservancy in Brazil (Brazil TNC), the Ouro Verde Institute and the Brazilian Biodiversity Fund (Funbio).

Reading the debates is a great introduction to the major environmental problems in the Amazon region and the country, and they will appeal not only to those responsible for making public policies, but also to those who wish to know more about the Amazon. Developing an economy within the tropical forest that is a feasible alternative to economic activities that generate deforestation is a considerable challenge.

For the BNDES, panelists raised the issue that the Banks’ efforts must go beyond those of managing a fund designed to contain deforestation. They assigned it the challenge of making sustainability the core of its developmental duties.

Eduardo Rath Fingerl

Managing Director of the Environmental Division of the BNDES

Introduction

Cultivating ideas to understand the Amazon

The Brazilian Development Bank (BNDES), manager of the Amazon Fund, invited academics and experts on the environment to contribute ideas aimed at developing, conserving and preserving the Amazon region. The proposal of the BNDES' Environmental Division arose as part of efforts to structure the Amazon Fund, created in August 2008, through Decree N°. 6,527, which bestowed the responsibility to manage it on the BNDES.

Three meetings were held between Bank staff, specialists in the sector, and experts from the Amazon Region. The plan was to open the debate on the Fund's performance in order to obtain an array of information and perspectives on the issue that could help structure guidelines aimed at achieving the set goals. In discussions, the word 'sustainability' took on historical semantics, encompassing social, economic, cultural and ecological issues.

Understanding and analyzing the Amazon are exceptional tasks inasmuch as its dimensions, complexities and challenges. As a fund manager with prospects of becoming one of the major global instruments for Reducing Emissions from Deforestation and Forest Degradation (REDD), the BNDES engages the intelligence of its staff and sector experts, who were called upon to contribute with suggestions for the construction of a new development model in the region. There are not only problems that require decisions to solve them, but also issues awaiting solutions.

This book is the result of discussions that took place over the three meetings held in the BNDES' headquarters, in Rio de Janeiro, between April and June, 2009, on different issues in brainstorming sessions. Each meeting lasted an average of eight hours, with similar structures, but assumed a distinct pace that varied according to the dynamics of the discussion and the profile of the panelists.

Between consensus and some differences, the idea that prevailed in the three meetings was that the centralized planning model, which addressed the Amazon as a homogeneous region, is outdated. Debate concurred on the finding that there are several Amazons embedded in the North of the country, with distinct peculiarities, that therefore require different efforts and solutions, which should be adjusted to the specific characteristics in each region.

The option to diversify topics was aimed at obtaining the broadest possible results, that is, covering a wide range of issues linked to the Amazon, being careful to maintain an integrated approach to problems in the region, including socioeconomic and ecological processes, as well as those related to science and technology. The goal, as shown in the following pages, was successfully achieved.

Invited to the first meeting were 11 specialists on environmental issues, all with different profiles and approaches, in many cases with diverging opinions on the Amazon. Hence, the meeting was more general in nature. Debate centered on the region covered by the Fund in order to map out its diversity and, especially, its challenges.

There was talk about land ownership and putting land titles into order (land regularization), land use planning (zoning) and the need for reflection on long-term sustainability and for instruments to negotiate environmental preservation and access for the population to a basic public system. Investments in infrastructure were considered key to integrating the region, but must go hand-in-hand with a global vision of development, including the conservation of natural resources.

How to deal with these issues?

The second meeting resulted in a more objective framework. The board of directors of the BNDES invited experts in science and technology related to the environment, as it is one of the main priorities for the Fund's investments. The aim was to obtain information needed to develop strategies to support the sector.

Succinctly, the outcome of the meeting was the perception of the importance to generate knowledge on the region and consolidate this information into a database to enable decision-making; to establish intellectual capital in the Amazon; to make genuine and effective

efforts towards transforming knowledge into practical initiatives; to add value throughout supply chains; and to create procedures to use these technologies.

The third and final meeting at the BNDES included representatives of civil society from the Amazon Region, the population living in the forest and along the rivers, in addition to academics dedicated to the culture and social aspects of the region. They discussed socioeconomic issues, essential for addressing the challenge of integrating development and the environment in an area that has biodiversity, valuable resources, harsh conditions and potential, involving communities with diverse values.

The president of the BNDES, Luciano Coutinho, opened the meetings reaffirming the commitment of the Bank to the environmental issue and the promise to consolidate strategies for the Fund that will result in effective undertakings in the region. Those that participated in discussions included the managing directors of the Venture Capital, the Environmental and Capital Markets Divisions, Eduardo Rath Fingerl, along with João Carlos Ferraz, the managing director of the Risk Management, Economic Research, and Planning Divisions. The deputy managing director of the Environmental Division, Sergio Weguelin, accompanied discussions throughout the day with his team, including operational heads, Eduardo Bandeira de Mello, Cláudia Costa, Márcio Macedo and Otávio Lobão.

Run by the deputy managing director of the BNDES' Human Resources Division, Paulo Faveret, the meetings were dynamically structured so that ideas could flourish. Faveret asked participants to concentrate their efforts on: pointing out opportunities, challenges and solutions for the Amazon issue, and avoiding the classic descriptive approach, consisting of diagnosis, evaluation and trends.

In the opening of the series of meetings, Luciano Coutinho stressed the importance of the sequence of brainstorming sessions and mentioned some of the major challenges in the region that require a solution. For example, for years, the existing population that needs income to survive has been engaging in activities that are detrimental to the forest.

Given this reality, the real and complex challenge that lies ahead of the BNDES is to seek out sustainable economic alternatives to replace those currently in practice, many of which

are predatory, with other sustainable and competitive activities, capable of putting a stop to deforestation. The Fund is one of the instruments to achieve that goal.

“We have to make the most of the intelligence of those who have experience, those who have studied the issue so we can face such a complex challenge. This just underpins the importance of this series of debates with you all,” said Coutinho.

The following pages contain a summary of the three meetings that were held on April 14, May 6 and June 24, 2009, in the BNDES’ headquarters, in Rio de Janeiro. We have opted to follow the dynamics adopted in the meetings in order to provide the reader with a true picture of the debates. For this reason, the texts have been summarized and edited, but keep the colloquial tone that permeated discussions throughout the day.

Earmarked for non-reimbursable financing projects that contribute to preventing, monitoring and combating deforestation, the Amazon Fund was conceived as an instrument that will also contribute to the sustainable use of the Amazon biome.

The reduction of deforestation and the conservation and sustainable management of forests are unmistakable opportunities to obtain immediate climatic benefits.

The carbon stock for the world’s tropical forests is estimated at about 100 billion tons, equivalent to twice the total amount accumulated in the atmosphere. The Amazon Forest stretches approximately 5.5 million square kilometers, of which close to 60% is on Brazilian territory. The area comprises 33% of the world’s tropical forests and around 30% of the known species of flora and fauna. Each year, it releases more than seven trillion tons of water into the atmosphere through evaporation and transpiration from vegetation.

The guidelines of the Amazon Fund are established by a Guidance Committee (COFA). The Committee is also responsible for monitoring results, ensuring the trustworthiness of the initiatives supported by the Fund, as well as guaranteeing the application of resources in accordance with the goals, commitments and policies of the Plan to Prevent and Control Deforestation in the Legal Amazon (PPCDAM) in addition to the strategic programs within the Sustainable Amazon Plan (PAS).

COFA is a tripartite committee formed by the federal government, state governments and civil society. Each block is entitled to one vote in the deliberations, and each member has the right to one vote in its own block.

The Amazon Fund also has a Technical Committee, appointed by the Ministry of the Environment (MMA), whose role is to certify emissions stemming from deforestation in the Amazon.

Besides this, the Committee assesses the methodologies for calculating the area of deforestation and the amount of carbon per hectare used in the calculation of emissions. After consulting the Brazilian Forum on Climate Change, the Committee now has six leading technical-scientific specialists appointed by the MMA for a term of three years, which may be extended for a further period.

The priority given by the BNDES to sustainable development, present both in the management of its shareholding participations and in its criteria for granting loans to investments, resulted in the creation of the Environmental Division in early 2009.

The new division, in addition to being responsible for managing the Amazon Fund, provides the Bank with the necessary tools to fulfill its environmental agenda. The BNDES is also in charge of fundraising for the Fund, defining the financed projects, and monitoring the progress of each one.

The team's initiative to hold meetings to hear opinions and suggestions, besides identifying challenges related to the region, reveals the type of management that the Bank wishes to apply to the Amazon Fund. In a word, transparency, which implies being accountable for achievements and maintaining an open channel of communication with civil society and governments.

The results of these events would not have been the same without the internal partnership with the Human Resources Division and with the Office of the Presidency, which made it possible for Paulo Faveret and Mônica Magnavita to take part.

Since the birth of the proposal, both Paulo and Mônica demonstrated competence, enthusiasm and dedication to take on, respectively, the innovative leadership of the debates and the tasks of compilation and editing, which resulted in the publication of this book. To them, the Amazon Fund offers a tribute and acknowledgement.

Coordinators of the series of meetings



Paulo de Sá Campello Faveret Filho

Economist with a master degree in Economics from UFRJ, Executive MBA from Coppead-UFRJ, an economist at the BNDES since 1992, professor at the Candido Mendes University and IBMEC-RJ, former chief adviser of the Executive Board of the IDB for Brazil. Current Deputy Managing Director of the Human Resources Division of the BNDES.



Sergio Eduardo Weguelin Vieira

Economist, graduated from the Universidade Candido Mendes, with a master degree in Political Economy from the New School for Social Research, in New York. He was commissioner of the Brazilian Securities Commission and is currently Deputy Managing Director of the Environmental Division of the BNDES.



Claudia Soares Costa

Economist, graduated from the Universidade Federal do Rio de Janeiro, with a management (PDG-Serviços e PDG-Exec) and academic specialization in Urban Economics (Bennett) and a master degree in Corporate Social Responsibility from the University of Barcelona (CIES), in Spain. At the BNDES since 1985, she has held a number of executive positions and is currently head of the Management Department of the Amazon Fund, which is part of the BNDES' Environmental Division.





Meeting I

Participants



Adalberto Luis
Val

Biologist, researcher in the field of biodiversity and adaptations to the environment. Director of National Institute for Research on the Amazon (INPA) and head member of the Brazilian Academy of Sciences.



Carlos Eduardo
Frickmann
Young

Economist at UFRJ, Graduate in Public Policy from Cepal, MA in Economics of Industry and Technology UFRJ, Ph.D. in Economics from London University and post-doctorate from Oxford University. He works in the environmental area.



Fabio Feldmann

Environmentalist, executive secretary of the São Paulo Forum on Global Climate Changes and Biodiversity. First president of the SOS Mata Atlântica Foundation. Awarded the UN Global 500 award. He works in the environmental area.



Guilherme Dias

PhD in Economics from USP and head Professor at the School of Economics and Management at this university. His research includes areas of agrarian economies and natural resources.



Mário Ramos
Ribeiro

PhD in Economics from Economic Research Institute, USP, specializing in economic theory applied by Cepal. He is a consultant in the areas of environmental economics, antitrust and economics, as well as corporate finance. Full professor at the University of Amazon.

Challenges for the sustainable development of the Amazon



Roberto Waack

Biologist with a Master's in Business Administration from the School of Economics and Business Administration at USP, and chairman of the international board of the Forest Management Council and the Advisory Board of the Institute for Responsible Agribusiness.

Sérgio Besserman

Economist and environmentalist, Professor of Brazilian Economics at PUC-Rio, an official licensee of the BNDES, a member of the Board of Directors of WWF-Brazil, Chairman of the Technical Chamber for Sustainable Development and Metropolitan Governance in Rio de Janeiro and former president of the IBGE.

Sérgio Abranches

Master's in Sociology from the University of Brasilia, PhD in Political Science from Cornell University, Ecopolitics commentator on Radio CBN. He writes about the environment for the Eco site, and is a visiting professor at the Coppead Institute of UFRJ Administration.

Sérgio Leitão

Lawyer specializing in social and environmental law. Director of Public Policies at Greenpeace. He was executive director of the Socio-Environmental Institute, in São Paulo, special advisor to the presidency at Funai, and advisor on indigenous affairs.

Tasso Azevedo

Forestry Engineer, consultant to the Ministry of the Environment on forests and climate changes, and a board member of the Amazon Fund Committee – he participated in its preparation. He was the first director-general of the Brazilian Forestry Service and former executive secretary of the NGO Imaflora.

Virgílio Viana

Forestry Engineer, Ph.D. in Biology from Harvard University, with postdoctoral studies in Sustainable Development from the University of Florida, director general of the Sustainable Amazon Foundation, full professor in Forest Sciences, at the University of Agriculture Luiz de Queiroz.

The first meeting brought together academics and experts in the environmental field to discuss the issue “the Amazon Region.” Brainstorming was structured in four steps to create an environment that encouraged the exchange of ideas as if it were a conversation among friends, yet governed by a framed premise under the guidance of the moderator, Paulo Faveret. Conducting the debates gave rise to the uninhibited presentation of proposals, but in an organized and methodic fashion.

In the initial one-hour session, participants were asked to submit two ideas considered fundamental to the Amazon matter in order to elicit a large number of opinions that were relevant to the select group of experts, avoiding issues specifically related to the Amazon Fund. The proposal was to broaden the discussion by addressing aspects involving the entire region.

The next stage had a more specific focus. Participants were to identify the main challenges for the Amazon, and their critical factors, in areas deemed the most important for sustainable development in the region.

The third round was on the driving forces and aspects of success were presented, aiming at finding solutions to challenges that had already been mapped out. The aim was not to construct a BNDES policy or a business plan for the Amazon fund, but rather to expand the knowledge on the subject. Many of the solutions suggested were outside the scope of the Bank, but are transcribed in the book to outline gist of the proposals put forth in the debates.

In a series of rapid fire answers, the final presentations were given greater freedom, with contributions and suggestions from each participant, yet with no previous guidelines. Such freedom, however, did have one rule: comments should be strictly personal. No matter what the national and international studies on the subject indicate, nor what the world thinks about the subject – the goal was to hear what that specific group, invited by the BNDES because of each participant’s background in the environmental field, had to say.

There was significant agreement on issues during the debates and, throughout the day, seven issues stood apart.

Main Issues

1. *Land Title Regularization (putting land titles into order)* – An instrument for State efforts; command, control; enforcement of the law. Economic causes of deforestation. Land title regularization with intangible capital.
2. *Governance* – Implementation of effective governance in the Amazon, articulating with the federal government, including the judiciary branch and the Public Prosecutor's Office. Need for legal framework and innovation in addressing the Amazon. Restoration of the federal government's competence to oversee management of the Amazon forest, reducing bureaucracy and increasing the effectiveness of public policies. Synchronization of State efforts.
3. *Integration* – The country has not yet been able to put forward an agenda for integration; yet, it demands this from the region. What is wanted from the Amazon? It is clear what is not wanted, but what is not clear is what is being offered to the region.
4. *Science and technology* – Development, innovation, technological fine-tuning and incorporation of technology, as well as importance in the various fragmented production chains in the region, such as lumber. Strengthening the scientific system in the region, which requires efforts such as integration with international institutions, creating the Forest Science program and transforming the 'deforestation belt' into the 'sustainable development belt'.
5. *Education* – Elementary education, basic training of human capital. Suitability to local reality, cultural and environmental compliance, and efforts towards improving the low level of education.
6. *Permanence of researchers* – the need to create incentives to encourage specialists to stay in the region.
7. *Sustainability* – Integration between modern sectors, from agribusiness to sustainable development.

Besides corresponding issues, others, such as the carbon market, productivity gains, tackling intraregional imbalances, the economy of the standing forest, and financing for sustainable businesses were addressed as important issues for the region.

► The Amazon Fund – the only large-scale REDD mechanism

Tasso Azevedo – I'll talk a little about the origin of the Amazon Fund, and the context in which it was created. There is a global discussion on the implementation of REDD mechanisms (Reducing Emissions from Deforestation and Degradation, which means reducing the emissions derived from deforestation and degradation), which is basically the idea that the lessening of deforestation and forest degradation reduces a large source of greenhouse gas emissions. As this helps mitigate emissions, it may prevent a two degree rise in the planet's temperature.

The proposal was made in 2005 during the Conference of the Parties, at the COP in Montreal, and since then, besides the attempt to create regulation to include the climate issues in the agreement, there are proposals to adopt mechanisms that could result in initiatives capable of generating REDD mechanisms.

In Brazil, the experience in implementing the plan to prevent and combat deforestation in the Amazon, together with efforts made by states, civil society etc., led to a reduction in deforestation and, hence, emissions.

For the model of the Fund, a relatively simple mechanism was created. Based on data generated by Prodes / INPE, we compared the deforested area in a given year with the 10-year historical average, from 1996 to 2005. This historical average is revised every five years. The outcome is a difference in hectares which we turned into tons of carbon, using a modest base of 100 tons of carbon per hectare. With this, we determined how much was not emitted in a given year. From there, contributions are sought of about US\$ 5.00 per carbon tonne not emitted.

The idea is to raise funds, in a unified manner and on a large scale, to invest in the continuity of policies to combat deforestation and to encourage the sustainable use and conservation of the forest, by means of a calculation which is this carbon tonnage multiplied by an amount in cash. This is REDD's only implementation mechanism today on this scale.

► Transparency and credibility

Sérgio Leitão – There is a driving issue, which is credibility. It seems to me to be the main issue for the success of the Fund. Why do I use the word “credibility”? Because the Fund comes from the idea that Brazil has a duty that is being fulfilled, which is environmental preservation.

But this duty will not necessarily continue to be fulfilled. I say this based on a series of initiatives, especially from the federal government, such as the recent provisional measure* on the land issue in the Amazon, allowing a wide expansion of land concessions and legalization of false or illicitly attained land titles. The MP was prepared without any kind of discussion with society to weigh up its consequences. It was passed in agreement with forces that do not advocate the higher position concerning the Amazon.

There is also a return to the construction of highway BR-319, Manaus-Porto Velho, a tragedy for the country in economic and environmental terms. There is an announcement of another MP to facilitate licenses for works started back in the time of the military government and not concluded, with the goal of creating a kind of fast-track for this type of environmental licensing.

So, if the Fund navigates in this uncertain environment, in which the environmental issue is always seen as an obstacle to be overcome, it may be that the moments of respite, such as Norway’s donations to the Fund, are not repeated. Therefore, my concern is, fundamentally, to know what conditions we will have to keep arguing in favor of Amazon Fund donations from countries or whoever.

There is a great lack of harmony between the environmental area and other areas in the government, which calls into question the issue of the country’s credibility to continue receiving these donations. That’s the challenge that I’d like to pose for us to evaluate and consider.

* Provisional Measure 458/09 was put together to deal with the land title regulation in the Legal Amazon. The objective is to regulate properties of up to 1,500 ha, which, up until then, did not follow a standard in land occupation. The areas protected as land that has been occupied illegally in Permanent Protection Areas are not subject to regulation, nor are indigenous lands that are demarcated or not, and national forests (Editor’s Note).

► Importance of knowledge

Sérgio Besserman – As an employee of the Bank, I can properly measure the tangible and intangible significance of creating the Environmental Division. The decision is of extraordinary importance, great merit, which will also make the Amazon Fund’s initial appeal more relevant.

If someone were writing a book 15 years ago on an agenda for Brazil, this book would have a chapter entitled “The environmental agenda.” In 2008, writing a book with an agenda for Brazil and having a chapter called “The environmental agenda” would be ridiculous. We are living in other times. “Sustainable development” is the name of the business; that is the name of the game.

The future of the BNDES and Brazil, from the standpoint of what its development and its position in the world will be like, will be decided in a fierce competition, which requires vast strategic foresight, because the new parameters have not yet been given a price. The name of the game is “sustainable development”, even if we are still unsure how it will be possible. This is the future of BNDES; this is the future of business. This is not an item on an agenda, but one that will decide what Brazil will be like tomorrow.

As for recommendations, there is a micro and a macro. The micro has already been established here by Mr. Sérgio Leitão: widespread transparency to secure credibility, ears wide open, to learn from those who work, those who have been at this for a long time.

The macro is as follows: we are in a world of profound and rapid transformation. The structure for relative prices in the global economy will change dramatically in coming years, both because of what will happen with the energy grid, and because of the increasing cost pricing of environmental services, currently used as public goods.

The Amazon is a very important part of this, both for what it represents to Brazil and for the stock of carbon. Therefore, I insist: there is need for knowledge, but a great deal of knowledge. Holding these meetings here opens the issue up to the world, something that the BNDES has always done. And we must monitor what is going on, and negotiations regarding climate changes that will steer the market that we work in will change relative prices throughout the economy, not just those relative to the Amazon.

In short, we must be up-to-date on what will happen in the world in the coming years, so that this organization, the BNDES, can maintain its main value, which is the intelligent flexibility, adaptability, the capacity to change, that which Darwin would call “what it takes to survive”, and in order to be ready to carry out the moves at the pace needed.

► Zero deforestation and improvement of the IDH

Sérgio Abranches – First, I totally agree with what Sérgio Leitão said. Next, I agree with everything Sérgio Besserman said and will try to complement it with some ideas. I start with the following: which is the prevailing view of what the Amazon is today, from the point of view discussed here?

Overall, the Amazon is a climate, and a climate related to the Amazon is deforestation. The Amazon has a relatively large population – though not on a national scale, of people with a low human development index [HDI], a situation made worse because it has remained stagnant over the expansion of the economic scope for the region. This means that the expansion has not generated wealth or value for the Amazon.

From an economic perspective, the Amazon is a border and, therefore, it is an area of low cost and with a lack of law enforcement. If the Fund is to be a change of standard, this will depend on its concrete effect. If there is no change in foresight, there will be no change of standard, and in that respect, credibility is key. So too is the change of foresight fundamental, so that there is effective progress in governance mechanisms capable of ensuring sustainable and permanent low deforestation.

The only possible goal is zero deforestation. I do not believe in any partial goal of deforestation. The goal, the objective, the foresight, the focus must be zero deforestation. The Amazon does not generate value if it is cleared, any tree thrown away does not generate value.

Second, putting an end to deforestation must be accompanied by increases in the HDI in terms of income, education and health. The fundamental change in standard is to transform this framework of lawless low profitability, as well as this extensive and primitive extraction, into a movement of high profitability, increasing the educational density, scientific density,

technological density and productivity in the region's economy. Which means that: nothing there is of much worth.

I was publicly critical of the decision to bring the Amazon Fund to the BNDES, initially. And I will say clearly why. Because the BNDES, to me, had separated itself from the environmental issue.

Today I am a supporter, because at the moment that the Bank creates an operational area for the environment and places, as stated by president Luciano Coutinho, this area in the center of the decision-making process, it takes on a foresight of what the Amazon will be in the future without deforestation. An Amazon with a structure of activities that the BNDES knows how to promote.

If the BNDES now has a core environmental understanding and uses its know-how to develop scientific and technological companies to increase innovation, creativity, profitability and productivity of businesses, I think that, yes, then we will have a powerful tool to bring about a change in standards in the Amazon. But it is important that the Bank uses its autonomy, as a State mechanism, because there are serious contradictions in the government.

► **Brazil could lead the development of forestry economy**

Roberto Waack – I fully agree with the three Sérgio's, who preceded me, and I emphasize a less macro outlook, more focused on implementation.

The concept to create an economy for the tropical rainforest is essential, since it takes up half of our country. There are highly developed forest economies on the planet. In the northern region, there is a kind of idea that the temperate forest is different from the tropical rainforest and that, therefore, a number of concepts adopted in temperate countries would not be applicable here.

I have many doubts about this. Evidently they are different forests, but the Scandinavian countries, Canada, the US manage to have a forest economy with a forest that is far less productive than ours. A highly inclusive economy from a social point of view, which promotes

not the outlook of development associated with growth, but the foresight of development associated with a much more balanced well-being than in other parts of the planet.

Brazil has everything to be the country that might lead the development of an economy of rainforest. In my view, on three pillars.

The first of these pillars is the multiple use of the forest. We cannot focus the outlook of the forest on the lumber viewpoint, although logging is part of our sustainable management processes with traceability, low impact and large scale. The richness of this area is immeasurable. There are elements of knowledge that can be quickly incorporated, which unfortunately does not occur. And of course there is the issue of environmental service, but not restricted to carbon. The area of environmental services is extremely far-reaching.

The second pillar would be related to the value chain issue. It is not possible to structure a forest economy based on the sale of raw materials. We must go beyond the value chain. I often joke that in organizations that trade forest products, especially in Europe, the owners of these organizations typically own a Porsche Cayenne, which in Brazil, costs about US\$ 160,000.

Here, we are used to saying that this is an economy that cannot stand upright. Certainly there is value, but we're not capturing it. We need to take control of this value, which is linked to our ability in industrialization, in processing these products in an intelligent way.

For this, innovation is absolutely essential, with the adaptation of technology coming from this existing forest and from temperate forests, combined with what Brazil already has in terms of capacity for technological development. To go beyond the simple trading of raw material. Reiterating, capturing value.

The third pillar is the issue of social inclusion related to two elements: one is specific training in education, vocational instruction. We're not talking about a generic educational system, but rather a model that incorporates the reality of the forest, which we do not have. Again, the forest occupies half of our country, and we do not have an educational system that incorporates this reality.

There is another element which is the issue of governance, social organization, social networks and a commitment to the people living in this region so they can advance their

relations with the rest of the country. Especially those more advanced models of governance that incorporate rather interesting elements of informality that go beyond mere red tape.

These are the three points that I find important to incorporate not only aiming at the Amazon Fund, but, more broadly, considering the tropical rainforest.

► Paths to keeping the forest standing

Adalberto Luis Val – I would like to start by counter-arguing some of the positions that have been raised here. However, please remember that, first and foremost, the Amazon accounts for about 8% of Brazil's GDP, but receives only 2% of the investments made in science and technology of the total applied in the country.

As it contributes with 8% of GDP, it is quite distressing to say that “nothing in the region is really worth anything”, if we want to stick just to the numbers of economic interest, but the Amazon is much more than that: it is environment, it is culture, the people of our people, it is information on the environment and its dynamics, on biological diversity.

The society living in the region has been protecting and living with the forest since the beginning of time. We must not forget this. Embedded in this society is very important traditional knowledge that can leverage many of the efforts contemplated here.

I also disagree with the construction of the highway [Manaus-Porto Velho], but the Brazilian government, Brazilian society to-date has not said how much it wants to invest to integrate this region to the rest of the country. When someone becomes seriously ill there, you need to take a plane and pay an exorbitant cost to come and be seen in the more developed regions of the country. Why don't we think the other way around?

The same issue is present in investments in electric power and in communication. The Internet today in the Amazon is still critical. In the state of Amazonas, for example, the link for all participants of the RNP (Brazilian Teaching and Research Network) is 20 megabytes per second in total, while in several regions of Brazil that same link is in the range of gigabytes per second. So we have another topic for reflection.

Entering the specific aspect of the proposed approach, I emphasize that this is a matter of scale. I have constantly insisted on this. We're talking about 60% of the Brazilian territory, but thinking about 2%, maybe 5%. We need to think big: that is, 60% of the Brazilian territory.

In addition, the Amazon is not only Brazilian, but extends to all countries in the northern regions in South America, and it is also a little bit European. We have a European State in the region, French Guyana. Today the French government invests heavily in science and technology in Guyana and seeks cooperation with the Brazilian government..

A second point, we are talking about a region that is not homogeneous, and it is extremely reckless to compare it to the Canadian or American forests. We have environmental and biological diversity which survive because of the intricate relationship that exists between them. If we reduce this, the very diversity will be lost and with it the relationship of our people with the forest itself, thus threatening the socio-cultural diversity in the region.

There are 25 million Brazilians living in the Amazon today. Ten million people get by with no access to electricity. This is one issue. The other matter is conflict. We invest heavily in the production of satellites, a legal framework for enforcement, but almost nothing has been invested in the social inclusion process. Such a situation is the foundation for conflict. How do we solve this?

There are several interesting ways that can facilitate the maintenance of the standing forest, which is what we seek. One of them relates to investments in production chains. Our president, Luciano Coutinho, mentioned the issue of aquaculture. We have fish in the Amazon that can grow 15 pounds a year and we have no supply chain to take advantage of it.

Another comment concerns the issue of human resources for education, science and technology. There's no use talking about science and technology if we do not have qualified human resources in the region. We need to create a national task force to educate people, at the level of Masters and Doctoral degrees, so they will be capable of thinking about the Amazon and new legal measures to secure human resources in the region. Therefore, it is necessary to create more flexible ways to take trained staff to the Amazon and keep them there.

Without this, I cannot see any lasting effort in the region that could facilitate its sustainable development. The laws that put a fence around the Amazon are not intelligent. Why? Because today you can buy and access any biological resource from the region, anywhere in the world. Therefore, we must get there first; we need to look into what we have there and access information that already exists in the region, through traditional knowledge, through institutions that are in the region.

► Financing mechanisms for the region

Carlos Eduardo Young – At this table, it's hard to be original amidst so many important people. So, sorry then if I sound a little repetitive. The first major problem that I point out is the inconsistency of public policy that bolsters the region.

There is no use imagining that the Amazon Fund will solve regional problems when we know that the allocation of funds to agriculture from both the Central-west's and the North's Constitutional Funds is higher than what the Amazon Fund will be able to raise in one year. There are institutions that want to improve this allocation and cannot.

The main significance of this meeting at the BNDES is that there is finally a heavyweight to speak on behalf of the environment. If the Bank, with the influence it has on a federal level, manages to create a bit more consistency when formulating development policies, this will be a big step forward.

Many have already mentioned the issue of inconsistency in public policies in relation to the environment. Therefore, I will stick to one specific aspect. We have been discussing yet another financing mechanism for the region.

As Adalberto [Luis Val] has just said, there is a chronic lack of investment in infrastructure and modernization in the Amazon. At the same time, we need to reduce its economic dependence on transfers. It is a paradoxical situation.

Probably more than a third of GDP in states such as Acre, Roraima and Amapá is formed by transfers from the federal government. There are economies that live on these transfers.

The problem lies in the fact that the allocation is uncoordinated. So the first central idea of the Amazon Fund should be to initiate an effort to make resource allocation more systematic and efficient.

There are significant resources that cannot be allocated due to legal problems, because there is no counterpart. And the sum is significant. We're talking about more than R\$ 500 million in official credit, but nothing has been implemented. Alongside this, the budget problem is dramatic, cruel, desperate. Just this year the Ministry of the Environment was slashed again, approximately 40%.

The second central idea is that the Amazon Fund is an opportunity to incubate a new funding system. That is because, in light of this budget crisis, in which there are funds that are not allocable and effective remedies are in decline, I see the Amazon Fund as a way to incubate new fundraising instruments.

But we need to remove another thorn from the side of the reforestation issue: the Brazilian federal government. We must remove barriers because we have great potential not only in REDD, but also in reforestation, a forgotten issue.

Nobody says that there are practical constraints on reforestation projects under the Kyoto Protocol to prevent, in practice, reforestation systems linked to volunteer credits. We have new emerging markets, bio-banking (a bank for genetic research), biodiversity banks, water issues...

In the area of governance, there is the issue of forest easements, a very important area but one which goes down the drain if the changes to the Forest Code being articulated by the rural sector are approved. These changes, in themselves, will be sufficient for all estimated targets aimed at cutting deforestation to be reduced, and, consequently, there will be no carbon credits obtained.

The BNDES' initiative is a great opportunity, because of the technical competence, the political weight and the prestige that this entity has. Everybody respects the BNDES, and now you are expanding your role to the environmental area. This is very important because we now have an ally; we have whom to turn to.

And this is the first step in a movement to raise funds that can be very significant. We can imagine this is just the beginning.

► Model for governance in the Amazon

Fabio Feldmann – Firstly, I would say that, from the symbolic point of view, it is essential that the BNDES is heading this process. Their international experience explains why. At the moment the former head of the World Bank, economist Nicholas Stern, made a report on the impacts of global warming on the economy, the perception of this problem ended up becoming different to the environmentalists' perception of the same issue. That is, the participation of the BNDES in the sustainability issue takes on great importance.

There are several issues to be addressed. For example, industries with high economic growth and no concern for the waste generated by their products, such as e-waste. It would be very important to use the critical majority in the BNDES in conjunction with the Ministry of the Environment and other ministries for preventive efforts aimed at this issue in order to avoid problems with solid waste management.

Another major problem in the Amazon is land title regularization (putting land titles into order). If I were to choose a key institution in this discussion, it would be the heritage of the federal government. There is a device in the Federal Constitution, in Article 225, known as *Ação Discriminatória*, which makes land legally unavailable if it is unoccupied or has been seized by the states aimed at protecting natural ecosystems.

I mean, taking unoccupied land back is conditioned to environmental conservation, which is strategic. Most of the Amazon area is unoccupied, and this constitutional provision has never been used, in fact, has never even been read.

The problem in Brazil is to create, in the Amazon and in other biomes, a framework of governance in which it is made clear that public power is crucial, but not the sole actor.

The possible accord in relation to the Amazon is the following: let us contain the expanding agricultural region, let us increase productivity in these areas. This is a political agreement, i.e. an agreement that the country has to come to terms with itself.

The Fund will certainly not have a political operation in the micro sense, but it will have one in the macro sense aimed at helping make this great agreement in Brazilian society possible. An agreement between the more advanced business sector and civil society, government leaders and the Brazilian scientific community, with a critical majority.

The expectation is that Brazil can create a framework that addresses the problem of deforestation or of changing land use. A recent report by McKinsey showed that the cost of mitigating the greenhouse effect and changing land use is small compared to other mitigation strategies.

I want to emphasize the importance of land title regularization and also say that we must innovate when we talk about governance in the matter of financing, even if we are innovators in areas such as environmental services. The issue of environmental service is not one of conceptualization, but rather one of who will foot this bill, and the creation of funding mechanisms.

I am going into the merits of the CDM [Clean Development Mechanism], but its great innovation was its financing through the market. The Amazon Fund is important in that it will be able to create a sustainable source of funding over time. Large government leaders make great speeches, but when it comes to the details of the negotiation it is very difficult to access these resources.

We must also consider the role of clearing banks and mitigation banks. In the US, there is an innovative experience of mitigation banks regulated not by the environmental area, but by the government's financial area. I am emphasizing this point because I think that innovation must be on the frontlines, from the institutional and legal points of view. This does not mean we should give up the command, the control. In Brazil, there is talk about the need for a rule of law, but we have to rely on other mechanisms.

We would have to have legislation for the Amazon biome, as well as for other biomes. The problem is that this was not done. The only rule we have in Brazil is the Forest Code. If there is a reduction of the Code, we will leave all biomes unprotected, except for the Mata Atlântica, which has a specific law.

Therefore, from the institutional standpoint, one of the goals must be to establish legislation for the biomes, because the constitutional text is a little uncertain, since it was written more than 20 years ago. If we could create a regulatory benchmark for these biomes, we would have less difficulty in coping with the resistance we have in Congress regarding the Forest Code.

Even though I recognize the difficulties of the Forest Code, it is the only standard. For this reason, I see the Fund as having the role of establishing political articulation.

At the meeting I had with businessmen during Prince Charles' visit to Brazil, it became clear that Brazilian brands are somewhat harmed by the deforestation of the Amazon, in relation to its reputation and its exports. Therefore, we must have the ability, as does the Amazon Fund, to form alliances in Brazilian society.

I am passing the ball to Professor Guilherme [Dias] to know about the feasibility of curbing agriculture. That's the most important negotiation, the main pact for improving productivity, negotiating so that those areas that have already been deforested may continue expanding Brazilian agriculture. This is the pact that Brazil has to make.

One final comment. There was talk here about the Amazon Basin. For many years, I have held that the TCA [Amazon Cooperation Treaty] has a different role.

In the Arctic, for example, an important pact was made concerning the issue of global warming financed by several countries. I have been proposing this for many years. Why am I stressing this point? Because the impact of global warming on the Amazon region is extremely complex and of a sufficient magnitude to encourage the possibility of an agreement, including the power supply in other regions of the country.

The Amazon Fund deals with, among other things, projects related to mitigation, but the aspect of adapting, even in the agricultural segment, is essential. In the Stern Report of Brazil, it says that the Brazilian territory would have suffered an increase of 1° C over the past 50 years, and that Brazilian agriculture would have problems even with migration.

For some cultures, investments would have to be made immediately to adapt, with the possibility of studying the *caatinga* vegetation biome to obtain information on the resistance of plants to water stress, as a result of the need for technological innovation.

I think that one of the Fund's duties – which President Luciano Coutinho has already mentioned – is innovation. Therefore, we must keep an open mind, use what worked. Have imagination as the great challenge. It is not only about obtaining resources and applying them, but rather to generate the challenge of innovation in Brazilian society in all senses.

► The word is conflict

Guilherme Dias – Despite [Fabio] Feldmann's provocation for me to get into the issue of expanding agricultural production in the Amazon, I would like to make it clear that he knows my answer: expanding agricultural production does not need the Amazon.

I want to emphasize the matter of governance in the process as a kind of challenge. How come we could not control what I call the “nation of extensive cattle-raising”? For nearly 30 years, we have gathered proof that this activity adds little value to our product, and yet we cannot control the interests of this “nation.”

There is fierce resistance to the process of innovating and reorganizing the “extensive cattle-raising” alliance. We must deal with that. That is, there is a real problem at the root of this process, which is effective conflict.

Another important aspect, already highlighted here by Roberto [Waack], is the following: Occasionally, I accompany the sustainable forest management project and I note that, if we leave a project open, it dies, nearly always. We have a problem of sick markets. A crystal clear problem. I know the timber market a little better, but I imagine that others are similar.

I see no other alternative – it is really a matter of conflict. We have been ridiculously condescending all these years. We see things happen, replicating themselves, and do not prevent them from happening again.

It is clear to me that those management projects are not sustainable, given the structure they face. So, some form of intervention in the structure of these markets is called for, but intervening for real, because their tendency is to launch into an outrageous process of exploitation.

Unfortunately, my conclusion in relation to these concerns is as follows: we need conflict, it is a matter war, mobilizing and acting aggressively on these issues related to agro-pastoral activities. A portion of this market that needs to be restructured is the extensive cattle-raising.

► **The Amazon Fund must consider the intangible**

Mário Ramos Ribeiro – I strongly agree with what doctor Adalberto [Luis] Val said, because it is a precondition to discuss the Amazon issue, which has not yet been integrated into Brazil neither intellectually, nor physically, nor in terms of infrastructure, or from the point of view of knowledge.

Second point: There was considerable growth in recent years in relation to regulation as well as to command and control. I believe that, as provocation, if the command and control efforts were going to produce any result, they would have already done so.

I am making a clear effort to distinguish command and control from law enforcement. Applying the law is an obligation of the State, whereas command and control are aspects related to the capacity that the State either has or does not have to manage, to create sound regulation and to effectively regulate, using the mechanisms of law enforcement. Since we do not have any such mechanisms, all the instruments of created for command and control have not worked, such as the ecological and economic zoning, created by law in 1981 and amended in 2002.

There is an interesting conflict in the Amazon: There is a private dimension to the issue of the legal reserve of a property, but you can be in conflict with the public interest because of ecological-economic zoning which is already finalized, but never used. And there is no possibility, because it lacks enforcement to become a public policy tool.

Another point that I consider important, and which is highlighted by a World Bank document, concerns the causes of deforestation in the Amazon. A very interesting aspect is the economic nature of the Amazon, especially the issue of cattle, as Professor Guilherme [Dias] here noted. It is geocologically endogenous. That is, the situations concerning climate, rain, several specific environmental issues between western Amazon and eastern Amazon, have all created circumstances that make cattle-raising highly profitable.

The idea of the BNDES as a think-tank pleases me, in the same vein as the World Bank taking on the sustainability issue, through the Stern Report. The latest World Bank report, *Where is the wealth of nations?*, focuses on the following point: it is necessary to calculate the depreciation of natural resources. In economic language, it is a theory of capital applied to natural resources. Usually, we evaluate produced capital by taking into account its depreciation.

What did the World Bank do for 140 countries? It examined the produced capital, natural resources capital, plus the intangible capital, which includes knowledge, institutions, governance, rule of law, essentially, the basic conditions. The fact is that most developed countries no longer depend so much on produced capital, no longer on natural resources capital, because there is huge investment into intangible capital.

Any public policy for the Amazon Fund related to allocation must consider this issue, the issue of intangibles, especially because the World Bank document presented a *mea culpa* for its performance over the last 50 years, when there was investment in produced capital and a curse was cast on the natural resources economies.

I live in an economy where I frequently read, in Belém, in the state of Pará, news of conflict. This problem is related to rule of law, this is intangible capital which is not being duly controlled, financed or regulated. The issue of land title regularization (putting land titles into order) is crucial in the Amazon issue, because it is intangible capital, as well.

A relevant aspect on the matter was also highlighted by the World Bank in a brainstorming session much like this one to address the issue of assets, wealth and income. Typically, assets generate income in the form of money or services, but the importance of income generating assets was highlighted here.

Let us imagine a mine that generated income for a given population and that closes after 60 years. There are crystallized assets that can guarantee a continued growth rate per capita, so that it does not fall, does not fall into the abyss.

Since the regulation of the model is bad, there is command and control, but there is no enforcement or incentive mechanisms; when a mine is exhausted or when reserves run out, all

efforts are made to continue, to perpetuate the livestock, to perpetuate their profitable *status quo*. This is in the World Bank report on the causes of deforestation in the Amazon.

This is one of the challenges for the group in terms of thinking. I find the idea of a sustainability indicator important, because it will contribute to important changes. Let us imagine that the State establishes legal reserves through ecological zoning. Today, city mayors are not interested in setting up legal reserves, but they will be if there are returns, such as proposals to increase transfers coming from the Municipalities Participation Fund or to guarantee City Hall some type of financing for development, integration of the Amazon, so as to contribute to the crystallization of assets. Without the indicator, without the sustainability thermometer, there is no way to monitor it.

The Amazon Fund has to be a fund of integration of the region with the rest of the country and enhance environmental assets. How much is the Amazon biome worth, or some legal reserves?

It is very difficult to measure this, but not impossible. This is a fantastic instrument of public policy.

► The BNDES' entrance to the environment changes the scenario

Virgílio Viana – I would like to echo all my colleagues, praising the BNDES not only for the meeting itself, but for its symbolism. The entrance of the BNDES into the Amazon and to the environmental issue is of historical importance. For quite some time now, many of us have been calling for the Bank to be more involved in this area. I believe that the inclusion of the Amazon in the portfolio of the Bank is of historical magnitude and, in my view, goes beyond the constitution of the Amazon Fund.

The Amazon Fund, however, will not cure all ills. Many studies and reports – which have already been summarized here: McKinsey, Stern and many others – point out the need for a green economy in all regions of the planet. Nevertheless, I believe that in no other region is this issue more urgent than in the Amazon. The central issue is: how to put a green economy of

billions, based on the rising value of the standing forest, on the other side of the fence, where there is also an economy of billions, related to deforestation (soybean, cattle, illegal timber etc.).

It will be a challenge for the BNDES to become an actor to promote sustainable development and environmental conservation in the Amazon. I participated in an independent assessment of the World Bank approximately eight years ago, and the conclusion was that the IBRD had committed two mistakes: what they call “commissioning errors” and “omission errors.”

Commissioning errors were, for example, the Polonoroeste. (In the 1980s, World Bank funds financed the construction of a road connecting the municipality of Pontes de Lacerda to BR-364, linking Cuiabá to Porto Velho.) And omission errors are related to the absence of a financial agent in some activities, stemming from a fear of risking reputé and of transaction costs.

Regarding the proposal of the moderator, I would like to focus on two topics. The first is the possible role of the BNDES as a catalyst for change toward a new green economy, perhaps the most strategic role. Nobody deforests out of stupidity or ignorance, or out of insanity, nor irrationality; that is what I have been chanting like a mantra over recent years.

We need to create an economic rationale, which should consider other instruments. The foresight of the Environmental Division of the BNDES should include several new tools that go beyond the Amazon Fund. The Fund could be the catalyst, the incubator, but we should not rely solely on the mechanisms for donations. It is worth remembering that governments will be called upon to contribute, probably when there are climactic, environmental and humanitarian disasters, such as tsunamis, earthquakes, essentially, things like that. And politicians tend to respond much more to tragedy than to structuring efforts.

In this sense, I consider it relevant that the BNDES has the opportunity to bring donation resources together with those from the market. The BNDES could be the driving force behind such operations and provide support for the structuring of the carbon market for forests. This is the opportunity of our lives to save the Amazon and improve the standard of living for the people living there. For those who have been engaged in this sector for quite some time and already have grey hair, like I do, never has there been, in the history of the Amazon, an opportunity such as now, with financial resources associated to REDD.

But we should not delude ourselves that this will be just a government effort. The Bank could have a strategic role if it goes beyond the aim of just a government project.

There is an erroneous idea that fund mechanisms compete with market mechanisms. I do not think so. Provided there is no double accounting, we can have both. The BNDES could be active in both, in the structuring of both market mechanisms as mechanisms for non-reimbursable financing. There is the argument that the market mechanism makes the fund mechanism infeasible; it is profoundly mistaken.

The second topic that I wanted to mention are lessons learned. President Luciano Coutinho said the Bank is entering the environmental area, a new area, which will manage a non-reimbursable fund. I want to remind you that there is a long history, in Brazil and in the world, of international transactions with non-reimbursable funds, and this history is normally tragic. For this reason, it would be important for the Bank to revise lessons learned regarding reimbursable mechanisms. There is a lot of literature on them and we should not make the same mistakes from the past.

Simple solutions are interesting and I want to share an extremely simple solution: One of the topics is payment for environmental services. We developed a system called “Forest Grant,” which now has 10 million hectares, with six thousand families participating in a commitment to zero deforestation.

It’s no use coming up with complicated rules, as Professor Mário [Ramos Ribeiro] addressed, in lawless circumstances. The rules have to be extremely simple, so people can understand at a glance. If the equation is complex, nobody understands and carries on with the destructive process that devastated the Atlantic Forest.

► Environmental area will connect the Fund with other mechanisms

Eduardo Rath Fingerl – I understand that the goal in establishing the Environmental Division is, precisely, to connect the Amazon Fund with other existing mechanisms within the Bank, which has a long tradition in fixed income and equities. Let’s make the most of this opportunity

of the Amazon Fund to join the traditional instruments of the Bank with innovation, which has become one of its priorities.

To that effect, we have developed various mechanisms for fixed income, innovation, technological development, support for intangibles, issues that have all been covered here. We also have a line specifically dedicated to supporting intangible capital.

All this, of course, is intertwined with all the activities in the Environmental Division and socio-environmental responsibility, culminating early last year with the Seed Capital Fund's (Criatec) approval of the first start-up company in the Amazon related to biotechnology. The BNDES has a 30% stake in the capital of this company, via Criatec, hoping that one fine day it will flourish and prosper.

I have been at the Bank for 34 years, virtually at the end my career, and it's great to have the privilege to be heading this initiative. I would also like to point out that this effort by the BNDES is the result of the remarkable work of Tasso [Azevedo] and João Carlos [Ferraz], and I represent the outcome of this initiative.

Unfortunately, I will have to leave the meeting because I have another one to attend. Good work, good luck and thank you for coming.

* * *

After the initial phase, the experts revealed the main challenges for the region. The goal was to form a conceptual framework to ensure subsidies so that later the group could think of solutions based on the challenges presented. That is, in a collective effort to define the window of opportunity for the region.

Therefore, the round of debates was characterized as being the window of opportunities identified by that specific group, regardless of the problems pointed out by experts from international institutions or governments. The focus of the discussion was the future, not the diagnoses. Consensus was not the aim, but rather diverse viewpoints that could contribute to designing alternatives and an agenda for the Amazon Fund.

The following topics were dealt with: land title regularization, the goal of deforestation, development of production chains in the region, developing human capital, tackling intra-regional imbalances and financing sustainable businesses.

Fabio Feldmann

Much of what is being said about land title regularization is simply amnesty. I think land title regularization should have the clear goal of appropriating the federal government's unoccupied lands with the purpose of environmental conservation. Very few people know that this issue is included in the 1988 Constitution. This issue changes the game completely. As we have resources, the federal government's equity has a crucial role in this process. Land title regularization must aim at strengthening the federal government's equity, for appropriation with governance capacity.

Land title regularization must aim at strengthening the federal government's equity, for appropriation with governance capacity. This issue is not about amnesty, but what the government is doing is not regularization, but rather offering amnesty to those who occupied land.

On the matter of soy, for instance, efforts to purchase this product could require certification and regularization of the property. These are important conditions that provide for the effective enforcement of land title regularization.

Guilherme Dias

Let me comment on what Fabio has just said. Historically, ownership has been most absurdly privileged. Adverse appropriation is a formalized path to ownership. In the First Republic, the process was consolidated from arrangements with the states. It was a time when land policy was created for the states. That is, each government promoted the occupation of its territory, and this method gave rise to one of the most important impetus for occupation.

Currently, this situation is at odds with how to evaluate the meaning of the Amazon, the objective one wants to offer this area. For this reason, I think it is a matter of legal framework.

It must be made clear that this space is not worth such a principle consecrated across all Brazilian agriculture. The 1988 Constitution did not change this practice.

Conflicts arise from these legal principles. We have a problem, and we need to modify the legal framework.

Virgílio Viana

I wanted to illustrate this view with two examples. I remember the first time I was in the Incra office in Apuí. There was a small reception hall full of dust and a dog lying in the place of the receptionist. The telephone was an old-fashion model, the office head's room was down the hall and had no windows, but was equipped with a noisy air conditioner and no telephone line because the bill had not been paid.

I told the head that we were waging war to fight illicit dealings. He had a typewriter. This was the image of the Incra office in Apuí, about five years ago. Since then, it is more or less the same.

Another example was when we started the Sustainable Development Program in the Amazon. There was no land agency in the region. The last one had been terminated 10 years before, and its file consisted of boxes of documents left in the back rooms of the facility. Many of these even disappeared. We then created the Land Institute of the State of Amazonas, because there was no other institution.

The report serves to emphasize the great need we have for investment. It would be nice if the Amazon Fund could estimate how far its involvement with this issue will go and how much is related to the responsibility of government bodies. The fact is that the training of personnel ground to a halt many decades ago.

Paulo Faveret

How much is this lack of resources? Is the problem one of absolute scarcity and/or of misused existing resources?

Virgílio Viana

Fifty-one percent for one problem; 50% for the other. There is a paradox. Incra has a wealth of resources in cash to spend on settlement programs at the state conservation units, which adds up to about R\$ 50 million. They cannot spend 5% of this per year due to red tape.

This requires, perhaps, an approach similar to that carried out in Mexico. They did away with a similar body. Later, a new institution was created. I mean, they started all over again, from scratch. Maybe the challenge is something at this level.

Paulo Faveret

Consider the extinction...

Virgílio Viana

Yes. Think about metamorphosis. If possible, take advantage of something. I cited these two cases because I believe that in the land issue many resources and a lot of time are needed. Therefore, let's not get our hopes up that this mechanism will resolve the problem, that it will provide short-term return. It is something for 10 years from now, even if we are able to apply R\$ 1 billion each year.

Besides this, the fact that we have the land situation resolved does not automatically imply a reduction of deforestation. In Rio de Janeiro, Petrópolis was a champion in deforestation in the Atlantic Forest until recently. And this in Rio, the capital of the Empire, with most of the land title regularization in relatively good order. What I mean by that is to tone down the assurance that investment in land title regularization will take care of the urgent challenges for containing deforestation.

Sérgio Besserman

The world has changed. It's not about more or less money. If England and the United States of America can and in fact do nationalize their financial system, we can deal with land-use

planning in the Amazon based on models other than those used in past decades. And in this case, I fully support the end of Incra. We start all over again, because if it's another world, then let's get that series of barriers that existed when the paradigm was completely defined out of our heads.

Paulo Faveret

We are headed for a solution ...

Sérgio Besserman

And I'm no lover of the State, although I a leftist. I believe in what Delfim [Netto] used to say: "If the government buys the circus, the dwarf begins to grow."

Sérgio Abranches

I would take the discussion on land title regularization to defend a point that has to do with what Virgílio [Viana], Sérgio [Besserman] and Guilherme [Dias] said.

Land title regularization is indeed a challenge, because it is a central component of governance and an essential tool for State efforts. When public land is delimited, the government is given the power to allocate it and play politics with its appropriation. In other words, vacant land encourages false or illicitly attained land titles; on the other hand, an already delimited land belongs to the State, and the State will be free to use this land.

Therefore, certain actions are a crime, and enforcement becomes a lot easier. It is a challenge because it will present the BNDES with a different situation to what actually happens; for example, when the Bank finances projects in São Paulo and Minas Gerais.

In these cases, there are strict criteria regarding the legality of operations. The Bank cannot finance an undertaking that is located on land that has false or illicitly attained land titles or on the Ministry of Labor's blacklist database. Paying attention to the legality of the production chain is essential.

It is a challenge, too, in terms of implementation, due to the reasons presented by Virgílio [Viana]. If we are to go about land title regularization in a Brazilian fashion, with notary publics and Incra, it will take us 30 years, it will cost a fortune, and we will never reach the end.

We must use technology and operate together with other State bodies, which cannot include Incra. There's even an ideological justification for this: he who carries out legalization and agrarian reform cannot regularize land titles. There are conflicts of goals, conflicts of interest. It's obvious! The one to carry out land title regularization must be an independent agency, which will be the manager of public assets.

Fabio Feldman

I just want to make a comment. There was a law which required all rural property to carry out geocoding, but it was suspended on the grounds that owners have no resources to do this. This would be a good financing for the BNDES, because geocoding would eliminate uncertainty concerning property boundaries.

Paulo Faveret

I do not wish to revoke anyone's right to speak, but I want to ask a question. Do you have more specific comments which might clarify the meaning of land title regularization? This is because we are now moving in the direction of legal and governance issues.

Carlos Eduardo Young

When we talk about land title regularization, we talk about it at two levels; one which was discussed here, the most basic, primary, which is the right to land ownership, involving both the land occupied by squatters, as well as land included in a conservation unit. And there is a considerable underlying conflict between potential conservation units, including protected areas and indigenous lands.

But there is a second level, which we must also pay attention to: the issue of environmental regularization of the property, which must also be included as land title regularization,

encompassing the definition of permanent preservation areas and registration of the legal reserve. In my opinion, no official resource, not only from the Amazon Fund, should be granted to a property without a registered legal reserve.

Paulo Faveret

So, Carlos Eduardo [Young] has raised a different concept: understanding land title regularization as being necessarily environmental.

Carlos Eduardo Young

There are two levels. There is one level that is more urgent, the most obvious, and the fact that, in 2009, there was still talk about vacant land shows how behind we are, because unoccupied land should have been regularized who knows how long ago. Moreover, there is another level of demand for land title regularization, which is what Virgílio [Viana] said. It is not enough to have the property title, because the owner can continue deforesting. That is, the land has an owner, but it is 100% deforested.

Adalberto Luis Val

I agree with what Sérgio Abranches said. This is a crucial point. Until we achieve land geocoding in the Amazon, we will have to continue relying on Google to look at the area.

And more: conflicts are taking place in or near cities, and sadly it is not only large areas, conflicts are also located close to cities. This is one point. I think immediate investments are called for in a very rapid mapping process, geocoding.

Another important aspect to consider is that much of the Amazon is earmarked for conservation units and is, therefore, untouchable. For example, indigenous lands and shores along bodies of water. We need to work on the rest, the surroundings of these areas to move forward.

The third very important point is the following: among these new paradigms with which we must work, there is need to reconcile the concepts of land title regularization with studies made

on the zoning of the Amazon, the agro-ecological and economical aspects, and attach this to the environmental, ecological, economic, agronomic and cultural concept.

Then, yes, we can say: “This area here, you can use 100%. But this area over here cannot be used under any circumstance.” Today we need a new legal framework for land tenure in the Amazon, which takes all these aspects into consideration.

Guilherme Dias

Changing the legal framework is essential. But land title regularization, done the right way, will take a long time. While the current satellite tracking technology is helpful, letting another year go by with no changes means more acquired rights under the current rules. One way to change the legal framework is the possibility, in certain circumstances, of compensating squatters.

Say the following: “Look, according to the old rule you have stayed on this land for 15 years and nobody complained. Therefore, you have some rights, but not here. Let’s find some other vacant land in some other corner of the country for your settlement, where there is no preservation area.”

Maybe this will decrease the resistance when there are changes in the regulatory framework, and the change must be immediate. This reasoning, to postpone decisions, has resulted in the legal hell we now face. Without changes, control will be impossible.

Sérgio Leitão

A comment could be made using that phrase from James Carville [delivered during Bill Clinton’s campaign in 1992]: “It’s the economy, stupid”, saying “it is the land, stupid” is not the environmental issue. To reiterate, we are not talking here about an environmental problem but rather a land problem. If the analysis were based on the stock of already deforested land, there would not be any discussion.

What people want is to accumulate land, because this means a series of advantages, marketable assets. On that basis, bank loans are obtained; it is an asset that is sold; it is a trade. As Professor Guilherme [Dias] said, “That is how things have always been.”

The second issue is that we already have this new legal framework, which is the Public Forest Management Law. This is the milestone that was created in Lula's administration. On the occasion, when we approved the law, we were heavily criticized. Everyone was against the fact that Greenpeace, the Socio-Environmental Institute and the WWF had supported this law. But our counterpart was the fact that the government was forcing people to take control of the land in the region, with the registration of public forests. That was the important negotiation.

I used to joke with Tasso [Azevedo] saying that he was the biggest landowner in Brazil, as he was president of the Brazilian Forest Service, lord of the vast realm from Oiapoque to Chui and holder of the largest inventory of land available for use. What is the problem with this today? The problem is that this law, this new legal framework, was simply disregarded with two provisional measures for regularization.

There is a fundamental aspect for the analysis of this issue which would make me, regrettably, oppose Virgílio [Viana]. I do not think it is 50% scarcity of resources and 50% misuse of these resources. Perhaps it is 100% misuse, and, because it is 100%, there is an objective aspect: if it costs R\$ 100 million to clean, to sweep up and across the state of Pará, then why not use R\$ 100 million from the Fund and solve the issue? This is the challenge.

Roberto Waack

My observation is that the challenge is not only the Fund's, the Bank's, but the country's; it is to replace the "while we haven't" with "despite" in this land discussion. If we cannot move forward in mechanisms to create an economic foundation for the tropical rainforest, despite this land situation, I fully agree with Virgílio [Viana] that, as much as we want, we shall miss this boat. We will not be able to employ efforts such as those we are discussing.

We need to avoid falling into the trap of being the twelfth ministry to discuss the matter, avoid entering the dispute for territory in the national political scenario to see who will solve the issue. We have a very significant challenge, which is, despite this situation, to move forward in strengthening the economy of the tropical rainforest.

Tasso Azevedo

Roberto [Waack]'s approach is in keeping with mine. We cannot stop efforts because of the issue of land title regularization. This is an absolutely crucial issue, though the tendency is to interrupt. "Well, one can do nothing because everything depends on land title regularization." Of course that it is essential.

I want to recall the issue of public forests. The map of Brazil in March 2006 shows that every place where there is a plot or a piece of public land with forest is declared a public forest. The registration made by the Forest Service shows that there are currently 211 million acres already registered as such. We estimate that there are about 300 million acres of public forests in Brazil. That is, there remains, let's say, 90 million to be registered.

There are very clear rules for these areas: they cannot be qualified in the private domain and should remain public, and they cannot be deforested, they have to be maintained as a forest, except in extraordinary cases. But we have a challenge, which is to identify them. The same goes for the issue of land title regularization.

Finally, I would like to make an observation. It is very difficult to separate three cases, that is, land-use planning, land title regularization and environmental regularization. These are issues that must necessarily come together; otherwise, we run the risk of making efforts driven exclusively by private interests or local interests in the region.

Paulo Faveret

Political will, on the other hand, leads us somewhat more into governance. Is there a peaceful understanding of what governance is? Are there different magnitudes? What does governance cover besides the land ownership issue and environmental regularization? What should we bring to the table as a challenge?

Roberto Waack

Any model of governance, today, is far from being a government decision; it becomes a decision for civil society in conjunction with business that interacts with the government. A supranational model.

We're talking about some form of economic occupation of the Amazon Basin area, which has no way of being dissociated from the context of the basin as a whole, which includes other countries. In particular, models that take civil society into account, providing an opinion on the definition of new structures for production and social management. The word "governance" must certainly go beyond the expectations that we have of the government telling us the best options for the occupation of this territory.

Sérgio Leitão

I will begin with the issue of this provocation called refederalization. It is one of the matters regarding the management of public forests in which we disagreed with the government. There is an article in law that transfers the duty of forest management to the states.

We said that the issue would not suit an ordinary law, such as the Management Act, which is complementary. The Amazon states are not prepared, nor are they interested in carrying out environmental protection, aside from rare and honorable exceptions.

So, there is a problem of double order; they neither want to, nor are they able to, and when they want to, they do it in a complex way. So I think there is a problem of overlapping jurisdiction, which is quite serious. Also because the environmental issue is, above all, federal.

In the United States, it is a federal issue under a Supreme Court decision, because it was understood that in addition to the environmental issue there was a commercial issue. When a state has a different environmental standard from another state, the ensuing war is worse than a fiscal war. For these reasons, we have an issue that needs to be very well thought out.

Paulo Faveret

A challenge in jurisdiction.

Sérgio Leitão

Jurisdiction, overlapping competences. The states are not structured to carry out competent environmental management. One of the issues in question is precisely the limit of indebtedness

for the BNDES to be able to lend funds to municipalities and states so that they structure environmental programs.

The second issue in terms of governance is the environmental management program for indigenous land. There is no talk of environmental conservation in the Amazon without taking the indigenous land into consideration, which represents 20% of the region as a whole. Moreover, a great deal of the forested areas is located on indigenous land, which indicates the problem with the lack of a legal framework that covers this issue of environmental protection.

There is no legal framework for the implementation of environmental management in indigenous areas, because these lands are deemed impossible to use. Therefore, the full potential of biodiversity, sustainable use, is totally wasted, erasing its fundamental nature.

The third issue is that on indigenous land there is also a new, little-mentioned dilemma which includes, for example, urban problems. There are real Indian towns, villages, which remains in a kind of purgatory of beauty and chaos; they are neither one thing, nor the other.

Funai does not know how to handle it, the state does not know how to deal with, and in this area, all kinds of illegalities, smuggling and even social problems thrive. There were attempts by the Ministry of Environment, which did not move forward in integrating indigenous lands into a program of biodiversity management. I think it's a route we need to take due to its size and importance from an ecological point of view.

Sérgio Besserman

Sergio [Leitão] presented the first idea of a practical program. I think all colleagues from the BNDES realized that he mentioned the need for a PMAT (the BNDES' Program for the Modernization of Tax Collection) for the environmental issue. PMAT has specific characteristics, it is beyond the limit of indebtedness precisely because it gives a return in the form of increased revenues. If we consider the return, the externalities discussed here, an environmental PMAT is a powerful idea.

I will insist on one issue, because I think the political battle has not been won yet and if we do not win it, it will be hard for us to move forward in the matter of governance. And we must advance, disseminate the idea to the entire Brazilian society that the Amazon issue is a Brazilian and global issue.

In any organization, any institution, often what is intangible is more important than what is tangible. It so happens that the Brazilian army is obsessed with an idea, which is from the nineteenth century and the first half of the twentieth century, of occupation, colonization and settlement of this area while it is the tool, in the event of conflict, to know who will win. And the state must always win.

Today, the Armed Forces have to study biotechnology, ecology, study the Amazon and have a foresight for integration of the region. In Africa, successful experiments always include the presence of the Armed Forces with regard to conservation areas. The Army has a role to perform in the conflict, because the legal framework alone is not enough. The legal framework will give us the legal right, but the conflict concerning ownership will continue.

Sérgio Abranches

Two brief comments. This is not a problem of political will; political will is something that does not exist. Political will feeds authoritarianism, and it always goes wrong because it fulfills too many wishes, and it has no appropriate governance tools.

Recently, I walked through several communities in the Amazon and what I realized was this: There is immense know-how for organization, but the political effectiveness of this organization is depreciated, and collective efforts are inefficient because they lack the proper coordination. Communities cannot create facts.

Likewise, you cannot make the Amazon Treaty work. There are good active NGOs working in some of these countries and a very good NGO structure in the Brazilian Amazon, which must have begun to build a better network for integration, for verifying common interests, for making them more public, from the standpoint of the Brazilian political arena. So, what is actually missing is the political process, not the will.

Paulo Faveret

Channel...

Sérgio Abranches

Channel and alliances. What happens a lot in the Amazon is that efforts are scattered, similar to what happens in the government. There is civil society and the NGOs, but there is no proper interaction between them or the NGOs among themselves, which do not unite, do not define common goals and do not operate in the region with unified positions.

In other words, the improvement of Brazilian civil society is too scattered. It needs to be much more concentrated in order to have strategic objectives. It is political empowerment that is really missing. At meetings, staff begin to discuss great ideas, but when you ask how the governance of the PAC will be carried out, it comes to a halt. And that is because everyone confuses governance with government. And it is not the same thing. Governance is the process of organizing decisions, the organization of collective efforts.

One last point that has to do with the issue of public governance, in this case, yes, government. The efforts of governmental agencies in the Amazon are in serious disarray. In this case, a new instrument such as the Fund, together with the presence of the BNDES, may help, proving it to be impossible to carry out certain efforts without a unified view of the government itself. Without the view, no one knows whether to follow Incra, Ibama or the Chico Mendes Institute for Biodiversity Conservation.

An example of a problem with jurisdiction comes up between Ibama and the Chico Mendes Institute, which does not have all the powers of Ibama, despite having a number of responsibilities that used to be Ibama's. This is politics: it is to unite power and jurisdiction to establish, in fact, the enforcement capacity of these agencies. Today, they are not able to accomplish this enforcement.

I speak from experience. I monitored the closure of sawmills in Federal Police operations. The charcoal kilns were destroyed, and the owners were fined. Two months later, I went back

there and everything was the same: sawmills running again, with the restored kilns. Therefore, it is a costly effort without consequence, and with virtually no effectiveness.

Paulo Faveret

Possibly it is within this scattered environment that these structures mentioned by Professor Guilherme [Dias] have a free hand to operate.

Adalberto Luis Val

The presence of the State in the Amazon is fundamental. This is an issue of sovereignty. It is not about sovereignty in a war-like presence or something to that effect, but rather with the goal of providing citizenship to 23 million people living in the region.

When an individual needs medication, a physician or an ID card, the NGOs will do that for him/her, not the State. So we are giving up the sovereignty of the State in this region, a problem we need to solve quickly.

Another issue, well put by Sérgio Abranches, is that of the State *versus* the State. We must synchronize efforts. When the Ministry of Science and Technology prepares a huge project for organized, Brazilian research groups in Brazilian institutions, to work with biodiversity in the region, another Federal entity obstructs certain research because it needs authorization to collect biological material. This authorization takes a year.

Because of that, the researcher has to return the funding because the application period has expired. It is the State against the State, and it is making development and knowledge in the region unfeasible. I think we must invest significantly in this matter of synchronizing efforts.

This leads to the following point: the Amazon is not on the Brazilian government's agenda yet. Or it is scattered throughout several efforts under the responsibility of several ministries, which clearly shows the impossibility of managing the region without the adequate guidance of a governmental plan.

And, finally, the issue of laws, which I have called "appropriate laws" for the region. What good is it to create a law aimed at fencing the region in, forbidding everything? The Amazon is

not only Brazilian. The neighbors on the other side may collect whatever they need in terms of biodiversity with no legal obstacles.

Virgílio Viana

There is no national project for the Amazon. Behind all that is being discussed lies the confirmation that Brazil does not even know if it should make a large group of national parks out of the Amazon, or a huge soybean plantation, or maybe both. While we do not establish this definition, the issues mentioned here will remain a part of our lives.

So, thinking about the concept, thinking practically, it would be important if the BNDES were to create a nucleus for strategic thought in similar meetings to this one, a forum, a space to create this national project. Brazil will only tackle the Amazon issue when we create a national project for the region.

Fabio Feldmann

Professor, I think that when we talk about governance, the word “leadership” is missing. The word “leadership” has to emerge from governance to the BNDES’ actual role. We cannot disregard that anything that is to be done in the Amazon, in any form, will require leadership in the region and national leadership.

Sérgio Leitão

There is a very important issue that Tasso [Azevedo] is experiencing, called the “carbon war”. There is a legal doubt: to whom does carbon belong? Does it belong to the owner of a preserved area, to the municipality where this area is inserted, to the state government or the federal government? Certain assets are federal, assets of the federal government, but in the case of carbon, this conflict is far from being settled.

Carlos Eduardo Young

The main question is if the Amazon Fund represents a generation of credit in itself, which would eliminate the possibility of other projects. I cannot request carbon credit twice on the same thing. So, if I am to build a project in the Amazon, and this project reduces carbon, the ownership of this credit would have been assumed implicitly by the Amazon Fund. This means that automatically any other project in the Amazon would not generate carbon credit, which would be a huge lack of incentive to efforts.

Sérgio Besserman

One question: does the Norwegian donation to the Fund expect any carbon credit return or is it going to be a simple donation?

Tasso Azevedo

It will not have carbon credit return. Every donation to the Amazon Fund is entitled to a diploma, which represents a document recognizing that the donation supported the reduction equivalent “x” tons of carbon. But it is not valid as credit for the purpose of offsetting emissions.

Carlos Eduardo Young

The problem is a little more complicated because this has to be made clear so as to prevent a possible interpretation by third parties that could invalidate a Brazilian project. Someone might argue: “You are counting twice.” For this reason, legally this has to be made very clear to assure additionality [the project needs to add an advantage, which would not occur if the project did not exist]. This does not eliminate the additionality of a carbon project.

Tasso Azevedo

Just to make it clear, the decree that originates the Amazon Fund says explicitly that the diplomas issued do not generate credits. Now, it is important to point out that one thing is to ask about who the existing carbon belongs to, stored somewhere; another thing is to ask about the carbon after it is emitted. It is not as obvious as it looks. That is why this generates controversy.

Sérgio Besserman

But controversy is fundamental.

Paulo Faveret

Is there any other aspect more along the lines of governance to which you would like to draw attention?

Sérgio Abranches

A brief comment related to President Luciano Coutinho's presentation on the conservation units and the idea of conservation under the view of transferring income, which has to do with one of the points raised by Adalberto [Luis Val]. In order to truly constitute a permanent base of intellectual and scientific human capital in the Amazon, there must be investment into the local population and to raise the educational standards in the region.

These income transfers work. I remember well the original discussions in the beginning of the School Grant Program (Bolsa Escola) on the idea that one does not transfer income without conditioning it to education. When one imposes a condition to education, one does not encourage the person to have a bad education.

An income transfer program that says: "I will give you money for your child to go to school," the parents have got to give this child schooling that is much better than that he/she would have without the incentive. Then, one must invest in the quality of local education, use funds to mobilize the populations in favor of education and create a framework so that this population can be educated up to a technical and high-school level.

This is one of the primary purposes of any type of program that generates income to be transferred as payment for the local population to provide environmental protection services. There cannot be efforts without a foresight for the future. This is major social investment that has to be built into a true development program for the Amazon.

Sérgio Besserman

It is clear that the demographic growth of the regional population is one of the basic parameters for sustainability. If the population increases five-fold, we will be discussing another issue. What I mean is the following: do the women in Teresina have more children than the women in Florianópolis? Yes, they do! Do the women in Favela da Maré have more kids than those in Leblon? Yes they do! But if we analyze schooling, it is indifferent whether you are in Teresina, Florianópolis, in Maré or Leblon. The rate is the same.

Paulo Faveret

Shall we move on to Science and Technology? Does anyone want to focus on issue?

Adalberto Luis Val

I was worried we would not talk a little about science, technology and education. Producing sound education is the basis of this entire problem discussed here, and I would like to draw attention to some aspects that are extremely relevant. Brazil is producing today something like 11,000 doctors per year. In the entire Amazon – and we are talking about nine states – all institutions together have about 3,500 doctors, of which half no longer work with research.

Therefore, we have an extremely serious problem in the Amazon, which is the expansion of real capacity to produce effective information for the region. What is the consequence of this? It can be seen today. Not long ago, I did a survey on the CAPES Portal of Journals and noted that 70%, and I repeat 70% of all scientific production transmitted in the world with the word Amazon as part of the title or in the summary has no Brazilian author.

So, if information represents sovereignty, this is the size of the hole we are dealing with. The institutions are undermined. There is very serious imbalance between words and what we actually need for the Amazon.

Another issue is the technological institutes. If we are planning on going somewhere with the Amazon, we must have institutes that produce the final product and we have no product from the Amazon today that warrants a scale to at least supply the domestic market.

With regard to education, we must put an end to this unification, with a law that is good for Brazil as a whole. A student in the Amazon gets a little book that paints the river blue. If he paints this river yellow or black, he will get a zero. Except that children have never seen a blue river. There are no blue rivers in the Amazon.

So, we must set up a decent work team to produce material that is compatible with the environmental and cultural characteristics of the region; otherwise, we will develop a set of robots, and this does not make a real citizen. This kind of attitude increasingly isolates the region from its own context.

Mário Ramos Ribeiro

North American economist, Jeffrey Sachs, coordinated a document on science and technology, summarized later in an article in *The Economist*, with the new world map relative to science and technology. In this new map, it says that the countries that are innovators of technology are the United States, Canada, Japan, those in Western Europe; some of these countries are absorbers of technology, such as South Africa, Brazil – in this case, the South and Southeastern regions – and Chile. All criteria are placed on the background of the paper.

And there are those excluded, which can neither innovate nor absorb. And among these is the rest of Brazil and the entire Amazon. But the dangerous warning is the following: The premise of the work is that investment in education is contrary to traditional investment in the economy, in which assets depreciate and start to have decreasing returns. The knowledge asset, on the contrary, accumulates and, therefore, its return grows.

The conclusion of the document causes us to reflect that the gap between technology innovators and the excluded parties will increase tremendously. That is, if the present scenario is maintained, the gap will grow. This means that there has got to be a radical change in public policy in the excluded countries. The science and technology issue requires urgent action.

Carlos Eduardo Young

In science and technology, we have to think about the entire chain, not only the cutting-edge, which are the PhDs, working in laboratories, but also working on extending and applying already existing knowledge to a practical level. There is an extremely dire need for transmission. So, we must also think about the lower levels, which would be the equivalent to an old vocational level, with local knowledge.

There is a very serious problem in the communities. Urbanization is incurring a 70% loss of cultural memory. Rubber extraction, for example. The younger generation is scared of the woods. So that's one thing that will be lost, and this gap is important not only up there at high levels, but also down here at the lower levels.

Sérgio Besserman

I will add one point which is also specifically the niche of the Bank. One thing that it does exceptionally well is integrate companies – aimed at market economy, governments and companies – with the local business chains. This is the BNDES' expertise and it seems to me to have quite a high chance of return. The Bank also toyed with this in the past. I used the verb “toy” to mention pilot projects, such as vegetable leather used by Hermès. But it is not that kind of pilot project I am talking about. I am thinking much more about chains integrated into agribusiness, which are applied to an Amazon reality quite different from that which exists today. I think this is a very special niche.

Roberto Waack

I completely agree with everything that has been said. I think these are complementary observations, but the emphasis in this view of the value chain is key, even going beyond the traditional position of science and technology.

A substantial change is underway in the transactions between businesses, as well as between businesses and consumers with regard to products, for example, derived from the forest economy. One must incorporate the understanding of these processes within a macro view of business chains. I think that is where the essence of raising value lies; values that we are letting slip through our fingers at this time.

Fabio Feldmann

There is an issue that has not yet been discussed here, which is that of ecological tourism or highly sophisticated ecotourism. The Amazon has an undeniable symbolic magnitude outside Brazil. I'm referring to this issue because when we talk here about education or science and technology, I notice a slightly fragmented view. Why not develop scientific tourism, bird watching, or gourmet tourism?

Training for a sophisticated tourism is not exactly on the economic agenda; it falls under training. Tourism, for me, is important and is not incompatible with preservation; there is tourism at the conservation unit, in indigenous areas. I'm mentioning this because there are other fundamental capabilities. Perhaps because the debate should be about what is the great potential of the Amazon?

Everyone is concerned about deforestation, because this Fund was raised in a discussion about the climate, but we would have to think in a somewhat broader and more inclusive way, including Embratur and the Ministry of Tourism. We're thinking about science as if it were completely detached from other issues.

Paulo Faveret

Obviously, the right thing to do would be if we made the offhand connections, but if we do this for all issues, it would be impossible with the time we have available. What we are doing is the first approach, becoming aware, and we are entering a more economic matter assuming that everything is connected, by definition.

Roberto Waack

I think so, totally. Today the business of certification, the green label, generates about US\$ 24 billion per year in products. Only 8% of the total refers to tropical products. It is incredible that the mechanism created, basically, to ensure traceability, reputation, credibility, legitimacy of products from that kind of environment has not yet been able to develop within this process.

We have recently experienced the search for investments in the Amazon. But, in parallel, one of the major problems of the region is to talk about investment, because there is an immediate association with some legal issues and deforestation. We're creating a dislike for investment in the tropical area on the planet, which somehow opposes the attempt to create a strong tropical forestry economy. Only through mechanisms such as certification, traceability, assurance of legitimate production can we reduce the risk/reputation that is now associated with the Amazon. I would say the word "Amazon" today is related more to a bad reputation than to something with the fantastic value we have.

Paulo Faveret

What you're saying is that traceability is essential for making consumer's confidence feasible; thus, ensuring the reputation and turning the game around. Because it has positive content, but because of the practices ...

Roberto Waack

All chains, including sustainable tourism, cited by Fábio [Feldman], fish farming ... But the technology associated with traceability, with issues of satellite images, etc. is a powerful instrument we have available that reaches the end consumer, and we know how much the consumer is influenced by this. Finally, I would say that it is one of the greatest opportunities we have to really strengthen this economy.

* * *

The economic issues were addressed then and divided into:

- ▶ *Environmental services*
Productivity gains in agriculture in deforested areas, and the structure for developing forest production chains.
- ▶ *Diversity*
Implementing large-scale economic projects related to the economy of the tropical rainforest, and to the economy of the standing forest.
- ▶ *Science and technology*
Including economic activities within the region in the value chain.
- ▶ *Sustainable businesses*
Transforming the 'deforestation belt' into a 'sustainable development belt', with funding for sustainable business, while establishing social and environmental conditions in funding, productivity.
- ▶ *Tourism*
Financing strategies for sustainable tourism for the region, while integrating the service chain.

Paulo Faveret

Would you like to establish the topics?

Tasso Azevedo

I would like to talk a little about environmental services, because it is a topic that has begun to be structured. There is a regulation project in Congress on environmental services, which will be very important for the Amazon and is related to nationalization. To nationalize the Amazon is to nationalize benefits and costs of the benefits associated with the Amazon.

By creating a system for payment of environmental services, and it should regulate the principles that will govern such services; the project will open a window of opportunity that should be well explored. It will necessarily incorporate the idea of transferring resources from

different regions of Brazil, mainly from the South and Southeast, to the Amazon, recognizing these environmental services.

The notion that this has to do with necessary large-scale investment can be changed into service. And it is very important because everything that will be done in the Amazon will bear costs beyond those traditional costs related to logistics, the land issue, for example. So, we seek a way to equalize this difference in cost in some way, which is often seen as a subsidy.

But if we deal with it as a service and if we pay for this service, we will create an efficient system in the long run, transferring resources from the Central-South Region to the Amazon. In the long term, it will be activity that will become self-sustainable.

As for environmental services, we will face the same challenge to make large-scale efforts for a large number of people. That is, for those who are working and heading toward conserving or promoting sustainable development, sustainable production.

We have an important opportunity to test some things through the Amazon Fund. For example, a payment mechanism by means of a certain criterion, in a certain region, a kind of matching fund, in which the Fund enters with a portion of the resources, while the states contribute with another part, and the federal government with others.

The idea is to formulate a mechanism to clearly ensure a difference for those who comply with the steps in a conservation process. It is an idea to creatively promote environmental services.

Sérgio Leitão

In Congress, there is already a series of legislative initiatives regarding environmental service. These proposals have one characteristic in common: they relay a notion that environmental service is a kind of tribute that we receive from beneficiary countries of environmental services provided by the forest. In Brazil, this issue is in keeping with recurring logic; that we are always under the impression that destruction is our responsibility, but conservation has to come from outside. That is, the resources for destruction are internal, while for conservation, external. This aspect has to do with my initial provocation, the need for credibility.

With the international financial crisis, the possibility of the states or the nation-state holding intervention power in the market game has become much larger. For example, we from Greenpeace came here to the BNDES to propose that the Bank intervene in the matter of reforming the timber industry.

The fact that Brazil has a development bank with disbursements of over R\$ 100 billion accounts for why we have not reached the bottom of the well. The country has managed to fully maintain its capability of financing.

We have an issue of transparency and explaining the allocation of resources in the Amazon, not only for destruction, but especially to mold attitudes and role models. In this context, the BNDES can make history, taking on the role of a watershed.

The presence of President Luciano Coutinho is, let's say, a kind of rare delight never before seen in the history of this country. Before taking on the Bank, he served in a series of cases with state governments, which provided him with knowledge. Coupled with this is the historical moment that allowed the Fund to be managed by the BNDES. These are all the "riches" that history has allowed us to have.

For these reasons, we have a rare opportunity to generate this entire revolution. From the concrete standpoint, reformatting a number of industries in the region may afford a leveraged role in the BNDES toward transformation.

This will be our ticket to enter the UN Security Council, not the nuclear submarine or Angra 3 or any other nonsense. With this transformation, we will get into the club of the great nations. Otherwise, we will be on the periphery of the game as we always have been.

Paulo Faveret

I will use my role as moderator to ask professor Guilherme Dias to talk about the issue of cattle-raising, which was hardly mentioned and is a critical issue. Then, we can move on to our solution session.

Guilherme Dias

Typically extensive cattle-raising is as follows: the entrepreneur knows that with a certain technology, with a certain level of knowledge and with a certain project of his, his production will make money, will be somewhat efficient, but after a few years it will dwindle away. This forces the sector to work with a sense of urgency. It is about coming, investing, and immediately stepping ahead toward the next stage. Extensive cattle-raising is still clearly carried out like this.

On the other hand, there is agricultural activity, which need not budge, as it has already reached its sustainable level. This entrepreneur is very interested in making investments in the entire structure that surrounds the system and obtaining guarantees that these investments will be consolidated in place.

Public policy has to separate the two activities. It is no longer possible to provide incentives to the extensive system, getting the two processes mixed up. In the end, the bull that comes out is the same, the soybeans coming out are the same, the product coming out to the market is the same, but they are two different systems, and we must make it very clear that the extensive system no longer serves our purpose, there is no more room for it. But how do you make this decision, how does one organize the support for this kind of decision?

Paulo Faveret

For any product?

Guilherme Dias

For any product.

Paulo Faveret

You're making a distinction between extensive cattle-raising and intensive cattle-raising.

Guilherme Dias

Cattle-raising is one example, but that does not mean that the model is confined to this activity. Many entrepreneurs have this vision of immediate profit, based on those who take care of the business, but there will be no development in the region. And the concept is: “I have to do everything now; do not feed me that story of legal reserve and stuff, because this gets in the way. I need to profit on my investment as quickly as possible.”

We must find a means to prevent this practice from obtaining public support. There is the kind of soy produced in a sustainable system, and another that takes the route of degradation. We need to distinguish one from the other.

Paulo Faveret

Distinguish and encourage.

Guilherme Dias

Distinguish and encourage because we have to punish the other. Extensive cattle-raising must be punished. Carried out this way, on land whose ownership is not paid for, it is obvious that it is highly profitable and will continue to be carried out and multiplied. How shall we put an end to this business?

Sérgio Besserman

All you need is to give the example of Rio de Janeiro and its slums on the hills. Imagine if ownership worked here as it works with extensive cattle-raising, what would happen? I myself would not be here.

Guilherme Dias

I would succumb to temptation.

Sérgio Besserman

I would be there seizing land, and the worst is that I know where to do this. The rate of return from extensive cattle-raising, as Professor Guilherme [Dias] addressed it, can even be related to the ox, but it is especially related to occupation for subsequent sale.

The main thing is this: everyone knows the mechanism through which this occurs. We have already previously discussed the legal framework. The entrepreneur keeps the ox on the land and then sells it when more commercial cattle-raising is achieved. Typical extensive cattle-raising is a crime, offensive.

The integrated model of industries with local activities is an expertise, and the Amazon Fund could generate leverage between the resources of the Fund itself and the budget of the Bank. The Environmental Division's resources are not only the Amazon Fund, nor those of fixed income or variable income. It can be the budget of the Bank.

We have great synergy when financing large companies with the environmental credit lines, and you can use the Amazon Fund to supplement the resources, providing the local producer with technical support, knowledge, and training.

The Bank should not feel the least bit embarrassed about operating like this. On the contrary, it is worth taking it on, providing transparency and credibility: "That's exactly what I'm doing. I am joining a large company with a cupuassu producer." The cupuassu producer would take non-refundable cash; the other, funding.

The Bank will not allocate resources from non-refundable fund to a large company. But it should use that cash to ensure an integrated model. The BNDES should direct its growth, accumulated since the 1980s, through the first privatizations and financing of concessions, to try and gain leverage to foster Brazil's great accomplishment, whose main player was Tasso [Azevedo]. This accomplishment was the forest concessions.

The BNDES should have a meeting like this with those who tried and failed; with those who would like to, but have not yet tried; with those who would be interested in the subject. Scholarly knowledge is fundamental; without it, there is nothing, but we must encourage the creativity of those who are considering investing, listen to them. And concession is fundamental.

Finally, payment for environmental services that the Amazon provides us, all of them, the humidity in the Southeast, the climate, carbon storage, etc. We need to develop a new model, the first tropical economy to have its own model. Let me illustrate, to save time. Let us quote the topic of tourism, brought up by Fabio [Feldmann], for example. Tourism is the second largest business in the world. The first is oil.

It's a great business and the Amazon is huge. Why don't we have programs that are preferably allocated to the Amazon in a context of sustainable tourism, so that tourists leave there without having made even one tour along the wide parts of the river or without having seen that wonderful and massive jaguar, but coming out of there with the idea of the Amazon of Brazil? Why not?

Sorry about the idea, but it's not because I'm Jewish like Feldmann, no, nothing to do with the Church – why not legalize gambling in the Amazon?

Paulo Faveret

May I write it down?

Sérgio Besserman

You may, of course, it is a proposal. Look, gambling has nothing to do with this discussion, but it attracts tourists and could be legalized only in the Amazon.

Fabio Feldmann

But what does that have to do with us?

Sérgio Besserman

Because the Catholic Church is the main obstacle. We have nothing to do with it. Imagine if a Jew would go into a casino! There, we know who will win the money.

But it need not be gambling. I'm using gambling as an example.

Paulo Faveret

The challenge would be to prioritize tourism, imagine what the supplementary activities would be that could boost tourism as an important activity for the region.

Sérgio Besserman

It is very strong support for tourism. Tourism is a great advantage for Rio and would be for the Amazon because it has counter-cyclical features. If there is an international crisis, foreign tourists are replaced with local tourists due to the effects on the exchange rate. And people want to travel. This is the most substantial crisis in the last 70 years, but hotel occupancy at the end of the year was the highest in the history of Rio de Janeiro. Except that instead of Norwegian tourists, there were Brazilian tourists.

Roberto Waack

Let me make an observation about the political issue. A key element is Brazil's participation in the international political game related to tariff and non-tariff barriers on commodities and allying this to the issue of environmental services.

We are taking part in a game in Doha, for example. We have very interesting opportunities to take the discussion of a country that typically produces commodities to a country that can better navigate the world adding value. The entire subsidy game is aimed at products with higher added value, and we are not including, appropriately, the environmental discussion in international trade transactions associated with the production of commodities.

We support the production of commodities, when, in reality, we could use added value and the environmental service game as an important currency in the Doha rounds. Not only in Doha but in major international discussions on barriers to forest products, such as FLEGT [Forest Law Enforcement, Governance and Trade – Law Enforcement, Governance and Forest Trade] in Europe, the Lacey Act [legal statute that combats the trafficking of wild fauna and flora], in the United States. We're not part of those discussions. I think there are very interesting opportunities when we think about these new mechanisms that are not part of the discussion.

Another element that I consider important is the signal we send out as a country with heavy investors in the tropical rainforest economy. In a way, this process is underway, because Norway has chosen to allocate resources to Brazil.

The Amazon Bank's investments in the tropical rainforest are almost nil. Most are earmarked for transforming the tropical forest into agricultural commodities. So I think it is very important that the country continue showing its own commitment to investment in this asset with very high risk. We know it is a high-risk area, but there are very interesting opportunities. We need, somehow, to show our commitment to this game.

Unfortunately, a large part of the investments into the Amazon rainforest are made by serious, foreign organizations – I have nothing against foreign organizations. Therefore, such an initiative on our part is crucial to demonstrate the confidence that we Brazilians have in this incredibly rich heritage that is the Amazon. In short, we need to improve not only investments, but also communication in this game.

Paulo Faveret

That is, aligning the strategic objective to preserve the Amazon, increasing sustainability via investments.

Roberto Waack

Actually, we have not participated up to this date. Where is Brazil's money as a nation investing in half of its territory, and it is not only in the issue of education but also to generate an economy, of business?

Adalberto Luis Val

In my perception, the Amazonian people do not want to live forever on environmental services. We need to develop immediate mechanisms to generate new employment alternatives and social inclusion in the region. It is the same concern that existed for

people making a living from the cotton sector in the United States. The population wants a reasonable alternative for the future.

There is a need to seek rapid reinvestment of these resources into activities that are sustainable in the Amazon. Ecotourism has, without doubt, great potential; contemplating nature has long been one of most sustainable activities that we have.

But we must not forget that the Amazon is empty, with only two airports, in Belém and Manaus, from which access to the rest of the region is possible. Today's ecotourist wants to go beyond Manaus, beyond Belém. I was just saying that: it is amazing, but we do not have an aquarium in the Amazon yet.

Sérgio Besserman

Nor in Rio de Janeiro.

Adalberto Luis Val

The largest living pirarucu fish I saw in my life was in Vancouver, Canada. And I have worked with pirarucu fish for 20 years. This worries me because we are still very far behind in terms of the infrastructure needed for high-standard ecotourism in the region.

Finally, a point that I consider of the utmost importance: *timing*. The moment is here. Either we act now or we will miss the boat. In science and technology, in economy, in social inclusion and so on. China, ladies and gentlemen, is already producing tambaqui fish at their aquaculture farms. The tambaqui is a common fish in the Amazon and does not naturally live anywhere else in the world. However, the Chinese, with a long tradition of aquaculture and fishing, may become the biggest exporters of tambaqui. Why? Because we missed the boat.

Another example: concern is arising over certification for imports of ornamental fish, an extraction activity that is extremely important to the region in the middle of Rio Negro and that science could have developed. The economic structure of this area could have already built a network of businesses; however, we made no progress.

Conclusion: there are initiatives in several countries, including China, for the breeding of ornamental fish for export. This is a market of US\$ 15 million per year, and we are missing the boat again. Therefore, timing for me in this whole issue is of vital importance.

Carlos Eduardo Young

Trying to be brief and returning to the issue of perverse mechanisms, the Amazon is still heavily dependent on transfers – Free Trade Zone, FNOs [Constitutional Financing Fund of the North] etc. Therefore, the problem is not simply to allocate more resources to the Amazon, because it is proportionally the part of Brazil that mostly depends on transfers. It is essential to create an economy of its own. More important than allocating new resources is to correct those that are already being allocated.

There is a document that was signed in 1995 called the “Green Protocol,” which was never implemented. Now is the time to enforce it, or else all this here will be for nothing. The Green Protocol must work, because with it, we can indeed begin to discuss another framework for agriculture, another framework for cattle-raising or even another timber industry. With the predatory timber industry, companies that sell certified wood are left by the wayside.

Energy and infrastructure, again, a contradictory signal. The biggest challenge in economics is to define what we want from the Amazon. If we want sustainability, then we should stop encouraging predatory investments.

Paulo Faveret

Any additional comments? Then, let us move on to solutions.

Mário Ramos Ribeiro

I want to address some of the points cited by Cadu [Carlos Eduardo Young] on the major challenges of the Amazon Region and return to the question raised by Tasso [Anderson] on services. James Buchanan, with a Nobel Prize in Economics in 1986, said the only way to sell an idea is to tell the same story in different ways. So I’ll tell you here almost the same

story in a slightly different way, the issue of the green input-product matrix and its relation to environmental services and what Cadu addressed: the definition of economic vocation of the Amazon. What is the Amazon's economic vocation?

In Marabá (PA), there are eight steel companies that rely on coal – which are those that should buy certified coal, but with certified coal they miss out on business opportunities, which encourages ecological crimes. Well, I will not get into this, for now. Is it the vocation of the Amazon to have eight steel companies in Marabá?

On the issue of tourism. We have had an extremely negative experience. Foreign tourists like the Amazon, but do not want mosquitoes, they do not want to get dirty, they want hot water in the shower and an air-conditioned hotel.

What am I trying to say? Those ecosystems, eco-services are specific things. What grows on the right bank of the Amazon will not necessarily grow on the left bank. This means that information, perhaps the most important economic input today, was trivialized by the sheer volume of the information in question. All of you certainly are always behind in reading; you have failed to read something today and every day you fail to read something.

The problem is that information is the most important economic input today, as long as one manages to grasp the so-called relevant information. What information is relevant? I am simply returning to the same story in a different way, the green input-product matrix allows some interesting things. Firstly, it is not an academic experiment; it generates enormous academic conflicts.

There is already one in use in Carajás, a result of joint efforts of a company and the IBGE. We attempted to get local information, I do not know to what objective, and it stopped. It did not serve as a matrix for public policy impact, but it could be improved with the amount of information we have today. For example, this input-product matrix in Carajás does not do what Tasso [Azevedo] is saying, which is the adding value to the payment of environmental services.

The input-product matrix we use in Brazil's national accounts depreciates the capital stock produced, but does not depreciate the stock of natural resources, claiming that it does not reach the market. It does not add investment into education, institutions, governance, and intangible capital.

So to convince you and be brief, it is the following: I think we should explore further the possibility of the BNDES – I am talking about the BNDES because we are here, but it is clear that this is a competence to be assessed by the board – just as the World Bank did, when it calculated wealth and the “legitimate savings rate” for 140 countries in the world –, working with something of this type specifically for the Amazon so that we are not left in the dark as to what the economic vocation of the region is. There is, there, for example, a huge discussion on mining.

Tasso Azevedo

I will seize an important idea which is the issue of steel mills in Marabá. The project has everything to be a great investment opportunity; it will suffice if it is done using a sustainable source. How can it be turned into an opportunity? By using the demand for biomass in the steel industry in order to generate a managed forestry asset. Thus, when the demand in the steel sector dries up, an asset will remain that can be used in any other forestry activity.

Interestingly, the process that is underway there is the opposite. The decision of one of the companies, as absurd as it seems, was: “Let us solve the problem of sustainability. We will import coal.” The initiative apparently would eliminate the problem of deforestation, but it maintains the environmental damages and does not redirect the economy towards the path of sustainability.

Paulo Faveret

We are approaching the end. Therefore, I will ask you to do one last round of interventions.

I propose a question: what do you consider the most important issue, the mother of all battles? On what would you concentrate your efforts? No matter what criterion; this is strictly personal. Who will start?

Sérgio Leitão

I will be very straightforward. The BNDES should lead the process in restructuring the production chain of natural resources in the Amazon, using the timber industry and cattle-raising as initial milestones.

A second recommendation: The BNDES must structure the system of social and environmental safeguards in the public financing process for economic activities in the Brazilian Amazon. Only the Bank is able to do so.

As specific suggestions, Tasso [Azevedo] has accomplished many things, but his work is still unfinished, which is the structuring of the so-called quota system for forest reserves. The recommendation is that the BNDES should structure a market of forest securities anchored in the quota of forest reserves under the Forestry Code, to start a recovery program for forest assets in Brazil, especially the Amazon. This will enable recovery to be a reality in itself, not just a desire expressed by all of us.

Actually, this is a criterion already recommended by the Guidance Committee of the Fund, but I would like to ratify that the Fund only supports the government for additionality – in which case the carbon issue concept fits like a glove on the criterion for budget additionality. That is, there is no sense in the Fund supplying the resources, which are periodically subject to contingency analysis.

Sérgio Besserman

First, to support the integration of modern business with suppliers of local goods and services, in the concept of an integrated chain; the BNDES' budget for business; Amazon Fund leveraging where necessary.

Second, to revive the Green Protocol as a federal government policy.

Third, to create a PMAT [BNDES program for the modernization of tax collection]. Support for management from governments and municipalities, in the same PMAT model,

only it will not be aimed at tax collection. There is a problem: the return from PMAT is financial, in the form of increased revenues, and the return from a similar program would be based on externality or some mechanism that the Bank itself might take ownership of, but not fully.

Support Arpa, the largest program for protected areas in the world. It is a well-established brand globally.

On tourism, allow me, although I am not an expert in the area, but as an economist, to make the following observation: tourists want first-class services, the rest is secondary. If he is going to see fish, Círio of Nazareth, Christ the Redeemer, the Empire State Building, the Atacama Desert, this is secondary. What he wants is to be received in a first-world standard. If he sees a white heron, he will think that is fantastic, provided everything works.

And, especially for the BNDES, transparency and credibility: Yes, the Bank will make mistakes, but that is part of the game. Forgive me, but I'll tell you a brief story. A guy is walking into the woods and starts to see a target with an arrow always in the bull's eye, so he begins looking for the best archer in the world who only hits the center of the target. He finds the man and asks: "Sorry to bother you, but you are the greatest archer in the world; you only hit the bull's eye, how do you do it?" and he replies: "Ah! First I go there and shoot the arrow, then I paint the target around it."

So it is obvious that the Bank can go wrong, it will hit the bull's eye, it will go wrong, it will hit the bull's eye. The environment is a very sensitive topic. Therefore, full transparency.

The central issues, in my opinion, are: Basic and advanced education. Education, education, education. I echo the words of Professor Adalberto [Luis Val]: knowledge, support for research centers and production of knowledge.

And *Jihad to Jihad*, truly, that is the day when we will manage, with a myriad of efforts, mainly economic, to transform the 'Deforestation Belt' into the belt of sustainable development.

Sérgio Abranches

When you said “the mother of all battles,” I changed my mind about what I would point out as the first issue, because I made a brief retrospect of my relationship with the BNDES. It started when I was a student; I did my doctoral thesis on industrial policy, and the BNDES was an important player in my thesis.

Then I was summoned to a meeting something like this, maybe not as creative, but in the spirit of consultation. At the time, I was working with poverty and social issues and was wondering how the Bank could work in the social area. Then, I had another such meeting to discuss the competitiveness of Brazilian industry in the 1990s, and now this, when the Bank’s acronym was given the “S” for sustainability.

Looking back, I would say the following: over this period, Brazil became shortsighted, and could no longer see the long term, and this has always been one of the great capabilities of the BNDES. I hope the Bank does not lose that ability when it comes to thinking about sustainability.

Without a doubt, obtaining immediate results is very important, but the BNDES has a capacity for leverage and for multiplying which is very important, and it should use this to become the catalyst for changes that lead to sustainable long-term transformation in the Amazon. And in this way prepare the Amazon to be the contemporary region of the twenty-first century, since the region could not be contemporary during the twentieth century, in Brazil.

I would rule out any kind of incentive for economic activities that are condemned throughout the twenty-first century. I would put my *seed money* into activities for the future, obviously within the vocation of the Amazon. There is no use thinking that the Amazon will be integrated by repeating the model in the South and the Southeast. There are other rules, and I think that the BNDES needs to start thinking about these new rules of the game and go back to being the agent of the future, thinking about the next 50, 60 years.

If we look at Brazil, under the perspective of 2050, the country will have become a powerhouse of the twenty-first century if it has managed to convert its economy into a low carbon economy. And this should be the central objective of both the Fund and the BNDES: to formulate a policy for the country, a development agenda that is compatible with the determining factor for change, which includes climate change and the cost of carbon.

To prolong the foresight is absolutely essential for the Bank to take on a historical role in the future, one that it has always had, and continue to be a player in the history of Brazilian development.

The second point is: both the “S” which stands for social in the BNDES acronym, the “E” for economic, and the “S” for sustainable depend largely on investment in institutional development, in governance and intellectual capital.

It is no longer possible to think about the possibility of development by investing only in what generates volume and financial return. Either we invest in social capacity, in the collective capacity to build, competitive efforts and income generation, wealth, and cultural change, or we will continue to pursue development for another century. All countries that have developed managed to leap from quantity to quality. Our destiny in the twenty-first century is linked to the fate of the Amazon.

Carlos Eduardo Young

First, you must create selective mechanisms to support efforts and projects aimed at sustainability. This is basic: recovering selectivity. For this, we must create, first of all, restrictions on financing for non-sustainable efforts. It is absurd to think that sugarcane is the solution to labor, that cattle-raising is the solution to development, and that predatory timber is nothing but than the felling of trees.

Currently, there is no selectivity in the allocation of resources, and the spree of perverse incentives must come to a halt. Being selective, we can effectively create attractive conditions for actions and projects identified as priorities. And I would like to remind you that neither the Amazon Fund nor the BNDES are islands.

It is no use solving a problem here and opening up a gate to the other side. There must be consistency in the efforts of federal financial institutions, implementing the Green Protocol, which today exists only on paper. The Ministry of the Environment can and should be the technical partner, and the BNDES should lead the efforts in coordinating resources. The premise in this case is that the biggest problem lies in the use of available resources in predatory actions.

In short, it is no use putting out the fire and pouring on gasoline at the same time. That alone would, in the very short term, be the main contribution of the Bank aimed at rethinking sustainability.

Specifically for the Amazon Fund, we must recognize that it is an important step forward, but insufficient to solve the problem of deforestation, to which it is linked. The Fund should prioritize structuring efforts for fundraising in the market, the creation of carbon credit mechanisms for REDD, reforestation. Let's include reforestation in the debate, it is not only the REDD. Incidentally, why do we discuss the more complicated issue while the most obvious is forgotten, which is simply to allow trees to grow?

The Fund should prioritize efforts geared towards strengthening governance and public policy programs. Projects for the private sector should seek market solutions. In this sense, what one can imagine from the Amazon Fund is that it is aimed at incubating markets, such as the REDD market and reforestation, but not sustaining them in the long-term.

I also defend extensive discussion with state governments, which is absolutely crucial, because ultimately, they are the ones who will be taking care of deforestation. Increasingly, and rightly, our model has sought to move the control to the state government.

As a suggestion for efforts in priority sectors, obviously besides those already mentioned – governance, the public sector, sustainable poultry farming and cattle-raising with certification –, I emphasize the issue of purchasing and credit policies.

In relation to tourism, it should be taken into consideration, including protected areas with potential for visitation; otherwise, it is a waste of money.

Adalberto Luis Val

In these 30 years of mine in the Amazon, I have learned one specific thing: for a complex issue such as the Amazon, there is no single solution. We must think big and diversely, just as the Amazon is diverse.

The main legacy we can leave for the region is the revitalization and expansion of the information production chain on the Amazonian environment. Without this information, nothing can be done. I think we should start with elementary education and move on up to the socialization of information.

This country makes a serious mistake in the area of education, as well as science and technology, which is not socializing information. What we know about the Amazon today is basically what comes through American television. Personnel training for the region is vital. There is no way to qualify the required personnel for the future of the Amazon without a quantitative and qualitative expansion of educational structures in the region.

Another point is the issue of structuring regional product chains, including tourism, aimed at generating income and social inclusion as a way to reduce conflicts. It is no use asserting that we need to keep the forest standing if we not develop alternatives for the social inclusion process. I also consider it important to establish technological institutes to generate new products and make the most of regional potential by maintaining the standing forest. Eighty percent of the fresh water in Brazil is in the Amazon, but, today, when we need some information on the issue, we have to buy it from other countries. Therefore, we need to acquire this issue quickly.

I would go even further: in addition to the water issue, there is the issue of biodiversity. We are very far, in fact very, very far from having final numbers for the size of such biodiversity. But that does not mean we cannot reclaim what we already know. We can move forward, there is already extremely relevant information on this.

One more issue: the insertion of environmental and cultural characteristics of the region in the elementary educational process developed in the Amazon. I think that, without that, we will continue teaching the boys that “E” is for elephant and that river water is blue. We will not move forward that way.

One last point I would like to stress is the following: the threats to the Amazon are not foreign; the threats to the Amazon are here, within our country, and include two main aspects: first, the lack of information and, second, society's lack of definition regarding the region.

Fabio Feldmann

In order not to be repetitive, I will emphasize two aspects: The first is to make it clear that the role of the BNDES is to be an inducer of economic instruments for economic activities with low environmental impact and that generate income.

The other aspect is the support for institutional strengthening for land title regularization and environmental governance, as well as for generating environmental assets.

Guilherme Dias

I will dwell on the micro aspect. In the short term, we will get more results if we change the pricing system of the products from sustainable forest management. For example, if we create an auction system for these products, bringing the producer in the Amazon together with the buyer outside the country. No more middlemen.

This is perfectly feasible, with today's digital and information systems. But it will require changing the laws. Transparency is the essence of this system. Knowing who is selling and who is buying and the price of this auction will contaminate the whole market, even the domestic market for that type of product.

Mário Ramos Ribeiro

Among the efforts I consider important for the Amazon, some suggested to the BNDES, others remain general suggestions, is the implementation of a green input-product matrix for the Amazon, along the lines already used for the World Bank. Why?

First, because it allows us to calculate the rate of genuine savings as an indicator of economic and environmental sustainability. This savings rate is dropping, falling, it is negative.

What is the trend? This can be disclosed, just as FGV [Getulio Vargas Foundation] and Fipe [Foundation Institute for Economic Research] publish their price indices.

Second, because it contributes to the calculation of the amount to be paid for services and efforts in the ecosystems. Generating information that is actually relevant, which Adalberto [Luis Val] called the “chain of relevant information”.

An input-product matrix allows access to a lot of information and, therefore, the classification of ecosystems through its services and efforts. In addition, it generates indicators of economic and environmental statistics, which then subsidize the making of public policies. Effort number two: this stems from implementing the green input-product matrix.

Another effort is land title regularization. I agree with what has been said here about the relationship between land title regularization and social inclusion.

The third important effort would be the making of public policies to physically and technologically integrate the Amazon into Brazil. I was very impressed with the report that Jeffrey Sachs published in *The Economist*, in which he divided the countries into innovative, technology absorbing and excluded. Among those in the excluded group were the entire Amazon region, sub-Saharan Africa, the Asia region.

I imagine that this is an extremely important moment for the BNDES. I think the Bank should lead the implementation, the management of this green input-product matrix for the Amazon. The World Bank does this for the world and I see our BNDES as our great think-tank for the Amazon Region.

It seems I’m beholding a redefinition of the BNDES’ vocation, which is the challenge of climate change. It is a lot of work, but I am very hopeful.

Tasso Azevedo

We will have to work hard with all the ideas that have been exposed here. A suggestion for after the completion of this cycle is that there is a consolidation of the debates and the result is formally delivered to COFA, the Guidance Committee of the Fund. In my view, it is a way to


improve the role of the Committee, whose duty it is to make important decisions, guiding the BNDES on how to apply resources.

Since many first rate ideas emerged from this meeting, I believe it would be interesting to present them to the Committee, and it would be very helpful if we did this in an organized way. It was an important opportunity for the long road ahead of us.

Sergio Weguelin

You will be leaving soon and will leave us with the task of reflecting on all these issues. We plan to continue the conversation, we will have other seminars. I think these meetings will generate a critical mass that will allow us to begin focusing on our work plan. Certainly, more questions will be raised, and I think this is the right path for the Fund.



A high-angle photograph of a dense, lush green forest. The foliage is thick and vibrant, with various shades of green. On the left side, a large tree with a thick, light-colored trunk and a wide, spreading canopy is prominent. The rest of the image is filled with a dense canopy of smaller trees and branches, creating a textured, layered appearance. The lighting is bright, highlighting the individual leaves and branches.

Meeting II

Participants



Adalberto Luis Val

Biologist, researcher in the field of biodiversity and adaptations to the environment. Director of National Institute for Research on the Amazon (INPA) and head member of the Brazilian Academy of Sciences.

Ana Lúcia Delgado Assad

Economist, PhD in Scientific and Technology Policy at the State University of Campinas, and responsible for the National Cooperation Assistance of the CNPq. She coordinated the Biotechnology and Health division of the Ministry of Science and Technology.

Ângelo Augusto dos Santos

Master's and PhD in General and Applied Ecology, institutional advisor of the Brazilian Biodiversity Fund, former scientific coordinator of the Biological Dynamics of Forest Fragments project (INPA Accord – National Museum of Natural History of the Smithsonian Institution).

Antonio José Junqueira Botelho

Research coordinator of the Instituto Gênese (PUC-Rio), associate professor at PUC-Rio, with a Master's degree in Urban Planning from Cornell University and another in Technology and Society from the University of Paris IV. He has a PhD in Political Science from the Massachusetts Institute of Technology.

David Oren

Biologist, Master's and PhD in Biological Sciences from the University of Harvard, coordinator of Biodiversity in the General Coordination of Ecosystems and Biodiversity at the Department of Policies and Programs of Research and Development, Ministry of Science and Technology and executive coordinator of the Geoma Network.

Science and technology in the Amazon Region: Where to invest ? How to operate? What are the solutions?



Ennio Candotti

Physicist, professor of the State University of Amazonas, General Director of the Museum of the Amazon former president of the SBPC (1989-1993; 2003-2007), former publisher of magazine the magazine *Ciência Hoje* (1982-1996). He won the Kalinga/ Unesco award for Scientific Promotion in 1999.

Ima Célia
Guimarães
Vieira

Former Director of the Museum Paraense Emilio Goeldi. Graduated in Agronomy from UFRA, Master's in Genetics from USP and PhD in Ecology from the University of Sterling, in Scotland. She develops research on dynamic forestry economy and ecological restoration.

José Seixas
Lourenço

PhD in Geophysics From the University of California, president of the Commission for Implementation at the Federal University of Amazon Integration, of the Forum Brazil-France and of the Commission for Implementation of the first federal university in the Amazon, the Federal University of West Pará, Santarém.

Marco Antonio
Raupp

Mathematician, PhD from the University of Chicago, president of the Brazilian Society for the Progress of Science, coordinator of the Nucleus for the Technological Area in São José dos Campos, former director of the National Institute of Spatial Research and of the National Laboratory of Scientific Computation.

Odenildo
Teixeira Sena

Master's and PhD in Applied Linguistics and Language Studies from PUC-SP, professor at the Federal University of Amazonas, president of the Support Foundation for Research of the State of Amazonas and president of the National Council of Support Foundations For Research.

Tatiana Deane de
Abreu Sá

Agronomist, specialized in Ecophysiology Vegetal from the Institute of Hydrology and in Agrometeorology from the International Institute of Tropical Agriculture, executive director of Embrapa for the Amazon, professor at the Federal University of Pará and the Federal Rural University of Amazônia.

The second meeting brought together several experts related to the area of science and technology. At the opening, managing directors Eduardo Rath Fingerl and João Carlos Ferraz thanked everyone present and spoke briefly about the work of the Bank in the environmental sector and the objectives of the meeting. Rath Fingerl made a brief presentation of the performance of the new Environmental Division and explained the goals of the panel to the participants.

“What we’re seeking here is to get input from you, the experts, so that we can achieve the efficiency we seek to manage the Amazon Fund,” he said. That is, extracting knowledge to collaborate in building an effective administration strategy, which requires an integrated view of the region. The idea to invite scholars working in the region was to avoid a strictly exogenous look at the issue of science and technology in the Amazon.

John Ferraz, one of the new division’s creators, who headed negotiations with Norway for the creation of the Amazon Fund, emphasized the issue that will make all the difference. The presence of the BNDES in the environmental scenario has gained scale with the creation of the Environmental Division, due to its operational character, which increased the importance of this issue in the Bank’s policies. In other words, the BNDES joined the game of sustainability.

“When we started the BNDES’ planning process, which outlined long-term scenarios stretching beyond 2020, one of the issues that emerged consistently and prominently, to the surprise of the Bank’s own managing directors, was the environment. This is an important sign,” said Ferraz.

Sérgio Weguelin, deputy managing director of the division, stressed the importance of listening to civil society in the administration of the Fund in a participatory process that fosters the Bank’s dialogue with local institutions. The exchange of ideas between the BNDES’ team and the experts will not be exhausted in the first three rounds of meetings. “We want to continue talking to each of you with; with the entities you represent.”

Paulo Faveret, responsible for leading the debates, proposed a dynamic model to the participants to help guide the debates. Initially, each participant should address two basic ideas, key issues related to the sector of science and technology in the Amazon, with as much objectivity as possible. Guests should highlight solutions, not make diagnoses per se. What are the outlines, boundaries, players, problems that can be mapped in advance?

What challenges does the country face and how can investment in scientific research contribute to sustainable development in the Amazon. What are the proposals? “We will seek solutions from present to future, not from past to the present. The important thing is to work with the knowledge of this group, based on their experiences, on their knowledge,” explained Faveret.

The following is a summary of the main points raised.

Main Points:

1. *Knowledge* – The need to generate knowledge on the region and consolidate this information. The issue emerged as the first and perhaps greatest of all concerns. Knowledge in its broadest sense, ranging from the preparation of children in elementary school until graduate education, in Master's and Doctoral degrees.
2. *Establishing* – Establishing intellectual capital in the region. Environmental protection requires selectivity, selectivity requires knowledge and knowledge requires intellectual capital in the place. This understanding also emerged as one of the central issues for the Amazon.
3. *Efforts* – The need for investments and initiatives to transform knowledge into practical initiatives.
4. *Adding value* – Adding value to supply chains and creating processes for the use of technology.
5. *Management* – The need for successful results from the Amazon Fund in the short and medium terms. This will help legitimize the establishment of the Fund and ensure continuity of donations. One of the tools for successful projects lies in the empowerment and strengthening of existing institutions and organizations, and the knowledge of the specificities of the region.

Besides the five most emphasized items, there were also concerns for the integration issue. More specifically, integration of scientific and socio-production bases, governance and management of systems to monitor efforts. That is, a number of issues concerning the integration of science-technology-production, science-technology-real world.

The experts also stressed the need to create an agenda for the Amazon, which includes outlining a Deforestation Belt that covers a virtuous circle of sustainable undertakings. Objectively, investing in setting up businesses in deforested areas so as to form a barrier against expanding deforestation of the standing forest.

And the principle above all: opportunities and challenges for science and technology require the training of professionals in the areas of processing, ecology, mining, geology, and development of urban and regional management.

► Information is the focus

Adalberto Luis Val – I want to highlight two aspects: the need for consolidated and comprehensive information on the region and the transformation of existing knowledge into effective efforts.

Regrettably, what we learned after a long time in the Amazon is that you cannot import information. We must produce this information in the region, for the region, in accordance with the needs.

An important aspect is that in most cases, we tend to think of the Amazon as a forest or an area of immense biological diversity and forget that some 25 million Brazilians live there in the region, who require infrastructure for development. Of course, this development needs to take into consideration the characteristics of the region. It is also important to note that the Amazon is responsible for almost 10% of Brazil's GDP, whether coming from the government's own investment in the region or from production there.

The fact is that the absence of an extensive database leads to hasty actions. This aspect needs to be fixed. There is a clear agenda for the Amazon as a whole, so that we can safely plan efforts at different levels in the region.

We must also keep in mind that we are not starting from scratch. There is a fairly significant amount of knowledge that needs to be turned into immediate efforts. Such efforts must be aimed at generating income and social inclusion; otherwise, a large number of people will be marginalized.

► Information + knowledge = result

Ana Lúcia Assad – The first thing that came to me as a focus, as two central and important issues for the region, is precisely the need for knowledge on biological and human resources, especially when we talk about biodiversity and the economic use of it.

We must, above all, broaden the scope of information on these biological and human resources in a systematic and organized manner. What they are, how they are distributed,

how they reproduce, among other issues that deserve and need to be answered. And turn that scientific knowledge and existing technologies into economic and social results, considering the needs and peculiarities of the region. We need to know and respect the characteristics of the Amazon region, not only the aspects of several ecosystems, but also with respect to human, social and cultural organizations, since they are special and differentiated from other regions in the country. We must transform that knowledge into science and technology, with economic and social results for the region as a whole.

► Deforestation belt and investment in biomass and renewable energy

Ângelo Augusto dos Santos – The objective to control deforestation and reduce greenhouse gases – which is a big challenge – could be achieved if we thought of a deforestation belt in which investments would be made to set up companies which in turn would act as a “wall,” a barrier to the expansion of deforestation of the standing forest.

We could verify the potential for biomass production of native species and other species for agriculture and gasification technologies, which would be interesting for producing this energy.

The Amazon Fund could invest in these independent companies that produce energy in the region of the Deforestation Belt. The degraded land would be recovered with agro-forestry systems aimed at producing biomass for energy (biofuels and electric power). In a more sophisticated strategy, on degraded land, agro-forestry systems could be implemented aimed at food safety and energy security. For me, the dichotomy between the production of food and energy is false.

► Monitoring is fundamental

Antonio José Junqueira Botelho – I wish to emphasize two points. The first is the need to generate knowledge, information, and by the very nature and duration of the Fund, the importance of producing a sort of map of knowledge, of experience.

This leads to the second point, which is the lack of institutional and local capabilities in the region. The learning issue may lead to monitoring of permanent efforts, so that we can constantly revitalize this agenda.

The fund will last 20 years, and the agenda will evolve over time. Therefore, a rather critical system is required to monitor and assess, which will lead to learning even with the lack of local qualification.

► **Emphasis on environmental services**

David Oren – The goal of the MCT [Ministry of Science and Technology] is to defend the biodiversity of the Amazon by adding value, especially through biotechnology, although it is known that biotechnology is something that takes time. One does not produce a substance against cancer overnight.

Another important aspect for ensuring biodiversity in the Amazon are the environmental services other than just carbon. These include a much broader range, such as the hydrological cycle, the very maintenance of biodiversity through more urgent efforts to ensure it.

Our foresight of environmental services may be the quickest and easiest way in terms of marketing to meet the demands of society.

One must also note that no matter how the Fund is being managed in Brazil, the Amazon does not end at the borders of Brazil. The Yungas, which is one of the most productive and most densely populated areas on the eastern side of the Andes, is precisely the most deforested area in the Amazon.

It is good to know that 20% of the funds can be spent outside Brazil, the rest in the Amazon Basin. No use putting a stop to deforestation in the Brazilian Amazon if this deforestation is exported to our neighbors.

► The issue is innovation

Ennio Candotti – As we are among economists, I will try to be provocative, to shake up, somehow, some of the convictions of our environmental organizers.

There are, in my view, other values at stake that are more important for the region than its role in absorbing carbon or not. For example, we do not know why all turtles leave the water together when they lay eggs. It is a phenomenon that researchers are studying and for which there is no clear answer yet. This is important, strategic information for many areas.

Let's say there is nothing trivial in the communication among butterflies. But when it comes to innovation, I always see everyone thinking about techniques, about innovation from the past. In other words, about what we know in terms of improving just a little bit. But there is never any long-term risk investment to foster innovation in new fields such as communication among butterflies.

Why not seize this huge lab in the Amazon to seek innovations that will actually change the economic life of the world in coming years? Understanding how butterflies communicate is probably as important as the discovery of electromagnetic waves in the 19th Century.

We talk about hydroelectric power plants. The Amazon is an incredible machine for transforming energy which is largely unknown to us. At best, we use the timber, which we turn into ashes to produce steam that drives a turbine. There is a universe of information and knowledge to be exploited, and we must think about how to do this.

In physics, when attempting to understand the fundamental forces, we build large machines, worth billions of dollars. Our great accelerator [of particles] is the Amazon itself. We have these challenges; however, very little is invested in the use of this machine, this laboratory to produce knowledge and innovations.

Little is known about the transmission of electromagnetic waves in areas of high humidity, and thus we cannot establish reliable communication lines in the region. Resolving this is a huge innovation in the world of development.

We hope that suggestions come from abroad about what to research here. But more consistent suggestions on researching in the Amazon will never come from abroad, because the Amazon belongs to us. So, either we take this prospect to open this window of opportunities and challenges, or we will continue discussing how best to conserve forests and allocate resources so that trees are not cut down. In this case, it will be better to call the police and hand the issue of environmental protection over to them. Environmental protection does not exist without knowledge, it is selective. And if it is necessarily selective, we must develop knowledge in order to be effective.

► Investing in intellectual capital

Odenildo Teixeira Sena – I would say that from a more general point of view, and I have been an attentive observer, if we do not move somewhat faster – and the opportunity opened by the BNDES is a path – we'll reach a situation in which the Amazon will be utterly trivialized.

I'm tired of hearing that the region is strategic for the country and the world, but actually, I do not see, apart from a very large local effort to provide answers to this area, efforts that are consistent with the strategic vision. There's a lot of marketing on the region; hence, my concern with this trivialization.

If the main topic is preservation, one cannot imagine preservation without generating knowledge. And to generate knowledge, intellectual capital is required.

The Amazon is extremely poor in intellectual capital. Indeed, there has never been, and there is still no, compelling efforts to overcome this difficulty. How can you expect a region as strategic as that to give answers and be strengthened when it brings together only 4% of the country's researchers?

On the other hand, there is no reason to start from scratch. We know exactly what we want from Amazon, because, despite this difficulty, this shortage of researchers, there is a small group in place that has produced significant knowledge to understand and oversee the region. There are efforts underway, many of which already have visible results that need to be strengthened.

► Importance of the knowledge chain

Ima Célia Vieira – Three aspects have characterized the occupation of the Amazon: a total lack of planning, total illegality of the occupation process and a waste of natural resources.

These three issues have led to deforestation, which I associate with the issue of degradation, which are the major environmental problems in the Amazon. But it is important to know what the deforestation and the degradation routes are, the economic activities that motivate them, drive the regional economy. They are, mainly, cattle-raising, in the case of deforestation, and timber activity, in the case of degradation.

These routes are little understood. How have cattle breeders been operating in the region? What is the infrastructure used, the availability of agricultural credit, the way they occupy the land, the issue of obtaining suspicious land titles, the land ownership issue, very serious in the Amazon?

In Pará, 49% of the areas are protected and 49% of the state and federal areas need to be regularized in terms of land titles. The state of Pará is the representation of what will happen in the rest of the Amazon, it is the most complex state in terms of land occupation and, therefore, illegality. I think it is where the integrated government efforts should focus more.

I do not see the State planning any efforts. Timing between federal and state efforts is very different and this has caused huge difficulties in resolving environmental problems in the Amazon.

What worries me, besides this very little academic-scientific representativeness in the Amazon, compared to the rest of the country, is the lack of integration of the scientific bases with the socio-production bases. I think that this is a very important issue that should be part of the BNDES' agenda.

One of the ideas upheld the association of knowledge chains with production chains. I think it is important if we can advance in the scientific agendas, where we would have forestry knowledge chains, for instance, associated to the forestry production chain.

As for monitoring, the answer would be to implement observatories – what I call “observatories of land use and deforestation” – at a municipal level. At a federal level, there are control failures. It does not work.

With regard to degradation, there are forestry restoration programs and a scientific structure in the Amazon related to the issue. Strengthening forestry restoration laboratories and making them dynamic is what is lacking, especially in Pará, where degradation is higher.

► Qualification

José Seixas Lourenço – My concern over the last 35 years has been the attraction and establishment of human resources in the region, especially when we are talking about science, technology and innovation.

The Amazon is, today, the largest mineral producer in Brazil. The state of Pará will exceed mineral production in Minas Gerais in a few years. There are some of the largest mines in the world, and there is a vast scarcity of qualified personnel in the environmental area related to the mineral issue.

This issue powerfully interfaces with different sectors, such as infrastructure. The only railways in the region resulted from mineral operations, and some of the power plants built were aimed at servicing mineral projects.

I would like to strongly recommend that the Fund be concerned with providing more support to the research of environmental issues resulting from mining, since we already have a scenario of at least more than 100 years of exploration.

► Organize knowledge and change it into economic value

Marco Antonio Raupp – I am not a specialist in the Amazon; only an attentive observer. I believe that the creation of the Amazon Fund is an opportunity to organize efforts in the region and to know what science can contribute.

The answer is knowledge. Generating knowledge on this entire Amazon system and listing it – that's where technology comes in – with the ability to use it to generate valuable economic goods. We have biodiversity, water, underground riches. Science can contribute by organizing this knowledge, pointing out adequate ways to explore and interact with

production chains that offer to invest in the region. In other words, to change all this potential into economic value.

This is a long-term program and, as such, it must present examples of intermediary success, cases of successful examples. Otherwise, the program will be doomed to fail.

Intermediary success consists of having an effective use, effective capability of the institutions that already operate in the Amazon. There are structures, scientific systems operating in the region at federal, state and international levels, such as those conducted by institutions in neighboring countries.

The opportunity for the Fund to operate concerns enhancing the capacity to structure these systems. The State System of Science and Technology, built in the state of Amazonas and which has just begun to be built in Pará, needs to be integrated.

The role of science and technology is to generate information on what happens in the Amazon, on the Amazon system, on the waters, the underground, biotechnology. We do not, at the present time, have a system with these features available. Therefore, it needs to be structured. If we want to make the Fund feasible, we will have to obtain immediate results in the region. And this means correcting the efforts of institutions operating at the location. If we take up new proposals without considering what is there, we will simply be generating counterexamples of what we plan to do.

► Focus on the Amazon's differential

Tatiana Deane de Abreu Sá – The issue of territory is extremely important and in keeping with efforts to detect and qualify this diversity. In this regard, zoning emerges as a fundamental initiative.

We cannot understand that urban and rural construction in the Amazon is equal to that in other regions because there, for instance, there is the issue of navigation, highways, mining and agriculture.

The big differential in the region, in terms of agriculture, and which has not been explored, lies in the fact that we still have live witnesses of early agriculture: archeology is showing that agriculture and aquaculture in the Amazon were already a reality a long time ago. There are tribes that are revealing this in a small area.

Agriculture in the Amazon is not conjugated only with two verbs – plant and cultivate. It must have, at least, three: plant, create and manage. But manage what? The primary, secondary vegetation and the watercourses. While these activities are not brought into play, in research, in teaching, in public policies and in industry, we will continue losing.

An old battle of ours is the need for a chain of knowledge. What region, from the agricultural point of view, has the possibility of simultaneously ensuring products extracted from mining reserves and legal reserves on properties, and also has this same product as a household item, such as açai, cashew nuts, and others?

I consider it important to take advantage of the chain of knowledge in mining in favor of the rest. We are losing this connection, isolating different policies, different ministries to manage the forest. It must be part of the whole. Chains of natural resources can be supplied at least in part by the production of native or planted açai trees.

This issue is embedded in another point which was already raised: when we offer solutions and treat these issues, we are addressing an aspect that transcends our frontiers. For starters, it is a Panamazon issue. Until quite recently, we imported techniques; tropical agriculture did not exist formally. We must evolve, including in the profile of our investigators, at the research centers in proportion to changes in paradigms.

But it is not, exclusively, about contracting for the sake of contracting. Initially, we have to organize information and, from then on, define very clear issues. For example, we must not think about aggregating value only to products in the primary forest, to the tangible sustainable Amazon agriculture. We must have an industry for this sustainable agriculture, a regional industry with market potential for the Panamazon, Asia, Africa and other regions.

Lastly, we need to organize, qualify this diversity better. Not only repeat that we are different, but also organize the policy based on these differences.

► Best courses in the region

Adalberto Luis Val – There is no doubt that monitoring the Amazon is extremely important and that there are fantastic laws for the enforcement of such monitoring, but I believe this process of monitoring the generation of income generation and social inclusion is growing distant.

Recently, we heard the news about contracting two thousand forest rangers for the Amazon. I think that for each ranger hired, we should have hired five scientists. I think these dichotomies must be worked out.

There is also another relevant matter. We have only about 3,500 doctors in the region. But it is no use thinking at the top of the pyramid. We immediately need to work on elementary and high school; otherwise, we will not take the expansion of the base of the pyramid forward so that we are able to train personnel right there in the region. We must work these dichotomies out.

Professor Odenildo put this quite well. For example: there are two Botany courses in the Amazon, one in the state of Amazonas, and another in Pará. If they are closed, another twenty years will be required to develop another course, and goodbye to all that information.

Without immediate efforts in some areas, we will continue to have very compelling, very beautiful speech, but, in fact, we will continue to have no efforts that can be reverted into improvements in the development process in the region.

At the end of the first round of interventions, in which the specialists pointed out the main challenges in the Amazon Region, a stage of debates ensued on the main issues presented during the first phase of discussions.

Paulo Faveret moved on to the second stage of the brainstorming session, proposing that, after the initial round of presentations, each one of the participants writes down the major challenges, needs and opportunities in the region and put them on a board so they could be visible to all. With this mapping, in the following round, the specialists discussed the most emphasized topics.

The following topics were covered:

▶ *Integration*

The challenge of integrating science with the world of production; integrating the scientific scope with the socio-production sector; opportunity for integrated operations.

▶ *Governance*

Management by creating institutions, programs and systems to monitor efforts.

▶ *Deforestation Belt*

Creating a virtuous circle of sustainable undertakings.

▶ *Creation of a knowledge agenda*

Producing knowledge, establishing knowledge in the region, consolidating information on the Amazon and handling this information.

▶ *Strengthening research institutions*

Better qualification of training bases, concern with budgets, personnel and the training of professionals.

During the second stage, the academics were requested to share their thoughts on each topic, with the objective of pooling ideas together, but not to narrow the focus. That is, there was no concern with reaching a consensus. Then, another round of discussions was opened focusing on some of the proposed topics. Below, a summary of the academics' considerations.

Ennio Candotti

We must start by promoting an understanding of what production is in the economic universe and in the scientific universe. We do not understand the reasons behind the economy, and the economy does not understand the reasons behind science. We must foster an understanding between two worlds, two logics, two values.

Antonio José Junqueira Botelho

We can expand the idea brought up by Ennio [Candotti] – the meaning of cultural differences – and expand the very context of integration in the direction of a chain of innovation. The opportunities lie in increasing the number of qualified researchers in the region.

Consolidating and generating this information chain for the Amazon is necessary, besides offering these researchers a differential qualification in the area of entrepreneurship and innovation, for instance. This is the opportunity we have identified in this chain of innovation, in terms of preparing new researchers.

Marco Antonio Raupp

In addition to the conceptual issues mentioned by Ennio [Candotti] and by [Antonio José Junqueira] Botelho in the list of entities generating knowledge on the Amazon and the entities that will transform this knowledge into goods with economic value, that is, companies, there are important operational issues in this regard, which are not solved not even in the most advanced states, such as São Paulo and Rio de Janeiro.

The research institutions are basically public, and the companies are private institutions. At the present time, in large urban centers, we have serious problems with this relationship and, no doubt, we will face the same issues in the Amazon.

The present legal framework discourages this relationship, due to specific incompatibilities. When new laws are made, they are not fully compatible with the existing scenario. And lawmakers are conservative in their interpretation. This issue prevents the progress in this matter. There is a demand to take scientific knowledge to the companies and, at the same time, there are difficulties in the legal framework to make such a process feasible.

Tatiana Deane de Abreu Sá

Integration of all these ingredients surrounding these topics related to the peculiarity of the region is lacking.

Adalberto Luis Val

In fact, there is a need to think the issue through, in an integrated way, and I suggest implementing projects that demonstrate this. There is a huge series of products in the area of disease diagnosis, with already patented kits, and several initiatives in the timber and food areas that need an engineering process that could enable the transfer to the private initiative.

Another issue I would like to call attention to is the idea of maintaining the forest standing. We must work quickly toward developing products that aim at achieving this goal, keeping the forest standing.

There are two paths that, to me, seem ready for us to take with good perspectives. One of them is biotechnology, used as an extremely important tool within this context. The other is nanotechnology, which will enable us to work faster in this direction. We must develop a set of local commodities that can compete, in terms of cost, with those already consecrated in the market place, such as soybean, meat and ethanol. It is up to us, in the area of sciences, to develop alternatives for this competition.

I further highlight the importance of realizing the fact that we do not have, at this moment, any product in the Amazon in a scale to meet the market effectively. So, we must think about supply chains in which we can maintain large-scale production in the region.

In the Amazon, there are, at present, three thousand species of fish. In spite of that, only about 20 of them are used commercially. Even so, there is not, in any case, an effective production capable of meeting market demands, even if that demand is domestic.

José Seixas Lourenço

We must restore the interaction between universities, research institutes and the business sector, in the blueprint of traditional and successful experience of the incubators. The topic related to incubation warrants strong support, especially because it starts to move towards the structuring of technological sectors.

The first experience arose at the Federal University of Pará, in the mid-1990s, with a focus on the area of biobusiness, particularly the cosmetics market. The nuclei of technological

integration are very important because they make the interface between the knowledge generated at the institutions with the business segment.

Another significant issue for the BNDES is the local production systems (APLs). We made investments all over Brazil, particularly in the Amazon, and can say that the APL experience was a success. We used the technological-platform approach, which is to join undertakings and academia in a dynamic process. With this strategy, it was possible to identify the problems in these undertakings and the solutions.

Odenildo Teixeira Sena

I would like to insist on the fact that we do not have to start from scratch. There is a harmonious direction where efforts are already underway. Therefore, let's work with the existing initiatives.

Over two months, the states of Amazonas, Pará, Maranhão and Tocantins blended the creation of a network of research and products in biocosmetics. An innovating effort that does not include federal resources and that involves researchers from the four states.

Another innovating field is the need to integrate the production sector with research. After selecting the projects, we will present those selected to the businesspeople with the following proposal: we have these projects that were selected and will receive funding. How do you want to be involved?

The purpose is to fund with a partnership between the state projects that may generate products from four inputs which were selected with the help of researchers in the area: andiroba oil and nuts, copaiba resin, babaçu coconuts and cashew nuts.

Ima Célia Vieira

There are no advances in technology in Pará on account of bottlenecks and the absence of a specific agenda for these sectors.

I agree with [José Seixas] Lourenço on the need to consolidate the technological platforms and on the importance of these portfolios for the BNDES. But I emphasize that the identification of bottlenecks and the creation of an agenda are fundamental for this progress.

Marco Aurélio Raupp

When talking about the capacity to generate knowledge on the Amazonian complex, we are talking about increasing the number of universities, qualifying research institutions that are there and must be qualified to interact with the production sector. This is a modern view of the knowledge process.

The industrialization of the country took place without any science. Today, we see that, for a new stage of development, the participation of scientific knowledge is required. Therefore, we have to encourage the transmission of this knowledge to the economic universe, and we must see that this transfer occurs at the time new producers are created.

Ennio Candotti

I argue that about 30% of investments must be earmarked for the production of knowledge, with no previously defined allocation. If it depended on the market, on demand, on supply, we would not have the internet because the economists that should fund it thought it had no future.

In the Amazon, there are many unknown products, such as the famous edible herbs, the new lettuce. Therefore, there is an intermediary issue that must be placed on our agenda, which are the new products that the Amazon can supply. And for which, because they are unknown, there is no demand.

Adalberto Luis Val

I want to draw your attention to two aspects. First, the issue of infrastructure, the need for investments not only in the means of transport, but also in electric energy. Brazil is lit up on the

Portuguese side and in the dark on the Spanish side. Also fundamental is the issue of providing resources to data transmission projects. The country communicates at a speed of 1 gigabyte per second, and the Amazon at 20 megabytes.

Tatiana Deane de Abreu Sá

Manaus, Adalberto. Belém has already exceeded this limit.

Adalberto Luis Val

The issue of internet access and communication devices is extremely important, and this tool is available in a very fragile way in the region. There are exceptions of course, due to geographic arrangements.

The second point is that we have the ability to envisage new projects, new efforts, new processes that make scientific research in the Amazon feasible. But, each time I hear talk about new efforts, I get distraught with the problem of a lack of qualified personnel in the region. That is, the fundamental bottleneck in this process is a lack of personnel. We must solve this problem.

Paulo Faveret

I think it is a good topic for us to concentrate on now because it was brought up so much.

Ennio Candotti

On this last issue, I am sorry if I sound archaic, but we have been discussing this for 30 years. The topic is ill-explained to those who should decide. This is a good opportunity. We are in a position that opens doors to discuss science and technology.

Up to now, the BNDES has privileged cement and iron, that is, solid investments. If the Bank incorporated the information between the basic projects that it must support, fund, foster, this means a revolution in our scientific and technological system.

I say this because this issue of human resources is part of the philosophy that it is the market that supplies personnel and, if researchers do not go to the Amazon, it is because there is a lack of demand or means to remunerate them. This purely econometric issue is one of the causes of the disaster that we must correct today.

Another issue that we must correct is the following: what are the requirements established today by the financing institutes of large undertakings for companies involved in mining projects in the Amazon, so that some of the riches produced in the region promote local development?

That is, what can be done so that no more huge vessels transporting bauxite sail by right next to the growing misery and despair of the youth in the region? What we should request as environmental payment is poorly calculated. It is pathetic to place the little plants back where they were taken from. This is the central challenge we have on the table, in addition to increased credit, to the credibility of science and technology and to reducing its level of risk. Since investing in science and technology is a high-risk activity, no one invests in it.

With this focus, to not invest because of the risk, we will not solve the problem in the Amazon. Why? Because the risk is definitely high there. If we want to reach certain levels of development through innovation, we cannot limit ourselves to only funding the innovative beauty, that which we are accustomed to fund at low risk.

Paulo Faveret

Human resources and the scarcity of researchers were mentioned. Any idea what to do about it?

Ennio Candotti

Instead of contracting two thousand policemen, hire two thousand researchers.

Marco Antonio Raupp

When it comes to increasing the capacity of existing research institutions and the creation of others, this is coupled with a proposal for hiring teachers, researchers. The Amazon Fund could be an opportunity to contribute to the growth of qualified personnel in the region.

Ennio [Candotti] emphasized a very important issue, calling on the companies operating in the Amazon in an effort to contribute to regional development. For example, the need for investments in infrastructure for data communication comes up. There are several energy companies in the Amazon using transmission lines. These lines can be used to transmit data, as well. There are structures that are available and can be much better used.

Paulo Faveret

Also regarding issue of personnel, it is not enough to simply increase the number of researchers. I suppose they need to be spread throughout the region.

Ana Lúcia Assad

What we are discussing in relation to the lack of personnel is a broader issue of public policy. The performance of the Amazon Fund – with proposals to strengthen efforts in the region, expand our knowledge, generate and apply technologies – may be a factor in negotiations with other public agencies.

Odenildo Teixeira Sena

Isn't the Amazon strategic? Why then isn't the differential we have spoken of here taken into account? Instead of funding 80 research projects for the region, why don't we fund 300? That's why I ratify: it is a matter of public policy, but it is also a fallacy.

Tatiana Deane de Abreu Sá

I think integration is missing. The problem related to establishing researchers in the region is linked to the concentration of laboratorial facilities. It is crucial to map things out, to have an X-ray of the laboratories, aiming at modernizing them, because today the issue of integrated laboratories, references, and multi-users is a reality. We do not have to hire for the sake of hiring, but rather to map things out, to identify needs. This is the process.

Another idea is public-private interaction; it is fundamental. Many of the issues raised here are outside academia, outside the research institutions. A good idea for the Amazon Fund – so as not to do the same thing that is being done – is to create spaces for interaction within these clusters, a link with reality.

There is a number of governmental efforts at the federal and state levels, including the main focus of the Amazon Fund which is the problem of deforestation, whose rich material, tangible and intangible, will certainly be important in detecting what is relevant.

Ennio Candotti

I would like to resume the issue of establishing researchers in the region. How can we get 10,000 PhDs in the Amazon. One of the issues that should be in the universe of the Fund is the concern for training and investing in training young people who can do what the Fund would like to see done today. We can invest so that in 10, 15, 20 years we might have 50,000, or 100,000 local researchers trained locally.

Establishment programs will always be welcome. Just as we invest in the determination not to deforest, we should invest in the determination to prepare young people that are not interested in deforesting, and everything that comes along with it.

Adalberto Luis Val

I would like to analyze the process to establish human resources in the Amazon. The path adopted in recent years has proven unfeasible, because it is based on granting scholarships, which is not an appropriate tool. When the scholarship reaches the end, the researchers leave. So, we need to change that paradigm, and the Fund can help in this regard.

How? There is a direct relationship between the production of goods and the number of PhDs in a given region. The very activity of producing goods based on science ends up generating what is needed to establish human resources. Therefore, imagine that, when investing in production chains in the region, we will leverage the establishment process well enough. Today we develop, at best, 70 PhDs per year in the region, while Brazil develops about 11,000.

Concurrently, we would make other efforts, and that is where the matter of the Fund comes into play, for example, in the case of constructing production chains. Evidently, mapping is crucial in this process. Science is a social activity and, when unable to form research groups, the initiative falls apart in no time. The only thing that persisted in the Amazon were the research groups.

The Brazilian Academy of Sciences has reflected on this matter. The issue is dramatic. If there were the decision to invest, in the Amazon, the same amount, proportionately, that is invested in science and technology in the rest of the country, we would move from 0.2% to 1% of regional GDP, i.e. we would multiply the investment in the region five-fold.

However, if we decided to do that tomorrow, we would have no way to invest the resources adequately in the region basically due to a lack of personnel. You cannot think of science and technology with only those 15, 16 institutions we have in the area. We cannot continue with this argument that the Amazon is important in terms of biodiversity without an appropriate counterpart.

Ima Célia Vieira

I agree with Adalberto [Luis Val] that the issue of “establishment” is very wrong, but it has brought important contributions of resources when carrying out research in the Amazon.

We made an assessment of the Botany situation in the Amazon, and some of the data are startling. There are maybe five systematist professionals (specialists who take inventory of biodiversity) in Botany who are active in regional institutions. “Active” means those who publish at least one paper on taxonomy or floristics per year.

This corresponds to one systematist for every one million square kilometers, and approximately for each 10,000 spp. of Amazon flora. In Britain alone there are 383 systematists, i.e. one for each 630 sq. km. and for each three species of native plants. There is only one PhD program and two MS programs in Botany throughout the entire region. Still, they are in a dismal situation with regard to their status at Capes [Coordination of Improvement of Higher Education Personnel] and may close if there is no emergency plan.

I prepared a wish list of requirements to save Botany in Pará, and the resource that is required for procurement, inventory, training of guides and development of regional flora, is R\$ 3 million to R\$ 4 million per year to hire about 15 or 20 teachers, PhD researchers for the state. Any development agency interested in solving a serious, very serious problem for the Amazon, could contribute with these resources. The state of Amazonas, because of its size, would probably need another R\$ 10 million to save Botany in that state.

Antonio José Junqueira Botelho

Besides increasing the establishment and contracting of researchers, we might add the need to improve the selectivity. There are areas with gaps of ignorance, others with functional problems. The general issue is public policy, and the Amazon Fund can help contribute by identifying the bottlenecks and specific problems.

We're talking about generating knowledge on the Amazon. Local establishment of personnel is important, but we must think about cooperating at national and international levels in order to improve the training and establishment of research in the area, even if this is done in other areas outside the Amazon.

Paulo Faveret

Shall we explore the information topic a little more? I think it's a little different from the issue of knowledge.

Ennio Candotti

There are two aspects related to information: the circulation of information, which is very important and which feeds the whole system for generating knowledge and new information, and we can say that the amount of information lacking in the region is greater than the information circulating.

It is an essential input for all other public policies, on settlement, on land distribution and particularly the discussion of environmental services or the inclusion of the Amazon issue in global negotiation.

Today, solid foundations are lacking throughout the entire conservation policy. Knowing what we want to conserve, what we do not want, what is a priority, what comes before and after.

Every area of botany and biology insists that there is a huge lack of knowledge and that this is almost a matter of national security, much more than protecting existing knowledge which dominates the attention of national security today.

Adalberto Luis Val

There is need for information centers, but I want to place this issue in two aspects. First, in relation to what type of information we need to have on the Amazon. We are very far from knowing what there is in the region. Even basic knowledge, such as, for example, what are the species of plants and fish.

Let me give two examples. Last week, a colleague who works in the area of fish systematics told me that the level of current knowledge is only at 10% concerning the species in the Amazon Region. Recently, two species of monkey were discovered in the interfluves (watershed in a hydrographic basin) of the Rio Madeira. We're not talking about bacteria, which you do not see, but monkeys!

We need science and technology to use this diversity, the little that we already know. What we have today, with rare exceptions, are the rudiments of technology. We need to move ahead and recover lost time in the sense of mastering new technologies.

Our inability in the region is such that about 70% of all information on the Amazon is not owned by Brazilians. So we need to get hold of it. And here comes the issue that I discussed earlier regarding the need for an information center.

Currently, we do not have a center that brings all the systematized information together, which has documentation available to support interventions in the region. Whenever we need to gather information, it is fragmented.

We must therefore work towards making up for lost time to get a hold of modern information that will enable interventions in the region, while, at the same time, building a base, a center that can provide this memory of what is already known about the Amazon.

Paulo Faveret

In other words, isn't Google enough?

Adalberto Luis Val

No.

Tatiana Deane de Abreu Sá

I agree with Adalberto [Luis Val]. We do not know what we have, or where we have it. Another thing, every time something is asked of us, we have to start from scratch. It is very strange, in the information age, just being here discussing something that is so rudimentary.

Marco Antonio Raupp

Having an information center is fundamental. It is the basis for developing research in the Amazon and beyond. Through a network of data, one can access this information and do research at every university in Brazil, for example.

Ima Célia Vieira

The issue of managing and organizing information is quite disastrous. I've been in touch many times with other institutions and governments about the need for initiatives to formulate this large database on the Amazon. But, again, isolated efforts that do not interact give rise to concern at both the institutional and the inter-institutional level.

Ana Lúcia Assad

The main bottleneck in this issue of information and generating knowledge is the integration of efforts, and we're talking about very specific things once again. One point is access to scientific information, which, rightly or wrongly, is attainable and is available through various means. Now, especially with regard to information processing, we have no integration, information management and no continuity of efforts.

Archives and collections are important and necessary, but how to integrate them and deal with the information deposited there? Which Amazonian institution will have the necessary infrastructure to be the custodian of these collections and in a position to deal with these data intelligently? What we must do is deal with this information intelligently, integrate, use the technologies for organizing and disseminating databases that exist today. And, of course, once again we will fall back on issues already addressed such as qualified staff, continuously-updated physical infrastructure, integration of competencies and information management.

Antonio José Junqueira Botelho

I would like to go back to my first point, the importance of having knowledge maps with a methodology capable of ensuring the capacity to analyze strategic information. That is, it is not simply about a collection of scientific information, but rather the tools that allow an analysis for programming, planning and operationalization, even to make it possible to set up a complex program the size of the Amazon Fund.

We need, for example, to think about a methodology to help the Fund consolidate a stock of information on the region, an analytical capacity to identify bottlenecks, diagnoses, cases of success and failures and, of course, feed this database every two years and run progress analyses.

Paulo Faveret

We talk about challenges, but we end up advancing into the issue of “solutions”, although without getting into much detail. Now, let’s try a more focused dynamic. I suggest the division of the ladies and gentlemen into two groups to come up with the highest number of solutions possible.

You will have time to talk, and then each group will choose a speaker to present the outcome of discussions to the following question: how to change the products in the region into business opportunities, or, in general, to turn knowledge into value?

Value has several meanings for the researcher, for society, the employee, the employer, those who will be selling, the government, which will receive taxes. Value that is sustainable in economic terms.

Do not worry about the origin of funds or the implementation, but rather about forming the concept of a project and what its initial stages would be. Each group must reach a consensus concerning one proposal. Then the representative of the group will give a presentation to the other and vice versa. The group that listens then comments, and the group that presents are then entitled to a reply.

So, I am looking for tips, scripts, critical paths, hurdles in the way, things to work around, things to deal with. The experts have the floor.

Adalberto Luis Val

It would be very difficult to define a single effort for the Fund. To think that way would be to have a minimalist approach to the Amazon; I think this is not the course to take. As a corollary of efforts, we need to address at least three dimensions – diversity, complexity and scale.

We believe in a connection of science and technology with products from the Amazon, and I think we could reach relatively quick answers to some of the existing technologies.

We made a list of technologies with which we could work. Among them, technology for fish and the entire production chain, with the organization of cooperatives, working not only with the production of protein, but also byproducts, such as leather.

We list others, such as specialized tourism, enabling the recovery of degraded areas, for which there is already technology. We need to define what we want with these areas, whether they will continue to be used to produce soybeans, cattle, or as settlements.

The production of bio-jewelry is also a relatively structured chain. We can move forward in biomass, in energy. In spite of the discussion on this issue, there is technology available.

Regarding biocosmetics and phytochemicals, we already have a series of efforts in this direction, but we could operate them better. In the area of foodstuff, there is already relevant expertise, especially in the fruit sector.

Another technology also available in the region, but always in second place, is the construction of systems for local naval transport. This is an industry that has operated on the fringes of the whole process, but that could be leveraged effectively with the training of specialized personnel.

The mineral matter is crucial; we already have expertise that would allow quick efforts in the region.

And finally, the issue of managing the information on the system. Today, information is available in the system at zero cost. However, we have spent an absolute fortune on it. We are barely managing this whole process of providing such information.

You cannot think of only one issue, but rather several components. Those listed here foster the use of personnel already in the region, existing information, but also the training of personnel at all levels, from the primary level to the most specialized. And it allows short-term efforts, in several of these cases, as well as medium and long-term in others.

Ennio Candotti

Just to add one more thing, there are two readings for this development and for these possibilities.

The first, the development model for Norte Fluminense (north of Rio de Janeiro state). What would we do with all these supplies or services could be used to develop a region near Rio de Janeiro. The second is to ask whether the characteristic development of our metropolitan or urban areas is appropriate for the Amazon or whether we should approach it a different way.

One must consider that the Amazon Region, where all that development tends to occur, has very particular characteristics where communication is carried out by waterway, where there is heavy rain. This sets and defines another standard of development. Do we want the same standard of development? To generate wealth to promote social well-being? Will it work?

Ângelo Augusto dos Santos

As we must think about the perpetuity of the Amazon Fund, how could we ensure that its resources would go beyond those 20, 30 years that are being considered?

Should the fund be divided into multiple portfolios, the BNDES could specialize the undertaking. Certain portfolios have different management strategies. Depending on the activity to be funded, it is possible to establish methods to generate return to the BNDES or its financial partners.

Considering not only the Amazon Fund, but the whole structure of the BNDES, it is worth considering that in some implementation processes of these development companies in the belt of deforestation, the Bank could participate as a shareholder or through a system of equity, which would guarantee that the return on invested capital came to something similar to the Amazon Fund and that it was, subsequently, internalized in the BNDES. Or the establishment of private venture funds capitalized (with seed money) from the BNDES.

This initiative would ensure that a development process carried out now by the Fund would continue for many, many years, ensuring its perpetuity.

You might wonder how such arrangements are made, when sustainable protection is encouraged in the Amazon.

Paulo Faveret

That is, this initiative – which is not a solution, but a path, a roadmap – has some concepts and meets certain requirements in terms of science and technology. It connects to existing technologies and, therefore, deals with the organizations as they are, not as they should be. This produces short-term effects and fosters involvement on all levels. I think a very important criterion not only for researchers, but also for people who build boats. [Turning to another group:] Do you have any additional comments?

José Seixas Lourenço

An initial contribution was on the issue of the favorable environment to transform the region's products into business opportunities put forward by [Marco Antonio] Raupp.

First, good universities – teaching, research and extension – by encouraging attitudes among teachers and students aimed at entrepreneurship and business incubation. There is already a reasonable Amazonian network in the incubation area, as discussed earlier. There are dozens of incubated companies and others undergoing the incubation process. In addition, there are good institutes for R & D specifically focused and capable of interacting with the companies.

Another component is the technology sectors, defined as places where there are cooperative projects between the science and technology institutions and companies to develop new products and processes. I would add something I already said, which is the issue of employing the experience with local production arrangements by means of the technological platform approach.

Over these past years, support has been given to at least 25 local clusters in the nine Amazonian states, experience taken on by FINEP, in which the Bank of Amazônia played an active role.

We discussed an idea put forward by Tatiana [Deane de Abreu Sa] and Ima [Célia Vieira] to elect a few topics, such as sustainable cattle-raising, and to come up with a way to turn that extensive, largely predatory and illegal cattle-raising into a more sustainable, concentrated activity, taking advantage of the technology developed in the region.

Paulo Faveret

With respect to cattle-raising, who could we interact with to produce positive results? Because the technologies are there, available, and there is even certification, but problems persist. What could be done to reduce the deforestation caused by cattle-raising?

Tatiana Deane de Abreu Sá

The idea is to identify the territory where it is possible to assemble the whole issue of science and technology in order make it feasible, and where awareness processes would fit in, as well as marketing, training processes to enable the activity, with the entire production chain. We have some enlightening data on the difference of methane emissions in extensive and in intensive cattle-raising.

But one important point is that the idea should be not to proceed with cattle-raising in the region. What is the big villain of the Amazon image? Cattle-raising, as a driving force behind deforestation, illegal in many ways, both in the social and in the environmental aspect.

One of the ideas for the BNDES would be to encourage sustainable activities in deforested areas. With this, certification, the positive image of the change from a negative to a positive scenario, would not be only for a product, but for the region.

For example, a native cashew nut harvested in an area that used to be used to raise cattle has an intrinsic value for being native and for being an area that has changed its production, but respected the legal reserve. That is, this cashew nut can be sold with a label. We have the possibility of replacing cattle-raising and of rearranging the environmental spaces. The change of image would be for the whole region.

Paulo Faveret

An NGO took the mayor of Lucas do Rio Verde to Germany for him to see the Greenpeace efforts in a fast-food chain with beef or chicken, where the cow or chicken had been fed with Brazilian soybean, to understand why felled trees there in the state of Mato Grosso is a problem in the stores of this fast-food chain in Berlin. I think the awareness effort is really important.

Ennio Candotti

I still wonder if the development model for the region that is behind these new proposals is sustainable. That is, is this the only way we can develop the region? How would the

development of this region be possible? Which inputs would be needed to make the region self-sufficient and not only as a supplier of raw materials for the foreign market?

That should at least be considered as a possible utopia. Imagine being able to occupy the small villages throughout the Amazon in a civilized manner with people that can feed themselves, exchange information, travel, get a decent education, health care, that can live their life far from urban chaos. How would it be possible to develop this region, which supplies would be required to make it feasible, without necessarily providing inputs to other markets?

Because, there are ways to do this, since there are clear comparative advantages in raw materials and food, energy, sun, I think we do not need to necessarily seek a solution in cattle-raising or in mining.

There are studies at Embrapa, for example, showing that one can harvest the forest, through leaves, oils, poisons or natural products, a quantity of resources much higher than that of wood. That is, more can be extracted from the tree through its leaves and fruit than through the wood itself. This shows the real conditions in the region. It seems to me that this was not brought to light here in the last sequence of debates.

We always see the Amazon as a barn or a region from which wealth can be extracted, part of which will eventually be left there. However, another type of development that could also be one of the goals of the Fund is not being properly gauged. And I think that it should not be ruled out, particularly at a time when many economists have declared themselves in favor of different development models for the economy.

Innovative executives working in Manaus act as if they were in São Paulo. They want to set up a bicycle factory, when they would need to set up a boat factory. But their goal is to reproduce here what the market demands.

Tatiana Deane de Abreu Sá

The product most often cited here, açaí, is a typical example of the few products that we have that is the symbol of our differential, of our entire diversity.

This is an extremely important issue. We have several similar species, but we will only be able to guarantee a supply to the market if we go through a process of associating the extraction, handling and a few expansion procedures for primary and secondary production with the process of domestic control and cultivation of sustainable systems, which could be agro-forestry systems. This is the important point: knowing what product we have and organize the chain for that reality.

José Seixas Lourenço

I understand that the contribution we have been reiterating throughout the day regarding the role of universities and research institutes for incubation, the role of technology-based companies, is based on an experience of 15 years. During this period, there have been about a hundred companies incubated, very small undertakings, many of which linked to biobusiness.

There is already a reasonable number of undertakings that are adding value to our biodiversity and in a wide array of areas. Chocolate candy, for instance, is sold all over Brazil with our fruit, such as the cupuaçu fruit, bacuri fruit ...

What I'm imaging is to multiply this scale. This will be possible if there is encouragement, and the Amazon Fund is a good instrument to encourage this type of effort.

Today, they sell many products such as cosmetics, as andiroba oil and nuts, as well as copaiba oil. However, we know that these products have other effects as well, medicinal effects, such as healing creams, skin rejuvenating solutions. With a little more research, we would get there, but this is an area that is not being duly explored. It is easier and more practical to make money as a cosmetic. I'm really thinking about the small entrepreneurs. Small businesses that should be multiplied ten-fold.

Ana Lúcia Assad

In keeping with [José] Seixas, we have some other examples of aggregated value in native products that have given rise to companies and that are working in niches, for example, in the extraction of oil from Brazil nuts, producing oil from Brazil nuts and other byproducts, supplying the spice market for gourmet use.

There is a very interesting aspect when we talk about chains that use raw materials from the forest which is the advantage of this raw material. There is a large variety in the quality of the product's origin. When we speak of Andiroba oil, or Copaiba oil, we are referring to a product which is almost at the beginning of the chain, at the management stage, in the selection of species, and this also implies knowledge of the species and subspecies. There are technologies that need to be studied and made appropriate, and which often involve local knowledge. There is potential for an endless number of companies, and this is a market to dominate.

Paulo Faveret

I'll make an optimistic appraisal of what has been said. There is a robust set of technologies that, together, in terms of scale, would have a very significant scope, but they need to be developed.

If we could make a connection to the market, with the market training entrepreneurs, would a significant increase be possible in the short-and medium-term?

Ana Lúcia Assad

Yes, especially in this line of cosmetics and herbal medicines.

Ima Célia Vieira

In the Amazon today, small production is confined. One example is the traditional population which is confined to extraction reserves, and their reserve models and sustainable development or conservation units, and the other population is confined to settlements. These models lack science and technology.

What kind of settlement do we want for the Amazon? It is not those that are already there, because they are a disaster. People are simply put there, and afterwards there is no complete, integrated public policy, aimed at the people in the settlements. As a result, they contribute to deforestation. They have to plant, and where there is primary or secondary forest, they burn to produce food and self-sustainable farming.

There is no interaction between efforts with regard to state and federal priorities, and practices vary widely from one state to another. You need to have regional integration in terms of public policies.

Ennio Candotti

The Fund, in its policy, must decide what side it is on. This is the government's moment, in which concern for social inclusion is high, while we have already been through other times when this concern was average or low. If there is high concern for social inclusion, all our proposals should take into account that they may result in proposals that include or exclude.

In particular, let's take the example of andiroba, which is bought for one price and, once purified and processed, sold for a value ten times greater in large urban centers. The technology that we should encourage is one that gives these communities the opportunity to sell their andiroba oil with a high level of purity and not just the average level. This costs very little.

We are denying local people the opportunity to benefit from their own andiroba oil. It is possible to place quality control institutions in the centers of the Northern Region, allowing the people to earn five times more. This is the Choice of Sofia that will mark the path of the Fund. This development can be carried out in several ways, in various scenarios.

Sergio Weguelin

I'd like to break the vow of silence and raise a doubt: although most affirm there is a huge problem to carry out organized bioprospecting, we're talking about developing Andiroba, cashew nuts, etc. Are these barriers that fundamental or not? Are these restrictions that severe? Are they real? Is it possible to resolve them quickly and work in parallel? Otherwise, we will have to resolve them before starting to address the issue.

Ennio Candotti

Reality shows what is possible and what is not. It's a constant battle. All discussions should take into consideration that there is pressure to achieve short-term results, but there is long-term

perspective, which we incorporate in our discussion. It is mandatory for us to consider 20 years. Also raised was the idea that we need to be realistic and think about the day-to-day steps. So, there is a long-term battle and another short-term battle.

Paulo Faveret

In conclusion, I suggest one last round. If each of you had to put R\$ 100 million into a single project, in one particular area, what would this project be and why? Or, what would the conditions be? That is, I do not allocate R\$ 100 million without considering certain issues. In other words, what is the biggest battle of all? What is the central concern of each one of you in relation to the Fund?

Tatiane Deane de Abreu Sá

I would invest in an arrangement that connected a major issue or major issues not in an isolated way, but converging, also, with sustainability. One should not detach training personnel, the research institution, policy issues or the revision of legal regulations. I would invest in the integration of all these items, taking lessons learned and passing them along to other segments. That is, consolidation not only in target segments, but also in training segments.

Marco Antonio Raupp

I would make investments in the information system, the data grid. We're talking about pooling institutions in which these data would be deposited, connected to a good momentum of communication. It is the most basic, even when designing a research system. Without this, this complete lack of communication will go on, with the information being taken abroad.

There are things in parallel, such as a specialized satellite in the Amazon, to collect data, to monitor the Amazon. This is associated to the information system. But it is no use having a satellite if there is no connected information system available.

José Seixas Lourenço

A good investment would be to start by detailing the economic-ecological zoning. If we want to work on the environment and territorial issues, it is absolutely essential to have zoning.

Other than that, I reiterate the interaction of knowledge, information and products, and these mechanisms we have mentioned, incubation, technology sectors, recovering local production systems with the successful experience in the region.

Ima Célia Vieira

I would invest part of the resources in monitoring and in what I call the observatories of land use, with cutting-edge laboratories for monitoring and identifying deforestation trends. On the other hand, I would also invest in models for settlements and reserves, not in the conservation units as a whole, but those in which communities would become self-sustainable. If there is any money left, I would place scores of researchers inside it.

Ennio Candotti

I would leave from the characterization of the object of our observation as a living system, little known to us. I would seek to know how communities live in this world and how this universe survives. That's because it seems that too little is known by the national and international community. It is a universe in which most information reaches the public and public opinion via scattered paths.

Most of the information concerning the public opinion on the Amazon comes from abroad. Therefore, we have a fundamental task: to strengthen teaching and research institutions in the region, but also to multiply them and make them more active in the smaller communities, where wealth lies in the different views of this reality.

In this regard, as director of the Museum of the Amazon [Musa], I say that I would invest the R\$ 100 million in the museum, Musa, no doubt about it. In exchange, together with the other institutions in the Amazon, we would form a network capable of providing much better

information, to the Fund as well, so that it is not influenced by passing trends or stereotyped views that have been used when characterizing the region. Musa is capable of studying the living forest.

David Oren

The name of all this is “a brain”. The mass of competence in the Amazon is aging. There are certainly 25 specialties in which we urgently need to inject resources, such as anthropology, microbiology, geology, entomology, so we can establish zoning competently and according to all the other priorities that we have discussed, such as biotechnology, production systems, etc.

I would invest the R\$ 100 million, easily, in brains targeting strategic areas.

Ângelo Augusto dos Santos

I would invest in different production systems geared to food and energy security in degraded areas.

Ana Lúcia Assad

I would make an investment in strengthening the local research infrastructure and development of institutions, especially those related to training and development of human resources at all levels. Why? Because the second step would be to implement an integrated project to develop herbal medicine, in order to prove that it is possible to do so in Brazil. The important thing is to create the opportunity to put the right people in the right places, setting up an entire structure of large-scale production, where there is a bottleneck.

Like Ana Lucia, and if I were an investor, I would put together an entire project for herbal medicine with anti-inflammatory or analgesic applications, or both, with the entire production chain developed and implemented in the region, with local raw material, since there is scientific evidence for such.

Adalberto Luis Val

Today, in the Amazon, we have 3,300 teachers with undergraduate degrees working in institutions; a further 9,500 teachers with specialization diplomas, and 7,600 teachers with Master's degrees. This group has already settled in the region. If they get their Doctoral degrees, we will have much better investments in the region. I think you cannot move on anything without touching on the "brain" issue.

And a second point is: I could not agree more with [Marco Antonio] Raupp on the need to create an information center. Without such a consolidated center in the region, we will not get anywhere.

This would also include a third point: I would set up one of the technology institutes proposed by the Brazilian Academy of Sciences and would establish 100 technologists to work at this institute.

I would invest the R\$ 100 million in these three activities. Of course, Ennio, all would cooperate with Musa ...

Sergio Weguelin

The meeting was very fruitful, we will leave here with very valuable material. The challenge is huge. We started a process today, and we will not stop.





Meeting III

Participants



Adriana Ramos

Member of COFA and a permanent member of the Socio-Environmental Institute (ISA), she works as an assistant for Public Policies. Founded in 1994, ISA proposes solutions to social and environmental issues.



Bertha
Koiffmann
Becker

PhD in Geography from the Federal University of Rio de Janeiro, with a post-doctoral degree from the Massachusetts Institute of Technology, honorable professor at UFRJ.



Caetano
Scannavino

Coordinator of the Health and Happiness Project, a non-profit institution founded in 1985. Starting with the local reality, he searches for simple and adapted solutions that bring benefits to the population.



Ennio Candotti

Physicist, professor at the State University of Amazonas, General Director of the Museum of the Amazon former president of SBPC (1989-1993; 2003-2007), former editor of magazine *Ciência Hoje* (1982-1996) and winner of the Kalinga award / Unesco for Scientific Dissemination, 1999.



Eugenio
Scannavino

Infectologist, he developed efforts to reduce high mortality rates and malnutrition among children in the Amazon. Coordinator of the Health and Happiness Project, in Santarém (PA).

A new look at the Amazon. Car or canoe? Indigenous people or workers? What is the value of the forest ?



João Augusto Fortes

Civil engineer, coordinator of NGO Rede Povos da Floresta, responsible for implementing 30 Indigenous Cultural locations. Founder of Association for Culture and the Environment. In 2008, he started reforestation and implementation of SAFs (agro-forestry systems) at Reserva Extrativista Alto Juruá.



Gersem dos Santos Luciano Baniwa

Baniwa leader of Alto Solimões and anthropologist. Author of book *The Brazilian Indian: what you must know about the indigenous people in Brazil today*, a result of the project Trilhas de Conhecimentos.



Jorge Viana

Forestry engineer, former mayor of Rio Branco, former governor of Acre and former director of the Technology Foundation in the state of Acre, where he worked with Chico Mendes in defending a sustainable development model for the Amazon.



Joseluis Samaniego

Director of the Division for Sustainable Development and Human Settlements of the Economic Commission for Latin America and the Caribbean, of the United Nations. Economist with a Master's degree in International Economic Policy.



Kristian Bengtson

Master of Political Sciences from the University of Uppsala, in Sweden, and responsible for the support program for indigenous people at the embassy of Norway. The program will celebrate its 27th anniversary in 2010.



Marilene Correa da Silva Freitas

Dean of the State University of Amazonas (UEA), Master's degree in Social Sciences from PUC-SP, PhD in Social Sciences from Unicamp, with post-doctoral studies at Unesco / Université de Caen, in France.

The president of the BNDES, Luciano Coutinho, opened the third meeting focusing on structuring the Amazon Fund. In this last series of brainstorming meetings organized by the Environmental Division of the BNDES and held in 2009, the subject chosen for discussion with 11 experts from the sector was one of the most controversial, as it brings together contrasts, adversities, paradoxes: the socio-environmental issue in the Amazon.

Luciano Coutinho stressed the importance of the debate to identify opportunities and challenges, and especially to design a social and economic panorama of the region which would generate effective results. Contributions from the participants – scholars and representatives of people and forest communities with extensive knowledge, and experience in the proposed subject – will provide the BNDES with elements to help manage the Amazon Fund.

The director of the Venture Capital, the Environmental and the Capital Markets Division, Eduardo Rath Fingerl, presented a brief summary of previous brainstorming sessions, explained the objectives of the Environmental Division and introduced Deputy Managing Director, Sérgio Weguelin, who stressed the importance of dialogue with civil society for the management of the Fund, because it administers resources that come from donations. “We have an obligation to hear what society has to say about what it believes the Amazon needs, but we also need to hear what the Amazon itself thinks it needs. And the social issue is fundamental for the sustainability of the region,” he said.

Weguelin also highlighted that one of the BNDES’ goals is to establish local contact with each of the states in the Legal Amazon, a kind of regional institutionalism, to contribute to organizing projects, in addition to maintaining discussion forums in several formats in order to improve the development process of the Fund. “If we can harness the potential of the Amazon, we’ll take a big leap forward,” he concluded.

Moderator Paulo Faveret explained to the participants that the dynamics of the meeting, as in the earlier ones, sought a focus on solutions, avoiding discussions concerning the reasons that resulted in the current problems in the region. That is, explaining premises was allowed, provided that such premises aimed at results. Again, he stressed that the debates should envisage the Amazon, not specifically the Fund, because it had to do with an instrument under construction and, therefore, it was subject to changes.

“Certain things that are not eligible for the Fund’s support today might be tomorrow,” he explained. “Therefore, I would not like to miss the opportunity to gather as many suggestions as possible on the major challenges in the region, the openings for society’s efforts with or without support from the BNDES.”

The meeting began with an initial round of about five minutes, in which participants presented ideas they considered fundamental – concerns, solutions, challenges. And continued throughout the day, with discussions focusing on the most emphasized issues.

Before describing findings, Faveret presented a challenge. He cited an experience that occurred in a city in the state of Mato Grosso, Lucas do Rio Verde, where a farmer says that when he arrived at the municipality, in the 1970s, the order, not the recommendation, but the order was to deforest. And that is what happened.

Thirty years later, he declared that, for the first time, he understands that the forest was important to his business. And since then, he took it upon himself to head up reforestation, because he understood that the soybean produced on that land would feed cattle in Europe, and Europeans no longer buy beef from cattle fed with soybeans grown in deforested areas.

How can Brazil come to terms with this image of the discoverer of the Amazon with something that is positive, and not negative? Brazil’s image, with respect to the Amazon today, is very negative. On one hand, there are the conservationists and, on the other, supposedly, the men for progress. In many societies, there is no such separation. Americans do not have the slightest doubt concerning the positive civilizing role of cowboys. For us, pioneers are essentially negative, they are agents, leaders of destruction. How is it possible to reconcile Brazilian society in terms of its stereotyped image, of its ideal icons? How is it possible, therefore, to build an image, a dream of a sustainable Amazon?

The following is a summary of the main topics discussed.

Main Points

1. *New mindset* – The need for a new vision of the Amazon that will lead to a new mindset, new technologies, a new development model. Essentially a social issue, because it is an interpretation of society on the region and what is desirable for the region.
2. *Adding value to the forest* – Adding value to the products and the forest. This was a recurring topic in previous meetings and absolutely central. A topic with an economic core, but with social implications and requirements. Aggregating value implies intimate knowledge of the reality in communities and, from there, qualification and encouragement to productive organization. What are the preferences of the population? Cars or boats?
3. *Governance* – This was another issue that came up in previous meetings, but under a new focus. Governance involving traditional people and local knowledge, as well as the integration between them and the world of science and technology. Integration also among governments, with institutional strengthening, and among all actors with local and international NGOs . How to get this Tower of Babel to speak only one language?
4. *Transition between models* – The need for a transition plan between the old model and the new vision proposed by several participants, which requires political agreement. On the agenda is the issue of reconciliation or pacification in the Amazon. New topics for traditional people.
5. *Infrastructure* – Demand for investments in the area aimed at facilitating integration, while respecting the diversity in the Amazon. A possibility that a new infrastructure model will enable large-scale production, so that new activities can compete with those related to *commodities*.
6. *Extensive cattle-raising* – The need to find solutions to stop the growth of extensive cattle-raising and deforestation in the region, intensified by the efforts of the local population in search for income for survival.

► The need for alternative policies and the role of the BNDES

Ennio Candotti – I want to take advantage of the fact that President Luciano Coutinho is present to comment on the issue of economic alternatives for the region, which to me seems key.

When the BNDES was established in the 1950s, it came up with the proposal to provide economic alternatives for Brazil, among which was the replacement of imports. Today, it is about finding economic alternatives to replace the current dominating matters – soybean, cattle and timber – and about the expanding agricultural frontier in the Amazon.

It is not easy, of course; otherwise, it would have already been solved, and we would not need to be here. The BNDES itself should be reformulated. What are the instruments available to actually intervene with the same intervention capacity to draw up alternative policies?

We could suggest that the Bank should no longer fund cattle-raising, soybean, any steel mill that uses coal – and this is not a provocation. There are alternatives for intervention in the forest, in the region, that are not devastating. We have them. They are in our desk drawers. Only, we do not have a BNDES to implement them.

How can the work of the BNDES be contemplated together with these new matters? What possibilities would we have to weight this up? Depending on the answer, we will discuss programs of billions or programs of tens of millions. I think we can do both, but it would be very important to make the most of President Luciano Coutinho's presence to hear what you think about it.

► Transformation of predatory activities into sustainable ones

Luciano Coutinho – I'll break the rules, because I should not talk, just listen. Unfortunately, I cannot stay long, but I would emphasize the following: We are 100% committed to the pursuit of an effective policy. Since the Bank has a large budget and became manager of the Amazon Fund, it gives the impression that it has wide-ranging powers in relation to the Amazon, and it is therefore held accountable as if it is able to do anything and everything.

In fact, it has relative power to accomplish things. I will quote, for example, the cattle-raising activity. The BNDES' recent financing for the sector has transformed these companies, forcing them to maintain a minimum level of governance and accountability to society. They have become visible. These are companies we can hold accountable, and we are strongly demanding environmental commitments.

Two of them have publicly-traded shares. Our goal is to make them all become publicly-listed and maintain governance. These companies already perform some type of control, but the problem is in the previous production chain. That is: the origin of the cattle. For this, we are developing a traceability system that covers the entire supply chain.

Meat packing companies will need to prove they have adhered to a traceability system as of 2010, and, therefore, may have to rely on the BNDES' support to develop and implement such systems in the country, which already has several software and hardware solutions available.

However, these companies financed by the Bank represent only 20% to 25% of the cattle-raising activity. The informality of the sector reaches between 70% to 75% of the companies, which are totally beyond our control. We do not fund them, nor do we have access to their activities. As you can see, there is a large amount of illegal, underground slaughtering, not only in the Amazon, but also all over Brazil. It is a deplorable problem – illegal slaughtering, illegal slaughterhouses, etc. It is a systemic problem in the country.

As for soybeans, the BNDES does not finance commodities; it is not in the Bank's operational policies. Who finances soybean? Large trading companies. So I wanted to demystify the idea that the BNDES is the mighty powerful entity that can solve everything. It is not true. We wish that it were true, because it would be up to us to say, "no, I won't finance this, and you will have to bow to our demands."

But how can we intervene using positive instruments to change? We would like, for example, to formalize and modernize all cattle-raising, but for that, we would need to design a policy that encouraged less extensive cattle-raising, funding the recovery of pastures etc. It is another policy. How to draw up such a policy, how to create the incentives? We are willing to go further into this issue.

To carry out restructuring, we would need to make a policy to reach an understanding with agribusiness in order to create correct economic incentives for it to engage in a different policy. What is this policy? Does it make sense? It calls for economic and microeconomic consistency, which generates profit. Only then will it shift private interest in another direction.

What to do with the timber companies? How to punish them, on one hand, and create incentives, on the other? The agenda goes beyond that. It should take into account the fact that a large portion of the population has no economic livelihood. Therefore, these activities alone are not sufficient to sustain it. Those that exist today are predatory and unable to ensure the sustainable development of the region. What to do?

We need to find alternative activities that the BNDES is capable of developing and fostering. Here we are, collecting ideas and models of sustainable business, such as the use of fish farming and aquaculture in the region, which is controlled (intensive).

What models would be ideal to carry out these activities? How does one draw up a model? Would it be the model of a large integrating company with a large supply chain? Would it be a model of small family farms? How does one do that, how do we build it? How do you build a type of forest management that is more profitable and not solely restricted to misusing the wood itself? How can biodiversity be sustainably explored in several new activities? What to do in relation to mining? How to promote or create incentives for reforestation?

As you gentlemen can see, we have many questions. The situation is more complex than it seems at first. So now, I hand the questions back to you. We want to hear from those who understand the issue. We are all ears to engage in the issue. There is an agenda for significant reflection, and the result of this process is essential if we are going to handle the matter.

Eduardo Rath Fingerl – In addition to what President Luciano Coutinho has said, the first fully operational activity in the Environmental Division, coordinated by Otávio Lobão, was the launch of a fund for forests. Its objective, similar to what occurs in the world, is to support, through private equity, forest formation. Both the formation of native forests and the recovery of degraded areas are included in this fund's regulations. It is the BNDES' first product to involve native trees and the recovery of degraded areas.

Paulo Faveret – Well, let's start with Gersem Baniwa, returning to the question: What's more important, if you had only one shot, what would be the target?

► New demands from indigenous communities

Gersem Baniwa – I am from the Baniua people, in Rio Negro. I am currently coordinating a network of researchers, indigenous professionals and academics in a center for studies and research – Indigenous Center for Studies and Research (CINEP). I also coordinate the indigenous school education at the Ministry of Education. I put the two challenges together, that is, on the one hand, at the destination, in the villages, in indigenous lands and, on the other, the challenge of public policies needed to empower indigenous people to think about the future of their people, their societies and their land.

Today, we have an enormous responsibility in Brazil to Brazilian society. Thirteen percent of the national territory is managed by these people, representing approximately 23% of the Amazon. In the area of public policies, we seldom realize this. When we make a calculation per capita of the indigenous people, the numbers become insignificant, amounting only to 0.4%. But we forget the 13% of the national territory that is the responsibility of the indigenous people.

The role of this study and research center is to foster the capacity to solve indigenous problems and contribute to local and regional development. It's a big challenge, because it has been centuries of contact with modern technological society, living with economic pressure on their territories.

This center's mission is to enable indigenous people to meet this challenge. We assume that, for indigenous people to provide good management, for effective management of these territories, it is necessary to capacitate them.

Second, obviously, as a consequence we seek economic alternatives. That is, the indigenous people, during centuries of contact with the non-indigenous world, with the national and global world, have created new needs, new demands, including technological ones – that need to be taken into account.

Indigenous people need to get qualified and find the best approach so they do not take the path of predatory activities. I think this is the big challenge. On the other hand, to leave them as they are, with the difficulties – I would say even with their traditionalism – is not the way, because they all long for better living conditions, too, and to acquire technology, the knowledge of science.

Of course, such ownership cannot be achieved with a predatory approach. We need to articulate this scientific and technological capacity with the great historic, ancient lesson of the indigenous people, which is the absolute harmony and balance with nature, with natural resources. That is CINEP's main mission and main challenge.

► Aggregating value to forest products

Ennio Candotti – There are two important questions: is it possible to add value to products from the area within the scope of the market economy the way it is addressed today? That's the challenge that will require reflection on the very paradigms that guide economic intervention in the Amazon.

The other question is: are the production systems for other economic environments applicable to the region? Let's say that they are applicable with some adjustments. That is, a production system in the state of São Paulo relies on roads, communication, supplies, technical assistance within 30 minutes' reach. On the other hand, in the Amazon, the issue of infrastructure is either nonexistent, or any technical assistance requires weeks to be mobilized, and this brings about a fundamental problem: who foots the bill for infrastructure?

In other words, would our economy, our political structural design, be able to cover such a bill, or is the issue still out of our reach? Should we let wild capitalism take care of this intervention?

So, if I had only one bullet to the barrel, I would go to the bank teller and say: "Pay the bill for the infrastructure." If I am arrested before this, forgive me, I will give up active militancy; if I am caught later, I will get a chance to see things improve.

► Key-words: oversight and governance

Eugênio Scannavino – I am the coordinator of the Health and Happiness Project, which operates in the Amazon in Santarem, with extraction communities on the Tapajos River. We began the project with the support of the BNDES over 20 years ago. I also represent the initiative Amazon Brazil, which seeks to present the Amazon abroad, the real Amazon, so that people may know it.

The Amazon issue is a battle. Or rather, there are several battles on several levels. When we talk about Amazon, the forest comes to mind, but the Amazon has more than 23 million inhabitants, of which 70% live in urban areas, with a very weak institutional framework. We also have a population of around five million in extraction communities, the vast majority outside of conservation units.

That is, the communities living on extraction reserves, in national forests, they still have some sort of defense for their territorial area, but the others do not. They live an abandoned life, face to face with colonization that is approaching, which is that of soybean, that of timber (yes, there are still lumbermen entering primary areas), that of cattle-raising.

When the question is asked: how to change the image of migrants, the new settlers, the answer is: “I don’t know”. We could set up strong barriers on the roads, but expansion will continue.

We must also consider that there are indigenous populations at different levels of contact, integration and with different social situations. We still have 70 tribes that have never made contact with people outside their clan, which we have only seen from airplanes. The Amazon is a super complex universe with several focal points requiring care, several initiatives that need to be connected and articulated.

Concerning the territorial issue, the key words are “supervision” and “governance”, including the strengthening of local, state and national institutions working in the Amazon, and the integration of institutions and of the social area, which is basic. The strategy to preserve the forest is not a strategy for forests, for the environment, but a social strategy because the social issue generates all the destruction, with the exception of foreign economic invasion.

Economic expansion is the fruit of social weakness in the communities, which allows uncontrolled entry. For this reason, the strengthening of forest communities will increase the notion of citizenship for the local population, so that they can live sustainably in their territories, with their traditional cultures, but integrated into the globalized world in a dignified, competitive manner and as a socialized citizen. In my view, these are the foundations for constructing development in the Amazon.

▶ The mindset about the Amazon must change

Caetano Scannavino – I also work on the Health and Happiness Project, which began, as already mentioned, with the support of the BNDES in 1987, and today we have resumed a partnership with the Bank in the area of sanitation, awarded by Cepal, in Santiago, Chile.

My one shot would be toward changing the mindset. Brazil would begin to understand the Amazon not as a burden, but as a bonus. Right now, we undergo two crises. An international economic crisis; and the other is an environmental crisis. While there are two, the solution to both of them is singular: to come up with a new development model that attaches the environmental issue to the economic issue. Above all, one that brings joy, health, happiness, based not only on unbridled consumption.

The issue connects the Amazon to the world not only from the aspect of climate regulation, but also through motivation to find a solution to these two crises. We have a unique opportunity – primarily because Brazil is a country that has most of the Amazon territory – to build, from the Amazon, a development model “2.0”, which is capable of providing answers in an opposite direction to the present one. Instead of importing a development model from the South, built on other ideas, we should move forward on some initiatives that may even be replicated in cities like Rio de Janeiro or São Paulo.

This is the shot toward changing the mindset. Sometimes we think of the Amazon as a problem, as a deforestation scandal. Rarely does good news about the Amazon reach the South and Southeast regions or Brasília.

The new development model – should it be reduced to some pillars – would obviously include eliminating deforestation (there are programs for that already) and overcoming poverty, with the understanding that the solution to the environment must include the social issue. If we analyze the areas that deforest more in the world today, we will see that they are areas with a lower Human Development Index [HDI].

Therefore, there is a pressing need to create an environment of sustainable business, with an economy linked to the environment. Investors must feel secure to invest, to create jobs with a minimum level of governance, so that these businesses continue over time.

I highlight other issues, such as the protection policy and inspection. We must break away from the culture of illegality and enter legitimacy. What is normal there is illegality. Let's imagine that I am from Rio Grande do Sul, I'm a good person, I want to invest in timber production in the Amazon. I do everything correctly, the management plan, I get the necessary permits, pay labor taxes etc. I will face unfair competition, and my company will close in the red.

How can I compete with 99% of the companies, which are illegal? I either go back to Rio Grande do Sul or change sides. This is the practice in the Amazon. And this practice must stop. Besides the need for governance, for public management, there is a need for policies to address the Amazon factor.

Sometimes, I think Brazil does not know the Amazon. I deal with local politicians, especially in health and educational areas. Obviously, we cannot work with the same policy from cities like Campinas or Santarém, both about the size of Belgium. In the Amazon, there are communities that are 20 hours away by boat and are a municipal responsibility. Imagine a health secretary trying to comply with the Constitution, the right of the citizen, with a limited budget, in an Amazonian situation, with the Amazon's distances.

Another point to be taken into consideration is land use planning. I also highlight the social aspects and infrastructure, production chains, credit, fomentation and construction of a new economy based on REDD (Reducing Emissions from Deforestation and Degradation), as well as payment for environmental services.

In short, if we begin to think of the Amazon as an opportunity, I think we can accomplish solutions in the short term.

Paulo Faveret – Since this is a session with special focus on social issues, I suggest returning to the governance issue, focusing on governance as an agreement. Not only the issue of the State, but the issue of society, as well. That is, institutions in the broad sense.

► **Establishing a new development standard for the region**

Bertha Becker – I congratulate the BNDES for the initiative to hold this brainstorming session. It is an important initiative to listen to people who deal with the region. Concerning the request to take one shot, I find it hard to answer, because there are so many targets. For example, transportation and communication. I agree with my predecessor in which the main issue is to establish a new development standard for the region. Within this new standard, logistics, education and land regulation should be inserted.

It is difficult to separate the segments into efforts, because we may fall into the lack of synchronization in policies, which is one of the serious problems in the region. We need an articulated policy, with various ministries and various actors.

I would like to emphasize that even today, despite being very rich in terms of natural and cultural resources, the Amazon has no adequate standard for its particularities. Historically, there is no understanding of the sophisticated regional nature of the Amazon.

There was never a real effort to look at the needs of the region. The Amazon has always been viewed through an external perspective. As one has never built a proper development standard for the region, even today it is not fully integrated – neither in the Amazon itself nor within the country. The history of the Amazon is very different from the history of Brazil and is much more connected to that of the Caribbean.

The new standard is crucial because, in addition to stopping the loss of wealth in the region, it also overcomes risks related to exercising sovereignty. Everything is interconnected. If the Amazon does not develop, it does not integrate; if it does not integrate, it does not develop. It's a vicious circle that needs to be broken. That is, we need to generate wealth, employment and

income. No use simply talking about development; there is the need to generate employment and income. The population, obviously including the indigenous people, demands this, they demand citizenship.

Consumption is part of citizenship today. Therefore, we need a new standard that generates wealth, employment and income, which is capable of using regional resources without destroying them. I think this is the big challenge in the Amazon. A new look into the territory is called for. A closer look at the situations experienced by the population.

This will help us recognize the enormous diversity in the region. I think it is fundamental to dwell on this point, because the image of a homogenous Amazon still lingers in the national and international imagination, but that does not correspond at all to the current reality. Acknowledging diversity is crucial for us to develop an articulated development project. Perhaps the economic ecological zoning – which I am now challenged with collaborating – can serve this purpose.

I'll say something that may be a bit of a shock to my colleagues: much of the Amazon, some 18% has already been deforested. It is a reality. And it shows the enormous importance of what I call "the forest's heart", which is the dense rain forest, still relatively intact, a huge stretch of forest that requires urgent measures for non-destructive use. We need to favor protection efforts in this forest's heart.

Of course, this does not mean abandoning the areas that have potential and will require diverse and complementary efforts. This differentiation is crucial to me. It makes no sense for the Forest Service to stop exploration in the heart of the forest. Therefore, I defend urgent measures toward non-destructive use because it can represent a great opportunity to develop a new and technologically advanced production standard, a real model for tropical forestry regions.

I would also like to recall the importance in identifying – because it is fundamental – the new territorial influence that is taking place in the Amazon. That is, new players who have been given a voice in the region more recently. Like the indigenous groups, who owned land, but had no political effect; the rubber tappers, who lived on reservations, but had no political effect; the family farmers; and basically, several other groups that have changed this idea of a homogenous Amazon a bit. It has never been homogeneous, neither physically, and much less socially.

Within this perspective, all of these aspects are connected, such as the matter of logistics that professor Ennio [Candotti] quoted; it is crucial. Specific logistics, where the river flow would finally play the role it should play, but was never accomplished. And also the complete organization of the production chains for certain products because, as some sociologists and anthropologists say, the biggest problem in the Amazon is the monopoly of market access. Smaller groups have no way to access it. For such, it is essential to equip the cities. I am constantly insisting on this because, without the city, there will hardly be a production chain. They need to be equipped to provide social services to the population, such as education, health.

When reviewing the Amazon, in general, we forget the existence of cities. Even state zoning is all based on land use without considering the city, and 70% of the population lives in urban centers. That is, the cities will be the headquarters of industrialization, which is key to adding value to products. Cities, not only Manaus, are able to develop more articulated industries to forest resources, including timber. I find it outrageous that timber is exported in its raw state. No one thought of a decent timber industry, and of an industry for bioproduction, of oils and essences.

And there is another very important question: cities must be equipped because, through them, one can better qualify the efforts of the State in the territory. Efforts should not come from Brasilia alone. In Europe, in the world, there is a trend towards decentralization. But it is not that mere decentralization. It is a new form of performance of the State through urban and city policies.

Manaus, for example, would be perfectly capable of becoming a world-class city based on rendering environmental services. There is no city in the world, structured in advanced services, that has these services from nature right in front of them, as Manaus does. It would have to be a world city. And it could be an industrial hub as well. I think that the Free Trade Zone was key to the city, but I think it can do much more in conjunction with the forest and environmental services.

I have exceeded the five minutes, but the worst is that I forgot something important: the constitutional issue related to the question of the State. Changes are also necessary in the institutional issue. We have had a framework of institutional dependence ever since Colonial

times. If you do not definitively break away from this dependency path, there will be no development. Sorry, it was half a second longer.

Paulo Faveret – It is very difficult to shoot only once.

Bertha Becker – (machine gun sound effects).

Paulo Faveret – But Bertha Becker touched on a very important point, when she highlighted the issue of a new look. If the region itself cannot look into itself, what will the others say, those who will naturally have an outside look. So, how to help the region build its own look into itself? This involves a series of solutions. This goes straight to the core of our debate, which is the social issue, the players, and how is it possible to incorporate these players in a pacific manner. Pacific in coexistence and in the image.

► Valuing multiple use of the forest

Adriana Ramos – I am a representative of nongovernmental organizations in the Committee of Amazon Fund and wanted to emphasize that the idea of a single shot is totally the opposite to what we need in relation to the Amazon. A region as diverse as this – with plains in Roraima, the plateau in Santarém, the situation of the Amazon state – requires a multiple set of solutions that recognize the core value that made the Amazon a region of national and international relevance, which is the maintenance of the largest remaining rain forest area on the planet.

This happens because it has been used for thousands of years in multiple ways by the people who live there. We need to harness the multiple use of the forest, because in a sustainable development perspective, the meaning of competitiveness, large-scale, infrastructure, will be totally different from what Brazil has historically done in its territory. Without a clear sense that we need to review these parameters, we will not budge from where we are. With the current development parameters, we will not reach a solution for the Amazon that will allow it to continue to be the relevant area that it is today, in the future.

We are always trying to invent – based on the experience of what we did in the Mata Atlântica and what we are doing in the (Brazilian) Savannah and elsewhere in the country – a solution for

the Amazon. The idea of large-scale production, for example, may destroy the forest. If we have to carry out extraction production on a large-scale, we will put an end to the forest. If we have to choose a product, as is originally stated in the proposal of the Secretariat for Strategic Affairs to create hubs for products, we will kill the reasoning behind extraction production.

That is, we need to reinvent our ways of developing, starting with what the Amazon has today. The Amazon should be an area that is viewed the same way by all sectors of the government. At the beginning of Lula administration, there was a plan to prevent and combat deforestation, a sustainable development plan with the prospect of replacing predatory activities with other approaches. But that view was not incorporated, or enforced, by all ministries, but rather only by the Ministry of the Environment.

The perspective of what will be done for the Amazon needs to be, in fact, recognized important by the other areas. We're only here today because the Ministry of the Environment has broken a barrier within the government which prevented the inclusion of forests in the discussion on climate change. With that, it managed to leverage the idea of creating a fund for the Amazon. We live in a situation of political conflict between different areas of government, with no prospect of solution. To surpass these barriers in the environmental area and move into other areas is essential.

In this sense, we must see the areas of the Amazon, including those of agribusiness, as consolidated areas. The issue of ecological balance is essential. We will not move ahead on the issue of production, to sustain production and the export of commodities produced in the Amazon territory, if we do not think that these areas need to have some balance. Today, there is an intense discussion on the operational model of extraction reserves, but we have never had real investment in such reserves.

We must think of the consolidation of these areas and use agricultural and cattle-raising areas within a perspective of ecological and social balance, because it is important to have a development perspective for the Amazon. So far, the reasoning behind this development has not resulted in social benefits. There are regions with a high HDI because they have urban centers with health and education, but that does not mean that the entire population of the municipality is benefited.

The future of the Amazon reflects a perspective of change needed in the world. In this sense, Brazil has a very important commitment regarding the Amazon Fund, one of the few appropriate financial mechanisms for this change. Currently, in our economy, there are not tools to ensure greater value to the standing forest than to those activities that foresee the removal of the forest.

For this reason, the idea of a financial mechanism that recognizes the role of forests, within the scope of the agreement on climate change, and rewards countries maintaining this forest is one of the prospects for a solution. Brazil can become a country that will structure models. And we have this responsibility of Brazil being one of the few countries with forests that have legislation that recognizes territorial and economic rights of local populations.

► **New technology will save the forest**

Marilene Correa – I will try to police myself and shoot at least three times, instead of just once. I am dean at a state university which is the sixth largest in Brazil in terms of enrolments.

Generally, all comments and all initiatives that beseech something innovative in relation to the Amazon appeal to two recurring parameters. On one side, leave everything as it is; on the other, draw on the experience already consolidated in Brazil.

Previous interventions pointed towards the idea that this change of mindset will start envisaging the Amazon as an experimental territory for all the 21st-century technologies to save the forest, to integrate citizenship, to expand the importance of the Amazon within the BNDES, which is a metaphor for Brazil, and so on.

To come up with solutions for the Amazon with technology, engineering and 21st-century processes is a mistake from the standpoint of one who aims at scientific development to better establish the dimension of environmental services, improve the accounting of forest products, and promote new institutional engineering.

The other would be to accept the hypothesis that the Amazon, or the Amazonian problem, or the new development efforts for the Amazon should surpass geography and history. Without thinking about this, we will do nothing in the region. If we are currently at the scientific or

technological threshold of forest knowledge, it is because surpassing history and geography did not stop the extraction or the rubber economy. It started to maintain a worldwide and nationwide dialogue.

What will save the forest is not the technology of outdated engineering, but rather the technologies of biotechnology, nanotechnology, scientific models of climate change. These are the technologies to measure the atmosphere chemistry, assessing new prospects for hydrology. When we think of the Amazon traveling in canoes, we forget the possibility of using the Brazilian aircraft industry or thinking of new transportation technologies. This is a hypothesis that has to do with the first shot.

What is the Brazilian foresight for a public commitment to take the first steps towards creating new opportunities in the Amazon? With the remains of the present and with successful experiences, which are minimal, we will not get too far. The issue of scale is important in terms of a convincing strategy that the opportunities in Brazil necessarily involve an economy that has forests, hydrology and culture as a focus.

This new look into the Amazon would, somehow, induce the development institutions, the efforts of ministries, the institutional processes. In a way, it is possible to implement this process, starting with an inventory of successful experiences related to the Brazilian State's decision to publicly commit to encouraging these new opportunities.

We need to change the approach that we can take advantage in the Amazon of whatever no longer has a place in the rest of Brazil. Otherwise, we will not surpass the limit of history and geography.

Even faced with the complexity of the Amazon situation – it all has to do with the first shot – the inventory of diagnoses cannot consider its parameter the pre-constitutional situation of 1988. That is why Gersem Baniwa speaks about tradition. And the person speaking is an important leader of thousand-year-old indigenous people who have survived colonial society and national society – they have survived even Brazil.

This point of view, of course, will bring about a transformation in the relationship between the State and society, but especially in the relationship between Brazil and the Amazon, which

will end up with new parameters, nicknamed by some of the paradigms. But it is much more than that, it is a new enthusiasm and a new intellectual atmosphere for achievement.

► Proposal for a transition to a new development model

Joséluis Samaniego – In Brazil, just like in other countries, there are problems related to the advantages of the unrelenting predominant paradigm, which attributes zero cost to the environment and environmental services and, therefore, leads to degradation. These advantages are in the scale of markets, listed in already amortized, fixed industrial and technological costs, already established production agents, governmental institutions set up to support them and the availability of credit, both public and private. The new model has neither consolidated economic players, nor comparable state support.

For a new model to be viable, you need to lower the profitability of “unsustainable” undertakings (understood, in a simplified way, as those that do not add value to the environment and environmental services) and increase the profitability of “sustainable” (such as those that attribute such value).

In this sense, there are two challenges. Firstly, in some cases, sustainable business will not be profitable if its positive externalities are not internalized through public initiatives. A historical example of public intervention, although in the old model, in the internalization of externalities, is the construction of Boulder Dam, in California, which enabled undertakings in the valley of the Colorado River, which separately would not have been viable.

Secondly, it is not sufficient for sustainable projects to be profitable according to the usual parameters of profitability. They must also be more profitable than the alternative in terms of land use (extensive cattle-raising).

Skipping from the predominant model to the sustainable one requires the country to accept the importance of the environment and, in this context, the Amazon. This process requires a transition plan between the current and the desirable, through which profitability of the undertakings that are not sustainable is reduced, sustainable ones see increased profitability, and economic agents have support to adapt to new determining factors concerning

profitability and to start to take an interest in consolidating these new parameters. Thus, one avoids a competition between two incompatible models, including within the State.

Among measures to make this transition between the models feasible are the incentives for projects involving assets, services and alternative infrastructure – waterways, for example –, less carbon-intensive and less impact on land use. In parallel to state support for this alternative, it would be necessary to make the established model more expensive, with smaller investments in road infrastructure, which is considered unsustainable, taxation on fossil fuels which represent the cost of negative externalities, the pricing of CO₂ in the calculations of return on projects to receive funding and the end of credit to non-sustainable activities.

The chart below summarizes what I propose:

	Old model (Business as usual)	Transition	Sustainable model
Infrastructure (predominantly in synch within the public sector)	Private transport based on road and fossil fuels, centralized generation of electricity, support for these activities through private and state credit.	Deadlines for measures that reduce the profitability of the measures of the old model and enhance those of the new model; volumes and percentages of the budget; communication efforts.	Non-motorized transportation; waterways, satellite communications; wireless; decentralized power generation, in small-scale, renewable that does not require large investments in network.
Economic activities (mostly a dialogue with the private sector)	Extensive cattle-raising, which benefits from loans / subsidies, large-scale commercial agriculture, large scale mining.	Supplier development or adaptation, establishing economic incentives for sustainable activities and reducing incentives for unsustainable activities, support for the design of new business models (the steps in the production chain).	Controlled fish farming, hunting and fishing, sustainable cattle-raising, alternative to the Manaus Trade Free Zone, diversified cattle-raising (native or low impact species), cultivation of the forest canopy (cocoa, coffee, fruit, creation of local species), development of biotechnology and biomedicine.

Transition involves multiple players. The BNDES is a key player. It may contribute by decreasing support for undertakings related to the old model and increasing support for those related to the new model, facilitating the design of business and fostering the multiplication of successful experiences. In the Amazon region, this must be done in coordination with other relevant players.

However, the first effort toward institutional coordination is internal between the different areas of the Bank itself. There must be a sole counter for the funding of projects that considers the parameters of the new model, so as to prevent inconsistencies and competition from being generated between the two models for the agreed geographic area, in the portfolio of funded projects and their corporate stakes.

► **Brazil needs to add value to the standing forest**

João Fortes – I am from the People of the Forest Network, an initiative that brings together indigenous leaders such as Airton Krenac, Marcos Terena, Davi Yanomami, Francisco Ashaninka Benki Ashaninka and Almir Surui, rubber tapper leaders – especially the Alto Juruá, runaway slave settlements (quilombos) and other local traditional communities. The Network operates primarily in land conservation units.

I will bring to mind, perhaps reinforce, some things that Ennio [Candotti] commented concerning the need to add value to forest products. I heard this for the first time in the 80s, from Chico Mendes. Therefore, we are talking about a search of over 20 years. It really is a challenge. Bertha [Becker] addressed the need for a new development standard, Marilene [Correa] mentioned other values, biodiversity, biotechnology, hydrology and culture. I remembered the traditional culture, represented here by the presence of Gersem [Baniwa] and which are new values.

In this quest for value for forest products, we realize that today there is a search for the standing forest, which Brazil does not appreciate the way it should. We live in a changing economic world, not only as far as finance goes, but also a change that derives from the principle of scarcity. The less you have, the more you appreciate. We're getting close to an economy that puts value on water, for instance. We do not value the water in Brazil.

Antonio Nobre, an important scientist who has done some work on the relevance of the water system in the Amazon for South America, showed that the rain system is driven by the Amazon and retained by the Andes. That is, the rain in the south of the country – and in Ribeirão Preto, for example, needed for the orange crops – comes from the Amazon. This is not measured, it is not given value, but the notion that we are dealing with an important value is growing.

Brought up here was the issue of producing essential oils, wood, medicine, not to mention the traditional culture and traditional knowledge, which, for lack of support, are dying. This is about an entire community that does not exchange knowledge. Therefore, this entire library will expire. And that is what is happening with various indigenous and traditional communities in the Amazon.

We must extend the concept of added value and include, for example, values for the air, which is the issue of global warming and climate change. The donation from Norway occurred, evidently, because they are worried about climate change. We need to reinforce the importance of this value.

The Peoples' Network is operating in a pilot area in Alto Juruá, with the objective of encouraging reforestation and forest preservation, as well as motivating the communities living in indigenous areas – or in extraction reserves or in national forests – to come back to the forest to live.

For example, Amazon rubber is not valued, it is expensive. It became much easier to buy rubber in São Paulo, Bahia or Espírito Santo, or even that from abroad than that produced in the Amazon. Rubber tappers have lost that income. They began to hunt, to hunt with dogs. Dog kills the young; dog chases away the game. Soon after, there was no more game, and fishing with poison began.

Well, when you throw poison into a river, all fish emerge because the substance removes oxygen from water. Fishing becomes abundant, except that in about a year there will be no more fish in the rivers. The piracema [phenomenon that occurs when the fish rise up to the headwaters of rivers, swimming against the current to spawn and reproduce] practically no longer exists, because the fish are surrounded in the rivers and fished from the lower areas. That is, fish do not reach the headwaters.

There is an experiment with the Ashaninka people, on the border of Peru, who recovered their own land with traditional, millennial knowledge. With this, these people proposed sharing the culture recovery experience, the return to the forest, with other communities of indigenous and non-indigenous people, including the rubber tappers of Alto Juruá, a population of eight thousand people, which is cutting down the forest to open up space for cattle. There is no fishing, no hunting, no rubber tapping.

And why is this going on? They hear about those fantastic parties in Rio Branco, in the state of Acre, such as the agricultural fair, full of celebrities, big cars, always with so many concerts, and compare that with their fair for forestry products in a square in downtown Rio Branco, and think: “I want to be a farmer.”

Farmers taken from extraction reserves, when they were evicted, never received anything. They remained there, and since there is no more rubber, they expanded their activities. Rubber tappers became land sharers, giving the landowner half of the production obtained with cattle.

In extraction reserves, where it is forbidden to raise cattle, today every family already has a pasture; there may even not be any cattle, but the area is already deforested just waiting for some farmer to come along with a couple of heads of cattle, which would guarantee some income for them. But when the farmer comes along, it is a disaster. Cattle eat the crop, because the land sharer cannot afford to build fences, and the issue ends up turning into conflict. The animals have no veterinarian, have no vaccine, they eat that mud on the riverbank...

Some communities already are already encouraging the interruption of this process and returning to the forest. These communities opted for reforestation, using the agro-forestry system because it mixes native plants, mahogany, cedar, fruit cherry trees. Over the next two or three years, this population will begin to live off the fruit. The fruit attracts game, and some of them can feed a lake, a pond for fish farming.

Finally, the issue of local income is very important. We face the following scenario: employment is only possible if someone works for City Hall. Up to last year, the city’s school lunches came from the South, and the food was confined to some sort of mixed ham, biscuit and cassava root from Paraná state. This is a contradiction because the Amazon is rich in cassava,

fruit and potatoes. Today, it is already possible to sense pressure for school lunches to be provided by local producers, encouraging agro-forestry crops.

When they restore native vegetation, there is the possibility of selling mahogany, cedar, as carbon credit. I have worked with forest products for over 20 years, and this is the first time I have seen someone who wants to buy a product. We always tried to sell products, such as cashew nuts, vegetable leather, herbs etc. For the first time in my life, I see people who want to buy something, which is the air, a carbon credit. And that is an asset.

► Use the Norwegian experience with indigenous people in the Amazon Fund

Kristian Bengston – I am responsible, at the Norwegian Embassy, for the Support Program for Indigenous Peoples, which has operated for more than 25 years in Brazil to strengthen the indigenous movement. Norway considers this initiative to bring together people involved with the region to exchange ideas a very favorable idea.

I am here today to contribute, especially with our view of indigenous peoples. We consider it very important to add this aspect to the work related to the Amazon Fund within the BNDES.

The Amazon Fund is a new experience, because it works with projects aimed at combating deforestation and at social development for the approximately 25 million people living in the Amazon. Our program for indigenous communities is aimed at strengthening indigenous movements and indigenous rights. We would obviously like to find synergies between our work and the positive agenda of the Amazon Fund.

* * *

At the end of the first round of presentations, Paulo Faveret invited participants to focus on two topics: the need to add value to forest products, and the issue of cattle-raising linked to the lifestyle and culture of the local population.

Discussion was to focus on diagnosis, ongoing initiatives that deserved to be admired or initiatives proposed but not yet implemented. The objective was to keep the focus on desirable efforts for the region.

* * *

Ennio Candotti

I will quote an example that I consider symbolic. There is a community that survives by harvesting wild cocoa and selling it for R\$ 10 a kilo to a German company that puts it on the European market as a high-quality chocolate for R\$ 500 a kilo.

Adding value means that we should think about how this community that produces cocoa of a very high quality can put ready-made chocolate on the German market. How to do that is a challenge that is on our table. Producing high-quality chocolate ready for sale in German supermarkets may seem a very distant goal, but it should undoubtedly be the goal of a conversation like ours, or else, it is not worth even discussing this issue.

The issue of chocolate, obviously, is valid for andiroba, for palm hearts, etc. It is not difficult to train people to produce this chocolate. It is also not difficult to take the machinery up to the location. Taking the chocolate bars over to Germany is an intermediate hurdle. The greatest difficulty is to maintain the machinery and a site that is ten days away by boat from Manaus, with no airport.

Again, what we have here is the issue of the infrastructure needed to enable ambitious programs in order to add value. This cannot be paid by the chocolate buyer; it cannot be paid by the chocolate producer. It is an intervention of the State that must decide whether to create the necessary roads to facilitate economic development of a region. This was done in other regions; we must now ask whether it will be done in this region.

This is my symbolic example which I would like to discuss, because defining the means needed to enable a production of high added value on sites difficult to access is within our reach. All that is needed is to create regular seaplane flight routes. If producing seaplanes is not in the BNDES' plans or in the plans of our great aeronautical industry, then it must be included.

If we want to intervene in this area, one of the points that could be reviewed by the Bank is to enable an industry and a communication network in the Amazon via water planes, with all the complexity that the operation will require. It is up to us to train people and find the chocolate masters needed to adapt our chocolate to the Swiss, French, German, Chinese tastes.

Marilene Correa

Let us imagine that the pact of governance necessarily involved three choices: finding the chocolatier, paying the cocoa producer – instead of R\$ 500, the price the Germans sell at, pay R\$ 100 – and getting approval from the forest network for this payment, with no intermediation. In this case, we would be speaking about governance itself.

The main problem of governance in the Amazon is that many of the people who speak for the people and populations have become political enclaves. They start by replacing the historical subjects with circumstantial players with access to, for example, the BNDES' funding and to contact with the Ministry of Science and Technology and the Ministry of Environment.

These people who speak for others without having been elected start to replace the institutions, universities, academics. Why? Because it is a new standard of governance that is called the spokesman for those who had no voice. I think the indigenous people have already expelled those who did not replace them due dignity. I am giving the example of indigenous people because it is a reality that I know more closely.

But the main issue would be the following: how do the different forms of governance express themselves in the topics and practices in the Amazon? Establishing a large territory of utopias where everyone establishes their own governance or an expression of civil society. In the process, it appears much more as a topic than as fact. The fact appears more like a process of resettlement of historical subjects, like an enclave.

An agreement, a dialogue of reconciliation would take place as these initiatives were no longer obstinate and diminishing. The possibilities of the Amazon are often diminishing, they think on a micro scale, they think with minimum parameters, with parameters that do not aim at the future, they aim, at most, at a return to traditional life, as if it were possible to return to the traditional life as it was in the mythical age.

Joséluis Samaniego

Governments are organized to work in sectors, not to work in territories. Incentives are adopted with no horizontal integration (between sectorial areas of the government)

nor vertical (between levels of government) based on mutual objectives, and with shared instruments and incentives, and they generate particularly severe contradictions and distortions in regions as complex as the Amazon. One example is the incentive to expand agriculture in parallel with policies to reduce deforestation. Also in terms of social politics, the viable and desirable solutions in the Amazon may be different from those viable and desirable in the south of the country.

In this respect, one can draw inspiration from examples of other countries. In Mexico, the Procampo program warrants attention; it contains special rules for certain areas, allowing agencies whose mission is to foment the agricultural industry to use alternatives to do so in a sustainable fashion in critical areas.

Today, there are guidelines for the Fund, but it would be important for guidelines that define the Bank's efforts in other areas to be consistent with these and understood and approved by higher levels of the Bank's management.

International experiences and modeling exercises of the effects from different instruments on variables considered in the traditional assessment of projects (multiplier of employment, tax etc.) will help provide legitimacy to the proposals for changing the model within the Bank.

Among the duties that the Bank may perform in this process are: the BNDES can be a representative of international consistency by establishing a menu of activities that are funded (biobusiness, river transport by water planes, reorganization of public transport, systems for controlled designation of origin, certifications), and another of activities that are not funded (roads, activities related to deforestation). It would be necessary to survey information regarding the environmental services in the Amazon and others, and how different sectors of the Brazilian economy and society (in addition to global) benefit from them.

Paulo Faveret

This is a radical approach because it places infrastructure as the center, the core of this new development model. Through a new structure, new activities are made possible.

Eugênio Scannavino

I will try to go a little further down the line, to the production in the community and the process of adding value to a community product.

First, I think that the lifestyle in an extraction community, a forest community, is the lifestyle of multiple productivity, multiple production, multiple products. One day, it is fishing, another day, it is nut harvesting, another day, açaí, another day, drawing straw. These are multiple activities distributed throughout a harmonious lifestyle in relation to the forest that supplies a reasonable good part of the needs of this community.

When we come to a community, we want to make a producer out of it according to our criteria, that is, equip it with the capacity to produce a single product, in an industrialized way or in a form that can be absorbed in the competitive market. We need to know two things: if the communities want to do this and if they have this capability. Because this requires a workload that completely changes the system of their lives.

I will mention a very simple example: to make syrup from a fruit to be sold, it must be produced inside a small, closed house, the producer needs to wear a uniform and have ICS; otherwise, it will not sell. Who said that the community can produce this way? Has anyone ever asked this community if it had a workforce available, working hours? Because they work hard, with low productivity. They produce cassava far away, carry it on their back, putting it inside a canoe.

As a result, it is necessary, first, to foster a transitional process. For example, the production of flour, which is manual, can be mechanized. What do we need? First, accurate knowledge of the reality, and second, to not arrive with illusions and production ideas in communities because they are unable to cope with certain changes.

Often, I see government agencies encouraging certain crops, such as açaí. “Açaí is making money, we will plant açaí.” Bottom-line, in a short time the land is full of açaí and there is no money. Now the fad is andiroba. Everyone will plant andiroba, but the population eats cassava, nobody eats açaí, or andiroba.

Conclusion: first, production ideas, no; second, extreme knowledge of the reality of the community. From there, empower this community, encourage organization of production,

organize workers in a syndicate. It will also be necessary to support technology and infrastructure for production, and support design to adapt this product to the market.

This way we are producing and adding value. Then it will be necessary to make the foreign market aware to ensure payment of the aggregate value, which is not only an environmental value, but it also has a social value. Why? Because if we produce, for example, baskets or fruit pulp, the community cannot guarantee a regular supply or minimum quality requirements. This market has to know that it bought a basket from a community. This basket can discolor a woman's gown, with indigenous painting, the handle can break, until it is made appropriate for the market, until it is industrially suitable. One cannot expect a community to be competitive by making a basket.

There is also the need to monitor and radically combat all illegal products because there's no way these forest products gain added value competing with illegal production. We need research, including new ways, new sources for biotech products. I think that the Amazon could also be a major point of high technology, such as the Manaus Free Trade Zone. We have other types of technology there.

Paulo Faveret

How much does this cover in terms of the Amazon area?

Eugênio Scannavino

This covers all areas not devastated by large-scale agriculture, which accounts for around 80%, 70% of the Amazon, which is a rural, undamaged area. Devastation reaches 17%. Some 25% of the area is under immediate pressure. And 50% of original areas, and the rivers and waters are included in these areas. The areas that are in conservation units do not always remain preserved. There are many protection areas that are pure grazing lands.

Adriana Ramos

There is much room for intermediation in the Amazon, because we face a number of difficulties regarding the issue of production. One of them is the following: communities have advanced a great deal in their political organization.

The indigenous peoples, the communities have sought to transform their traditional forms of social organization into formal models recognized by the State through indigenous organizations. But those organizations were created with an idea of serving their role of political representation. They are not organizations created to be trade associations and cooperatives. But the role to solve other community issues has been given to these indigenous organizations.

Therefore, a key issue is to think of appropriate ways for workers to associate, reflecting the traditional social organization to deal with this production and marketing challenge. This is a central question: The absence of this is allied to the fact that the government cannot federalize its policies.

Today, the government has a minimum price policy for forest products, which is a significant advance. However, only those who can knock on the doors in Brasília can manage that. It is difficult to make this policy become a reality, which opens up room for intermediation.

Another key issue to ensure and enable direct relations, even with the idea of anchor companies, as mentioned by president Luciano Coutinho earlier, is the issue of regulations. Today, if we think of a super-innovative biotechnology policy in the Amazon, to make the most of that biodiversity, we will simply run up against the issue of the Brazilian Patent Law. Where will the benefits of this biotechnology policy be? There is no guarantee that this benefit will be in the Amazon or in Brazil.

We do not have even today a definitive law on access to genetic resources, for example, ensuring that, in a direct relation of a community with a large pharmaceutical company or the cosmetics industry, this community's traditional knowledge will be duly recognized. Although there is already a provisional measure for this, this MP has not yet been respected.

We have a successful experience in support of the Xingu Indigenous Land Association, for the production of honey, currently sold in supermarket chains in the cities. Those who followed the process know that in order for honey to derive from an indigenous land and get to the supermarket, without any subsidy, was a long way. The Xingu Indians only managed it because they had an NGO alongside them, getting international resources to support them.

One must recognize the dimension of the issue on credit regulations. Otherwise, the profitable activity in the Amazon will be deforestation to produce soybean or cattle, which is not even profitable.

Bertha Becker

There is a key issue: to recognize the need to empower communities to compete. It is education, training and capacity building. Without it, they will never be able to compete with the powerful. What I see today in Europe and elsewhere in the issue of planning is enhanced competition, involving the territories, the communities at various levels. If we want to implement an adequate production process in the Amazon, we must empower communities.

Marilene Correa

They are adaptable, what they lack is the qualification for this level of distribution, but they are prepared for others. We must join these two things, training with adaptability. Because they have survived on their own, despite us.

Paulo Faveret

Are we denying the market here?

Bertha Becker

On the contrary, because otherwise they become marginalized, they are poorly incorporated. Poorly incorporated and exploited. This is the issue.

Gersem Baniwa

Many issues have already been raised from the perspective of indigenous communities. When we talk about the Amazon, specifically referring to communities, we are talking about a significant number of individuals, people and lands very far from urban realities. When we mention land of the Yanomami indigenous people, we must bear in mind that this is 10 million

hectares! To reach or leave a Yanomami village, we have to charter a plane, travel for two or three hours, and pay R\$ 10,000 to R\$ 12,000.

This reality demands that certain procedures be followed. Without it, the chance of success in any initiative under this perspective is very slim, almost nil. First, there is the need for leadership training and human resources for this new reality of theirs, such as learning to do math. All they wanted from school, from education was to learn how to do math to avoid being ripped off by the miners. They produced a little gold and were robbed. This is capacity building. And it has to be appropriate, respecting their socio-cultural reality.

The indigenous perspective, when talking about the economy, is not that of an economy separated from other spheres of life. I spent four years in the Ministry of the Environment managing a project to fund indigenous people. Our public administration is highly schizophrenic for this reality, because they finance projects, but the community interprets that monetary value it has just received according to its own culture.

Let me give an example for everyone to understand what I'm saying. A given community received funds earmarked for a work plan, agreed and signed. They threw a great party, were culturally thrilled, and the chief thought that the best way to apply those resources was to buy an engine and give it to the guest, the visitor from the Venezuelan side.

It took us exactly one whole decade to justify this purchase. How could public administration accept that? For the government, the chief stole, embezzled, committed an illegal act. But the chief feels that he did what should be done according to his culture, tradition. The gesture had immeasurable social value.

Given this, how do you pass on funding for school lunches? For this, that community needs to create an association, with a registered business number, a bank account. Imagine a bank account for the Yanomami, who is 10 hours away by plane. My conclusion is that it is not the indigenous people who have to adapt. There must be some way, some effort to adapt on the part of the State, of public administration to remedy this adversity.

And as far as the indigenous issue is concerned, there is still another very complicated challenge, already mentioned here by Adriana [Ramos], which are our laws, our regulations.

For the indigenous issue, it is very complicated. I am speaking as a native. We feel that we cannot do anything with our resources, because apparently everything is prohibited. All we get is “no.” They never say “yes”. We do not know what we can do with the resources we have on indigenous lands.

We must organize this situation, establish parameters that respect this social diversity. On the other hand, it has to be clear – and for public policy an investment of this nature is very important – that indigenous people, as much as many anthropologists try to explain and insist, are not naturally conservationists. Indigenous people, when under pressure, faced with uncertainty, difficulty to survive, do in fact practice deforestation, kill fish, hunt and sell to survive. What rules, as indigenous people say, is the stomach. If you’re hungry, you’ll do anything to survive. From what I see, this is human condition, it is the struggle for survival.

Caetano Scannavino

I agree with everything that was said, but I would also toss in a provocative cultural issue. We, who are there on a daily basis, must understand that without a solution to that social demand that is suppressed at the base, it is not possible to repeat “Oh, preserve nature, the tree is pretty.” I also go back to that sentence: “It is not enough for Caesar’s wife to be honest, she must appear honest.”

That is, it is not enough for us to believe or to be sure that the standing forest is more valuable than deforestation. It has to appear so for the Brazilian government, for the Brazilian population. For the population living in the Amazon, this is not the viewpoint. Development is money, roads, agribusiness. It is a reality today.

Paulo Faveret

There’s a symbolic issue in all this, isn’t there?

Caetano Scannavino

Yes, there is. There is an effort to recover the identity of this population with the forest itself. It is lost, but needs to be done. However, it is not going to put them back to what they

were 200 years ago. There must be a search for this lost knowledge, for how it can be retrieved and how to take advantage of all this for the world. In the values of today's world, how does one adapt to this reality aiming at a business opportunity for the population?

This is a challenge. When the community people come to a clear understanding of the importance of the knowledge they threw away because they thought that it was not theirs, things in fact will begin to happen, because there will be the perception that that reality was the best for their standard of living. Until that happens, for these communities, what is important is the researched knowledge on the people, broadcast by television and which resulted in a change of behavior, of culture.

João Fortes

I would like to reinforce what Gersem [Baniwa] quoted and even recall an issue concerning the product market connected to the forest. The beniuas also have a relationship with a large company, with stores in Rio de Janeiro, selling baskets, with relative success, but also with difficulties. The company wanted initially, thousands of baskets, and in the forest there are not thousands, not enough straw nor people. To meet the demand, they would have to do solely that, they would not even be indigenous people any more, but rather workers.

This relationship is a crucial issue. If there is incentive for people in the forest to start using the money, to turn into white people and migrate to the urban centers, they will go to the cities and will become beggars. In our case, the same would happen. If we were to live in the forest, since we do not know how to live in the forest, we would die. The existing wealth of the forest is enormous, coupled with their knowledge, immeasurably valuable. It is a very delicate matter to encourage forest people to turn into urban workers.

Another important point raised by Gersem is the issue of money. The people in the Amazon usually say that money is white man's witchcraft because it heightens the risk of perverting the whole process. There is a big difference between the exchange of gifts, quoted by Gersem, which is a ritual, and another, which is commercial. The value is in the symbolism of each.

I have a lot of personal experience working with exchanges in the forest. The best chance of adding value today is by adding cultural value. It is the consumer who buys a product, be it chocolate, bania basketry or Xingu's honey, while being aware that the difference is in the source of its production. This negotiation should be valued and added to the product. There is already a supportive international market, but it is too small.

What I really value in the Amazon, especially for the communities living there, is to be able to preserve the forest as it is. Instead of contributing to offer future generations water, air and biodiversity, we are, on the contrary, burning everything in the process today, with the devastation that occurs in the Amazon. So I think the best added product we have is to be able to offer these communities the means to monitor land invasions, hunters.

Paulo Faveret

A issue of clarification: What we are talking about here has to do with indigenous people, riverside dwellers, fishermen, rubber tappers; this is the universe. The lumberman is out of this conversation ...

Marilene Correa

Shouldn't they be?

Ennio Candotti

The paradox is that the Amazon Forest is famous for CO₂ emissions, when it is just one thousandth of its value. It is worth far more. The focus is deformed.

I'll add a few more points for us to improve our understanding. Even listening to the comments, I am under the impression that there is a certain conservatism in the assessment of what forest products could be explored and are in fact explored.

I will give you two examples. Going back to the case of cocoa, I am convinced that much more valuable than the chocolate bar is the seed from that wild cacao. Except that we do not

exploit it nor do we have adequate legislation, or structure in the villages to turn the seed into a commercial commodity which implies the capacity to improve, the capacity to handle. Including other uses, other products, is a permanent discussion that is not part of our discussions.

You sparked some hope for the development of biotechnology centers in the Industrial Pole in Manaus, capable of collaborating with the process. They will not help, but rather will be in the way and will not allow this to be developed. Either the communities develop their own research centers, or there will be no peace in this land. Of course, I will listen to the argument that this cannot be done in 10 years, but it will be possible in 20 years.

A very simple example: andiroba coming out of indigenous communities is sold to a company for R\$ 10 and resold by the same company for R\$ 500. Why? Because there is the lack of capacity to purify this oil locally, and this cannot be done in Manaus or Tefé or in any center with a laboratory because it would be new internal exploitation. It would no longer be the company in question, but rather the local laboratory that would sell it for an expensive price.

Let me give another similar example. The world of poisons is scarcely tapped into. A drop – 10 grams of jararaca pit viper or spider venom – is worth 10 tons of wood. It is a ship full of soybean. Ten grams in the Swiss market. Well, we are not succeeding to train people capable of handling spiders to remove this poison. In general, spiders are burned and become a barbecued delicacy.

This agenda is much broader than these two examples, but it is not part of our discussions. Hoping that it comes from the laboratories and centers ... I think it is not likely. Either we build, as Bertha [Becker] and Marilene [Correa] insisted, the capacity and the adaptability locally, using means that are within our reach and which will require a much more agile infrastructure, or we will forever be happy that we were able to place a few additional cashew nuts in the market, which obviously will not help us get very far.

Bertha Becker

Regarding this, I proposed creating labs in the forest, like the one in Juruá where there are already advanced communities for bioproduction of oils, in Jacareacanga because it has minimum infrastructure that could be used. Of course, being part of a research network.

Eugênio Scannavino

It is important to emphasize the need for legal support and impartiality in the contracts. I know of no contract in the Amazon that is neutral. An individual is a producer-supplier for a large company, and this large company introduces the product as if he were a partner. Well, either he is a supplier, a worker or a partner, which is a business partner. Most contracts are for labor and quite monopoly-oriented. Abroad, the product is sold as a partnership and social support. Normally, legal support is provided by the company's lawyer for the community.

I will briefly report on a case we experienced when dealing with certification. We provided support to a group of women from communities in the region of Arapium to manufacture baskets from tucumã straw, which is a palm tree. The community did all that homework related to work of forestry management; we provided assistance for capacity building, we studied the way to make it adequate, recovery of culture, of the forest's identity within the forest. For example, previously, they used aniline; but they went back to working with natural dyes. The buttons, instead of being purchased in the city, started to be made of seeds once again. Finally, we have the management of the straw, the forest management, inventory, everything was done. The baskets went from more or less R\$ 1,000 to R\$ 35,000 in terms of trade per year. A percentage of the profit of the group of craftspeople is passed on to the women in the community so that they can undergo pre-natal care in the city.

They entered the domestic and foreign markets, everything done the way one should work in the formal market. They were certified. But here comes the question: "Where will they go from here?" Even with all this success – they were even interviewed by *Vogue*, the press, they won awards –, we have lots of doubts regarding this undertaking. That is, certification made the product unsustainable.

Marilene Correa

I will also illustrate, with three specific experiences, the relationship between adaptability, skills and the survival of the urban societies or a type of forest urbanization. A community which is called Belém dos Solimões, with six thousand inhabitants, two thousand speak

Portuguese, with four thousand people in ethnic groups, inhabited predominantly by the Ticuna with formal presence of the Ministry of Justice, Funasa [the National Health Foundation] and Funai [National Foundation for Indigenous People], but the physical absence of all of them.

Apparently, these six thousand people have no capacity to survive. No one is pale, no one is sick, no one is starving, because they are a fishing people. Obviously, they still know how to survive in the forest. This is one example.

Example two is Humaitá, a town that was a riverside settlement but became a road, like a ghost town, lost, without the slightest possibility of evolution. What is the opportunity given by the model of urbanization and the pseudo-industrialization model or the pseudo-utopia of industrialization?

Example three is Céu do Mapiá, which is an oasis in total poverty, on the Purus River. In this oasis, for religious reasons, more than 400 individuals gathered, all college undergraduates, professionals who willingly left their hometowns, their urban territories, and went to live off the forest. Nothing gets spoiled in Céu do Mapiá: the fruit culture of the tropical harvest is processed into products that are jellies, with appropriate technology.

Anyway, Céu do Mapiá manages to have the internet, because it uses solar energy and to some extent, it protected itself as an oasis in poverty. How to align these three experiences, if not aligning adaptability with knowledge?

I believe we could establish a good standard there. There is an invisible economy in the forest that needs to be better accounted for. Not only to transform the conservative view of our products. There is talk of signs, certain modes of communication of insects and species, of the biotechnological diversity and the experiments carried out by INPA [the National Institute of Amazonian Research] with some species of fish that have protection against the solar impact. That has not been accounted for by science yet, much less made available as a new product.

I speak of an invisible economy, not just that of drug trafficking, but one that undergoes some specific experiments in institutional initiatives or not, and that result in a significant increase in the population of the forest. This is sometimes visible in the most isolated

communities and in those less affected by the usual policies for economic development. This inventory, just a large-scale initiative, can succeed.

João Fortes

Marilene [Correa] was talking about the attention of public assistance. The issue is really serious. The Health and Happiness Project is trying to put antennas up for communication via the internet in the communities. To have an idea of how the process is, there in Brasilia, the girl from the Ministry of Communication, very helpfully said: “Look, it’s very simple, just fill out the form and send it to us; you can even send it by *e-mail*.” She doesn’t have the slightest inkling of the reality in the Amazon.

This lack of assistance leads to, for example, the Cintas-Largas being accused of allowing diamond miners into the region. Except that the miners provide medical assistance, meet the needs and demands that the government does not.

The Suruí in Rondônia and Mato Grosso are in an enclave at the entrance of the deforestation belt. The logging companies go onto indigenous land at night and with the complacency – or complicity – of indigenous families, go straight to the trees and cut them down. That is, they cut it down during the day, and at night they leave with the truck.

This issue cited by Marilene [Correa], of adaptability, is of the utmost importance. No use forcing – as Gersem [Baniwa] also said – communities to enter into a bureaucratic process that they do not understand. We need to get the bureaucracy to adapt to their situation, so they can be what they are.

Kristian Bengtson

I bring an experience from the Sami people, an indigenous people in Norway. They have experience protecting intellectual property, surveillance of themselves and in partnership with the government on any pirated product, to ensure that the market has access to products that are genuinely indigenous, highly valued. Indigenous Sami handicraft is very expensive; it is done on a small scale but has a very specific market.

I think Brazil, with its fantastic diversity of people and beautiful crafts, has everything possibility of creating mechanisms to enhance this handicraft and export it, with good returns to the community, adding a lot of value to the goods.

* * *

As the second session of debates came to an end, the third round was steered towards reflections on elements for implementing a transition plan. An idea that gained strength was that the country and the BNDES, through the Amazon Fund, should establish a strategy to leave behind the present model of development, with its negative points, and move towards a new model that is discussed with society and becomes public.

The proposed transition plan would be consolidated as a roadmap for efforts or issues that deserve consideration in the BNDES' efforts. Faveret asked the participants for the transition plan to be discussed in detail, coming up with ideas, challenges or even a few solutions.

Another recurring theme was cattle-raising. "The issue of cattle is crucial to deforestation. Should we the leave the cows where they are and ask them to keep walking? [Carlos] Drummond [de Andrade] said that halfway along the path there was a rock, but perhaps halfway along the path there is also a cow. What to do with the cow? Where does livestock stand? To whom is it addressed: this is an important question, because I do not see how to discuss the Amazon without discussing cattle-raising," said Faveret.

Ennio Candotti

The information I have is that a cow occupies two hectares of land. As there is a lot of land, one can raise a lot of cows. However, two acres of land to any analyst who has passed the basic courses, can yield much more than those R\$ 500 obtained with the sale of one cow.

Therefore, from an economic standpoint, it is not sustainable, it is not economically competitive. But there are reasons why it may have advantages from an economic standpoint.

Regarding the timber industry, there are studies showing that one can get an additional R\$ 1,000 per hectare of cleared forest. But it is an equation that would need to find some

support. So, I think that is a false problem, if it is properly considered. It is a problem because the equation is not assembled correctly.

Paulo Faveret

It is as if economic agents were unaware of the real profitability.

Ennio Candotti

They did not achieve the required levels of civilization to be economic agents. We are in a pre-wild capitalism.

Caetano Scannavino

Cattle-raising in the Amazon is profitable, yes. And it is profitable because land is illegally occupied, being either too cheap or illegally occupied. One thing is connected to the other. In Paraná, for example, land is much more expensive and the profitability of cattle-raising is lower. Resolving the land issue has an influence on the economic inspiration to keep cattle in the Amazon.

Eugênio Scannavino

I am no expert either, but I think the agrarians are assuming zero deforestation. If indeed this is occurring, the advantage will be theirs because in the Amazon there will be a united kingdom of abandoned grazing pastures, which are not used, for example, in extensive agriculture. I believe they would adhere to zero deforestation if they were to obtain more credit from the government, enough credit to invest in technology. And then they would have to work with intensive cattle-raising to get more credit. What I do not think is right is to forgive the illegalities they have committed.

Marilene Correa

This applies to timber companies, which also take credit for reforestation.

Eugênio Scannavino

We must remember that sustainable wood is not devastating; it does not alter the forest cover. So, if timber can be a sustainable activity, it should be implemented. Today, according to my data, 10 million trees are transported per year, of which seven million are illegal, 2.5 million legal and only 500,000 are sustainable. When we manage to invert this number, it will be a great victory.

Regarding cattle-raising, I do not agree either with forgiving the illegalities for farmers to get more credit. I do agree with zero deforestation.

The problem is that cattle-raising is poorly monitored, very aggressive, illegal. Soybean, for example, is more mechanized, more manageable because it is a commodity. In addition, ranchers do not have an extensive cultural background, they occupied the area with ignorance. It is the traditional occupation that has generated more violence, killings, assassinations. It's part of their culture. I want to see someone reverse it.

Paulo Faveret

There is a policy to deal with cattle-raising, but you cannot ignore that are too many cows...

Marilene Correa

You need a firm strategy that opposes the continuation of extensive cattle-raising. On the other hand, if you cannot ignore the chain that encourages cattle-raising, we must impose limits. But that is another strategy of the Transition Plan. We would have to combine these two things. A firm decision to stop the expansion of extensive cattle-raising and another to put together a transition plan for intensive cattle-raising. Technically, it is not difficult. Perhaps it is economically and politically.

Adriana Ramos

I think the first thing we should do is a separation of extensive cattle-raising from that which characterizes cattle-raising as the savings of extraction workers. There is the question of the cow as a lifestyle, as João [Fortes] recalled, but I see it much more as savings. And this is the strongest relationship that local communities have with the cow.

In this sense, meeting the basic needs of this population through social and economic policies to ensure security with their traditional activities will remove this reliance on the cow with the perspective of savings.

As for zero deforestation, if we demanded law enforcement, we would have a limit that is more than sufficient. All this discussion on complying with the Forest Code is based on the certainty that the relationship between the production sector and its political representation will adhere to the change of law. Therefore, it is hardly necessary to make efforts.

That is, no need to make an effort to adjust because, when the law changes, those who are illegal will be legal. But I think we have reached the limit. I cannot imagine that anyone in his or her right mind today, in Brazil, would change the law to allow new deforestation in the Amazon.

Currently, there is the prospect that cattle-raising has to be intensive, the need to use systems that integrate harvesting and cattle-raising and to assume shared responsibilities in the chain. These criteria could already be in this transition.

João Fortes

The effects of extensive cattle-raising are as harmful as those of the small farmer. If you go to the sources of the rivers, which come from the borders of Venezuela, Colombia, beyond the lands of [Gersem] Baniwa, down the border of Peru and through Bolivia, you will see that these sources have space in the summer season, which are like our winter in the South.

Why does this happen? Because they deforest up to the mouth of river. And then it is worse. For the big farmer, deforesting up to there is still prohibited. In the extraction reserve, no, they

deforest up to the banks, which silts the river. What small farmers do is more uncontrollable. It is part of what Luciano Coutinho said earlier, that 80% is not controllable.

Caetano Scannavino

The country begins to understand that agribusiness is not the vocation of the Amazon. Mechanisms can be created to prevent expansion. Incidentally, I believe that there are mechanisms, yes, but we have to be a little creative, innovative, willing to exclude the agribusiness agenda as the main element in the culture of people living in the Amazon.

I live there, off the regional economy, and I am faced with some situations that I could never have imagined some 20, 30 years ago, such as the Manaus Free Trade Zone. And, from an environmental standpoint, it was positive. Comparing the situation in the Amazon with the situation where I live, in Santarém, where there is a soybean war, the situation in Manaus is much better.

Soybean producers are pressing for deforestation in new areas, they are occupying the flat areas for cattle-raising, and cattle are opening up new areas, because they do not need a flat area like soybeans, since the cows can be raised in the mountains.

Conclusion: a process of significant rural exodus was created, with units being decimated, selling their land for R\$ 1000, R\$ 2000. People thought that if they went to the city, they would provide their children with education because there are schools there. This movement has generated slums, unemployment.

Analyzing the situation of the population during the pre-deforestation stage, when that region still had natural resources, and in the post-deforestation phase, when the resources were lost, what you can see is that HDIs are the same. That is, the change did not bring wealth or distribute income. So we have to rethink this model.

For example, Santarém, in the state of Pará, could be a Silicon Valley, with the introduction of biotechnological companies, technology with low environmental impact, and the people there would begin to understand that as development, as an initiative to generate employment.

This experience would be quite the opposite to seeing soybean as a form of development because it does not generate much employment, it generates tractors, mechanized agriculture...

We must also innovate in terms of paying for environmental services, assuming that agribusiness in the Amazon biome is not sustainable, even if there is confinement, with soybean on the outskirts and feed. You will alleviate a part, but an intermediary solution must be found, thinking about the next 50 years.

You will not transform a 100,000 hectare soybean plantation into an industrial hub for biotechnology. But eight or nine thousand hectares would already be a victory. Building production hubs in an urban area or in the suburbs is an idea.

Sergio Weguelin

What would this region have as far as institutionalization is concerned to start thinking about it in terms of universities, knowledge?

Eugênio Scannavino

The same that Las Vegas had when it was a desert.

Caetano Scannavino

Or Silicon Valley.

Marilene Correa

No need to mention Las Vegas, no, just indicate the regions where Embraer and Impe set up shop. Those areas used to be nothing.

Caetano Scannavino

This region is simply on the edge of the Amazon River, on the verge of having an asphalt highway that will connect Santarem to Porto Alegre. Santarém, for example, has seven

universities generating a labor force that has nowhere to be absorbed. This is repeated in all other regions.

Bertha Becker

Santarém has a strategic position in the middle of the Amazon valley, and with the Cuiabá-Santarém highway, there is a university and a new demand.

With all this cattle-raising and the expansion of soybean, the population needs services and new activities that the city is failing to provide. There is a demand that is already stimulating this possibility of development.

Paulo Faveret

Santarém, as a new Stalingrad, has held off the advance.

Bertha Becker

Let's not exaggerate here, but the capital of the West, west of Pará. There is an important tradition of workers struggling, an important political tradition. Don't kid around, no.

Paulo Faveret

I was talking about holding off the Germans. My idea was more military than political. So, let us move on to the issue of governance.

Paulo Faveret

This is very interesting. Dramatic, but very interesting. Could we change to the governance theme now?

Marilene Correa

May I suggest an agenda for governance? Let's say that it was thought of here as an agenda for alignment or as an agenda for negotiation. From then on, I think it will be possible to speak

about concrete governance, a specific interference in what can be called civil society, not an enclave, or a trusteeship.

Eugênio Scannavino

I would also like to point out the need to separate the issue of governance into territorial governance, or environmental management, and the other would be social governance, which includes access to services, which also doesn't exist. Health, education services and all other services that people are excluded from. So, there are two distinct types of governance.

Paulo Faveret

When talking about the quality of services, we are talking about access to services that are part of governance, which is a political decision. Another thing is the definition of a management model, which includes three levels – municipal, state and federal – which have to be integrated.

Caetano Scannavino

The issue of governance is broad, it can be interpreted by the rule of law, impunity and corruption. We're talking about a region that is still in the process of occupation. It is different from the situation in the state of São Paulo or Rio de Janeiro. And even in these cases, there are governmental challenges. But there is an internal contradiction in government management, the environmental agenda and the infrastructure agenda.

The infrastructure agenda, involving improvement of communication, roads, sanitation, public works, is a repressed demand. The population is clamoring for it. Well, it is a legitimate demand, one that exists and ensures vote. On the other hand, equally legitimate is the environmental agenda, but a license is required; it is subject to specific laws and does not ensure a lot of votes.

This is a very strong contradiction in the case of a region in process of occupation like the Amazon, which has two legitimate demands and generates two agendas – environmental and

infrastructure. One tries to be very agile, and the other requires public hearings discussion, participation of society. And I've never seen a public display of contradiction in this government as I do now.

Paulo Faveret

I think if there are more comments in that direction – aligning the infrastructure agenda with the environmental agenda – this will help a great deal because it formalizes the topic of governance.

Marilene Correa

Currently, governance is only in the government policy, but the practical experiences of governance in the Amazon are beyond government agendas. At the limit, it even goes through its substitution, especially in some areas. So, the pact would have to establish some parameters for consensus on rules for who is who.

Sometimes, governance wants to substitute governability, and governability often does not have the legitimacy of governance. It is a problem even for the socio-economy as well as politics. Actually, governance is a political problem.

On the other hand, to wrap it up, you can consider an agenda of alignment that would make an expansion, a review of this governance issue in a way that is possible, spontaneously, in light of the needs and absence of the State. More regional governance, more committed to the collective purpose, because today governance seeks to sustain itself through its institutions.

Bertha Becker

Governance is a term stolen from the area of administration and incorporated into policy with a new look. It proposes an institutional change. But I have serious reservations.

In fact, in the Amazon it is the State itself that does not firmly take on things it must do from the social point of view. And many times the pressure from the private sector on the large

governance agents is so strong that they really cannot cope. I think counter-pressure is called for. Social control, yes, it should be done, but with the three levels of government plus civil society and the private sector in the context of an agenda of alignment.

However, it must be made clear, in the case of Brazil, particularly the Amazon, that this apparently conciliatory governance will not mean reducing governability. The State cannot stop performing certain duties, such as providing basic services to the population, a series of efforts that the State has to do and does not do.

Paulo Favaret

There is a fascinating political science discussion, which is building the State.

João Fortes

Bertha [Becker] commented on the issue of people, and I would like to share the subject of traditional people, indigenous people. Within this governance, my experience is with over 40% of the land in conservation units. A definition of extraction reserves, a demand made by Chico Mendes and the Brazilian Council for Rubber Tappers at the time, was modeled on indigenous lands and the collective system of indigenous organization. The board of governance of the Caiapós, the Raoni, in Xingu, has rules that the country has forgotten.

The first of them, for example, is that one goes there to listen. In a round of conversation, the basic thing is to listen. Then, secondly, you only speak based on your experience, about what you are willing to contribute, not to monopolize attention. This is a great lesson, all based on indigenous communities in the process of organizing them, which I think is much stronger than ours. Except that we do not value it and end up imposing conditions.

Adriana Ramos

Brazil, in its legislation and its policy instruments, at least in theory, has a set of democratic mechanisms for participation, for negotiation, which were never taken seriously. They have

been used by governments in a fake way, entitling the institutions, enterprises to use them the same way. That is, everyone pretends that a democratic process is performed, in which all parties are called to speak, but nobody has the slightest obligation to respond to these parts. So to what extent are their opinions being taken, or not, into consideration?

This ranges from forums established to manage government plans, such as the case of the BR-163 plan, of the Plan for Preventing and Combating Deforestation, up to the public hearing process for environmental licensing of infrastructure works. In fact, we all gave up using the mechanisms through which formal participation is possible to guarantee this governance that is agreed upon.

So, coming back to the obvious. I think we have a key stage in this transition agenda: to review what these areas are and to what extent we will learn to respect and value the participation of different stakeholders, avoiding opportunism. At a moment when the government calls society to participate, but without the commitment to find and forward the answers on, to incorporate demands, the private sector is very comfortable not respecting these spaces and using its economic pressure to gain support by means of recruiting.

That is what we've seen. And that is a key issue. No need to invent anything new. If we look at what we have in law today, in terms of democratic mechanisms for participation, and start applying them for real, not in a fake way, in the Amazon, we will have already taken a significant leap in the quality of governance.

Paulo Faveret

That is, reliability is the result of creating a channel or making that channel feasible and more of an effective response.

Adriana Ramos

The channel must have clear mechanisms through which final decision-making reflects, to some extent, the participation of everyone.

Eugênio Scannavino

We must remember that the institutional fabric in the Amazon is very fragile; in medical language, almost necrotic. Local, municipal government institutions are very weak. So when we talk about the population's difficulty to access public services, we must not forget the local governments' difficulties in accessing state and federal services.

For example, municipalities have no PSF [Family Health Program from the federal government], despite having the right to a doctor, because they do not know how to develop a project to gain the right to the program, a project that is nothing more than simply filling in a form, which reveals the incapacity of municipal managers. Services have a very small installed capacity that cannot meet huge primary demand.

Therefore, first we have to think about institutionally strengthening local governments, giving them advice. This strengthening also cannot occur without social control, taking advantage of their democratic structures.

It is true that there is the work of NGOs that mobilize populations, but they should not replace the government. They should participate in social control, but should not make social control. They should be able to capacitate citizens so that they participate in their government services which they are beneficiaries of. It is the population itself, that is involved with the school, health clinics, who must control them.

Unfortunately, we have not been able to organize civil society. The government structure in Brazil is beautiful, but fosters a civil society that is not yet structurally organized.

Another thing is the political decision. How many millions of reais went to the financial system and how many went to Ibama to equip their inspectors? I'd like them to answer: because is there no money? Why? Why is it Norway that has to donate money to the Amazon Fund? Why doesn't Brazil do that?

Eugênio Scannavino

There must be inspection, there has got to be a State apparatus, there must be inspectors. Just to give a very simple example, Ibama's superintendence in Santarém is responsible for

58% of Pará state territory; there are 25 municipalities, and Ibama must have no more than 10 inspectors. If it has 3 cars, that is a lot, to inspect the entire region, just south of Pará. Where is the political decision to inspect?

Gersem Baniwa

I wanted to contribute by adding an important aspect that should be taken into consideration. Traditional communities, and particularly the indigenous communities are largely fragile – a virtual absence of institutionalism –, but they do have strong local governance that makes a difference for better or worse. There is no way to disregard it.

I think this is all a process of change. As anthropologists would say, strong cultural socio-cultural changes. What does that mean? It means we have to overcome certain limitations, I would even say certain cultures. Cultures in the sense of certain bad habits that throughout the process of colonization, domination, were taking root.

It is important to note that we are talking about policies of state intervention, public policies. I really like to mention examples to make what I'm saying clear. Paternalism, guardianship exists in many indigenous cultures, which over the centuries was implemented. The idea that the State is our daddy, but our daddy in a paternalistic sort of way, that the State has to provide everything...

As a result, indigenous people were annihilated, in many situations, by conforming. Even those who can afford it and have the ability to... do very little to seek their solutions, always waiting for the day there is an excellent president of Funai, an excellent governor, an excellent mayor to solve their problems.

When you start this process of change – I accompanied the experiences in the Ministry of the Environment which aimed at overcoming the problem so that autonomy of mindset could be recovered – holding debates to find solutions using the resources, the local possibilities, and then what happens? Sometimes – and this is a special feature of indigenous lands – government policies do not come as a unit; but rather get scattered, fragmented, disconnected and often contradictory. While the Ministry of the Environment was trying to overcome the problem

using concrete efforts, another ministry would go there and do exactly the opposite, distributing basic food baskets, and completely destroying one small but important effort to change the conception of how to relate with indigenous communities.

Therefore, there are policies from the same state, the same government, working with methodologies, insights, and perspectives that are totally conflicting. One trying to expand or recover, install the capacity to think and do things autonomously. Another simply distributing, spoiling the population. And this practice among the indigenous people is very strong. By expanding paternalistic distribution policies, the government discourages an ongoing process.

In Rio Negro there is poverty, but there is no misery. There is no need to distribute food. One must encourage the improvement of production, distribution, and so on. The diagnosis is important. Often local populations have leaders, but he who comes from the outside has no governance, he comes in completely uncontrolled, uninformed and quite often with contradictory efforts. In the scope of an average intervention policy, it is important to take these issues into consideration and try to overcome them.

Joséluis Samaniego

With regard to the Amazon Fund, although the limit to fundraising, linked to the effective reduction of deforestation, is a demonstration of the commitment to results, it is not enough incentive to change the development model. The Fund may have the role of demonstrating how to make the transition between development models, but the choice of this transition must be made by the Bank in addition to its duties as manager of the fund.

In practice, the Bank needs to define activities and sectors that it will no longer fund and activities that will facilitate, such as research and development, the generation of located undertakings in electric energy, among others. Because of its importance in the implementation of public policies that are critical to the development model, the Bank may, in its role as manager of the Fund and in its procedures in the remaining operational areas, play a key role as an advocate, in the presence of other public service agents, for changes in incentives for

economic agents, such as tax aspects, and in bureaucratic incentives, making macro incentives more compatible with micro incentives.

Some specific measures in the management of the Fund would contribute to its effectiveness and scope. The assessment and support to families whose projects can reduce the transaction costs of small-scale projects, making them profitable. Guidelines would send a clear message to other countries in which the Fund could operate.

In managing the Fund, it is important to establish a starting date for the assessment of the land to define it as a forest or deforested area.

Marilene Correa

I want to make some considerations before the end. It is to no avail deleting the theme of governance, because it will come up again with or without existing instruments. Especially because they come up in the new forms of institutionalization. Quite often, those removed from a certain territory are settled in territories that are not yet involved in this process of governance.

There should a requirement for public and social policies – rather than urgency – for equalization of values to implement public policies. Health is one example, a dramatic example by the way. But the idea would be a renegotiation.

We can mention the case of replacing the meat production, introducing the cheese industry. The change would do away with extensive cattle-raising, transforming it into an intensive activity. But this also requires a lot of investment. The idea is that this agenda can be built based on different interested parties.

Today we are in this field, in a more relaxed field, but independent from civil society. If we meet here with businesspeople, trades people, heads of development agencies, they will also have a very particular understanding of what governance is, but which is not always at odds with what is being discussed here.

Caetano Scannavino

In relation to the BNDES, managing the Amazon Fund may be, besides efforts and actually managing it, an opportunity to revitalize the Bank's policy as a whole, using this learning experience, this Amazon experience. The BNDES also has the opportunity to change this Amazon mindset, if it moves towards this challenge.

I believe that incorporating support for environmental development to the Bank's image of a supporter of economic and social development can be quite a strategic move. In practice, it can begin creating mechanisms for sustainability, incorporating these mechanisms to other practices of the Bank, and not just the Amazon Fund.

The government-affiliated banks, in general, follow a minimalist practice in the environmental area, the basic standard, which is the current legislation. I believe that the BNDES will add positive value to the population so that people see it as a reference also in environmental practices. And that means putting a complete stop to financing agribusiness in deforestation areas. It means creating sustainability indicators, beyond legislation, in all its practices, such as in the support for urban development in the South, Southeast or North regions.

I cannot separate the Amazon from the world. If Brazilians continue buying 70% of the illegal lumber from the Amazon, we will continue producing illegal timber. It is the law, that is, the primary law, even more in an area that is difficult to inspect. The Bank may be a light at the end of the tunnel and begin to create a Brazilian mindset to take responsibility for the Amazon. If it is going to succeed, I don't know, but just like every fan of the Corinthians soccer team, we can never give up. The Amazon Fund also has to be financed by Brazilians, not only by Norway. São Paulo has to finance the Amazon; it is a way of offsetting what the Amazon allows you to do and happen in terms of climate, biodiversity or future potential, which is not being tapped at this time.

Moreover, I see the need to create a patent law related to biodiversity, allowing the entry of foreign currency that would impact the Brazilian GDP through better management of the Amazon. As an example, the Amazon's GDP has grown around 8% in recent years while

the Amazon GDP per capita increased only 1%. We did not produce wealth with a distribution of income. We produced wealth especially in illegally occupied areas, which was that 8%.

And just to give you another example: social spending per capita in the Amazon is 60% of the average for the rest of the country. We are in a region where twice that should be spent, due to the geographical difficulties, due to communication difficulties. However, little more than half is spent.

The BNDES is an actor that can leverage this kind of reflection and studies. For example, a feasibility study on what a technology hub would be like in the middle of the Amazon. Someone has to get this initiative going. And it is not the NGOs that have to be at the forefront of this.

Bertha Becker

No! It is in fact the State.

Paulo Faveret

Since you are a fan of Corinthians, hopefully the performance is dignified.

Adriana Ramos

We had better not to talk about these things.

Bertha Becker

I have already said that it is very difficult to have only one shot, in fact we need a machine gun. But I'll repeat just briefly the issue of the new look, which I mentioned right at the beginning and which is crucial. We must break away from the planning and efforts for the region that always come with a foreign outlook on it.

Another essential question: a new development standard. I am stressing this because it should be an objective that carries all the others. Logistics, land title regularization, all ready

to serve the need to change the current situation. I will not go into details, but I want to draw attention to the important role of cities in the Amazon, historically fundamental in the region.

The cities also have to be equipped because, through them, the State will be able to make its efforts more effective. The government's role will be implemented by decentralization for some types of cities. The State is getting stronger, re-qualifying on its own. Europeans have shown this clearly in scientific studies. Quite the opposite of shrinking the State, what is happening is a new form of State performance.

It is the cities that will be internally and externally articulating the region. I am emphasizing the city because it is the least mentioned issue, and it is the focus of my current research. I have proposed a belt of flexible armor. A belt of flexible armor in cities means the contact of the open forest with the dense forest.

In this case, they could be equipped with forest laboratories, to stimulate modern extraction production, with advanced technology, which is that of dense forests in environmental services. In the area of open forests, development of the timber industry is important. Thus, cities could be built with wooden houses.

Before closing, I want to provoke you all a little: we should keep the legal Amazon or remove the state of Mato Grosso, which was just a geopolitical construction at a given time. Ah, how nice that the governor [the former governor of Acre, Jorge Viana, was just arriving] is here. He will be able to answer this question.

Ennio Candotti

It would be better to say: why don't we exclude the rest of the country and establish a new State?

Bertha Becker

Mato Grosso, the Central-West, is extremely different from the Amazonian region. Even their relations with neighboring countries are differentiated. Why keep them? There must be reasons for this, at least for now. The government does not want to change the constitution of the Legal Amazon, to divide it.

Adriana Ramos

The Fund should work on the perspective of sustainable territories, but I'm a bit afraid to treat it as a fund of public policies, like the others that were mentioned. I think the Amazon Fund gets funds because of the recognition of undue deforestation. One cannot replace public policies. So, it must be a little more flexible to serve different social stakeholders in the region. It must serve rather as a trigger for further initiatives from the government itself and from the BNDES.

In that sense, I will summarize a few of the things already said here. For example, the issue of planning infrastructure should not be part of a transition agenda. One must think of infrastructure under a new perspective of development and integration.

I also see the need to have a sustainability checklist – and that's a teaser for the BNDES – for the Amazon as a whole, not just the Brazilian Amazon. The sustainability criteria of production activities can also be adopted immediately.

Sergio Weguelin

I would like to thank Governor Jorge Viana for the effort to be here. Throughout the day, we discussed the management of the BNDES in general and how the Amazon Fund must operate. One of the most discussed aspects was the need for a new paradigm, a new look for the territory and changes in handling social issues. Given this scenario, governor, your topic is open.

Jorge Viana

Before anything, I apologize, trying to justify the unjustifiable. But since the subject here is of the utmost importance, first I must congratulate the BNDES for the initiative of convening this group of people. People who have numbers, who study, have experience in the Amazon, a commitment to us who live there. You could not have gathered a better group.

Interestingly, I was the first to arrive in Rio de Janeiro, as a matter of logistics. In Acre, there's nothing we can do, we need to arrive one day early because of the flight schedule. But because of the provisional measure that directly involves land title regularization in the Amazon

(MP 458), I met the president [Lula] and attended the political coordination meeting of the government. Somehow, to me that was already a gesture of respect to such an important issue.

I came from an NGO. Social movements are way ahead of the movements of the State, whether it is a municipality, or entities of the Federation. Even social movements still lack quite a lot because we are forming concepts and options. Sometimes even the reading is correct, but there is disagreement over the best alternatives. So the government is moving an issue ahead that I disagree with. I disagree with the principle of this topic: land title regularization.

I did not put areas into legal order in the State, except for those over which I had absolute control concerning the result of such regularization. I think the root of our problems lies in the occupation and land use. In the Amazon's case, a measure that creates land title regularization for the entire region, with a single standard, is misguided. The risk of it going wrong is high, because there are about 70 million hectares.

Rural forest production activity is rather unstable in the Amazon. It has no economic and environmental sustainability, and there are social problems. With land title regularization, we can create a very significant change towards an economy for the sale and purchase of legal land. Except that this change may be accompanied by increasing deforestation, directly against the commitments made by Brazil to reduce deforestation by 2017 and zero it by 2040. Why is that? Why legally? If I regularized my area, I'm legal in the eyes of the law, and it allows me to deforest 20%. It is all about math: 20% of 70 million hectares result in a very reasonable sum. It is equivalent to the state of Acre.

It is true that some of these areas are already deforested. These are easement/bailment regularizations. But there is a significant share of new deforestation which may result from this initiative. To me, this is the central concern.

But going back to the issue of regularization, deep down, it needs to be carried out because the source of violence, poor social adjustment which we live in, is very much linked to the lack of it. It is a land without defined rules. It's a mistake to regulate, but if we are going to do that, we should have small modules. We have hundreds of thousands of settlers in areas smaller than a rural module [Incrá's measurement unit] and which are in a precarious situation.

Regularization of up to four modules totals 400 hectares. Fifteen modules are equivalent to the city of Brasilia. Finally, it's not just any one area. Even in the Amazon, it is huge. This is a complicated issue, because the focus, in my opinion, should be on economic activities linked to the use of what the land offers. That is, what is above or below it.

I have no problem discussing forest management with certification or the use of resources for the implementation of power generation – obviously with exceptions, provided it is linked to certification, in the case of products –, which is not a solution for everything, but it is a path to substitute state surveillance with surveillance that could come from the market itself, from the rules society imposes on Amazonian products.

When we had, at the beginning of last century, an economy that appeared as competitive, we faced social problems, but no environmental problem. That is, from the three variables – social, environmental and economic – there were no social problems in the other two. It was an economy linked umbilically to the forest, to the use of resources.

Somehow, this new economy, this new look, this neoextractivism that we are seeking must be tied to sustainability, certification of products, in order to meet even this claim from buying countries, the consumers, even Brazilians, which is very healthy.

Today, I realize the impossibility of implementing a standard policy for the region, and a fund that creates such great expectations cannot fall into the mistake of establishing general rules. There must be some kind of zoning which would guide the policy, because the Amazon is living different stages in different areas.

The risk of the Fund to become the only alternative to public policies in some places is real. There is a major lack, whether from the financial institutions, from state budgets and particularly municipal and even federal budgets, of investments in activities that minimally meet the proposals you have made. Proposals for economic activities that are sustainable, competitive, not with pilot policies, but taken on in scale.

In order not to go round in circles, I will raise just one other point. When you think of the Amazon as a whole, if it is true that we have a set of conservation and preservation units created – regardless of being implemented or not –, we may have to discuss the following: how

much energy should we put into already degraded areas [where social and economic activities are carried out in the environment] so that they gain some competitive edge, so that there is improvement in the people's standard of living, so that one can actually have an economy that is sustainable and we can make better use of these areas?

I can speak about the state of Acre. Half of the deforested area in Acre today is quite poorly used and has no sustainability at all. That is, double waste. It went through the damage of deforestation and faces more damage yet, not to perform adequate activities minimally from the economic and social point of view.

Therefore, efforts focused on better capitalizing from these areas and reducing the pressure on new areas can be something quite interesting for us to work on. This, to me, is one issue. The other is that we need to define policies for the larger part.

All the energy in Acre today – 100% of the energy consumed – is linked to the burning of diesel. In Acre, one megawatt-hour comes to R\$ 1,000. The current price at an auction is R\$ 130. However, there is the unsustainability of this production. If the government defined that sustainable use – and sustainable from an economic point of view – of the resources there should be the way that would lead to public policies, then for hydroelectric power plans that could also be the way.

In the case of large hydroelectric power plants, for example, how can we, in each investment, involve local populations on a permanent basis, but at no detriment to what must be done? This is the reason that large projects should have to include the local population in economic activities.

The existing policies are not yet specific to the Amazon. The credit line remains the main executioner of deforestation in the Amazon, because it is legal, it is funded. In the case of Acre, more than half of the annual deforestation comes from small farms. We managed to stop it on the large estates. But they are all settled by public policies from the economic and environmental standpoint and with a level of uncertainty from a social point of view.

The arrival of the Fund, conducted in this manner by the BNDES, can generate a radical change in the way credit is granted. And this practice can be passed to other credit institutions.

To me, the shift that we should make now would be a strong focus on a sustainable economy for cattle-raising, for forestry exploration, for the small and medium-sized producers. All this aimed at better use of already degraded areas and the start of intensive intelligent use of the biodiversity we have at our disposal.

Ennio Candotti

Governor, you have correctly said that land title regularization is a regularization of a treeless ground, not a land with forest. We were not able yet to set a market value for the standing forest, because today one is regularizing the ground, not exactly what we want to preserve, which is the forest and all its services. So, this is an impasse to be discussed.

This element seems to be a good guideline to guide investments of the Fund in order to answer the following question: after all, what is the difference between ground, raw land, and the land with forest coverage? If we cannot answer that, we will lose the battle. Because then regularization will be carried out on the ground, and it is obvious that the answer to that is not simple either, which is to tell how to value it.

The second is an issue that arose here and that perhaps you have elements to address. If the policy of the Free Trade Zone and Suframa is extended to the Amazon – or at least to Manaus, and Acre is involved here –, an alternative that could guide this new policy would be if the type of induced development were compatible with a particular model.

One wonders: would motorcycles be included? Would TV sets be included? Would mobile phones be included? Or should we design another type of industry compatible with this development that we are outlining? Would there be a way to include this negotiation? What is your feeling about this? Because obviously is not an easy negotiation.

Jorge Viana

Regarding the issue put forth by professor Ennio [Candotti] on the industrial poles in the Free Trade Zone, I wonder if the Amazonas state – which has many social problems, many problems with economic sustainability for their production activities – posted any gain from an environmental standpoint.

It is more than necessary to review how something that worked in some aspects and did not work in others could have a longer life, but incorporating variables and components that were not incorporated in the beginning. Also because the foresight that Brazil had was this: a land without men for men without land. It was a striking sentence in the 1970s and which somehow is still quite present. There are still people defending larger occupation of the Amazon, and this is a delicate point.

As for the other issue, the assessment that INCRA carries out, namely that the legal apparatus carries out, is that the already deforested land is worth a lot. It is improved land. For Incra to compensate a person, it will pay a very significant amount for what that person calls improvement – which is the deforested area – and a much lower amount for an area that still has a forest.

Ennio Candotti

But this is a mistake ...

Jorge Viana

But it is a fact. And the provisional measure dictates that we will have to deal with it. In Acre there is already a new currency that is being created and I find it interesting. I have always dreamed of this as a forest engineer. Today, no one speaks, at least about areas that already have some market, infrastructure proximity. All areas are already linked to forest management. It has already been given value, depending on the typology of forest, there is a possibility of sustainable exploration.

The value that enters into the discussion is no longer the land, which I already find interesting regardless of the problems we still have in this area, it is the management. I know areas where management is worth a lot. That is, the discussion now is about the possibility of exploring a resource that is not the land. And those numbers are already higher than what Incra pays for it.

A big change in the paradigm is underway, it is being imposed by the new reality. For example, if the BNDES works with the Fund with a criterion for land ownership, it may fall into a very big mistake in applying resources, because it is a difficult equation.

Chico Mendes taught us years ago what we did not fully understand. He presented the proposal for extraction reserves, which excluded the definition of the properties of those who live off them and worked it out with limits and respect, delimiting the perimeter. We have evolved little in extraction reserves from the economic point of view. What is wrong is the lack of focused public policies to be successful.

This point that you're raising, professor [Ennio Candotti] will impose a radical change. We accounted for the forest, it is worth something to us. But with today's rules not including the forest, the currency is different. The improvement is the deforested land.

Ennio Candotti

But is Incra open to this discussion or must it be opened?

Jorge Viana

It is not very open, because the view that they have, and I see this very present yet in the government, is that land is the focus. This is an issue that we will have to ripen. Does legalization have to take place? Yes, it does. But with some level of caution so that it does not revive the market of land speculation.

And if it does come, what can we do? – land prices change immediately – land not the forest. It will be a boom of real-estate speculation in the Amazon of a disastrous magnitude. The word that I can use now is this: disaster.

Paulo Faveret

I thank everyone so much for their participation, patience, their willingness concerning the commission of works, especially for the ideas contributed here.

Sergio Weguelin

I would like to reiterate my thanks and, just like on other occasions, to let you know that you leave and the problems stay here. We have to manage the Fund with all these ideas, all these challenges. But, that is what we had in mind. We will be tackling several issues, several new ways to operate. Thank you all very much.

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