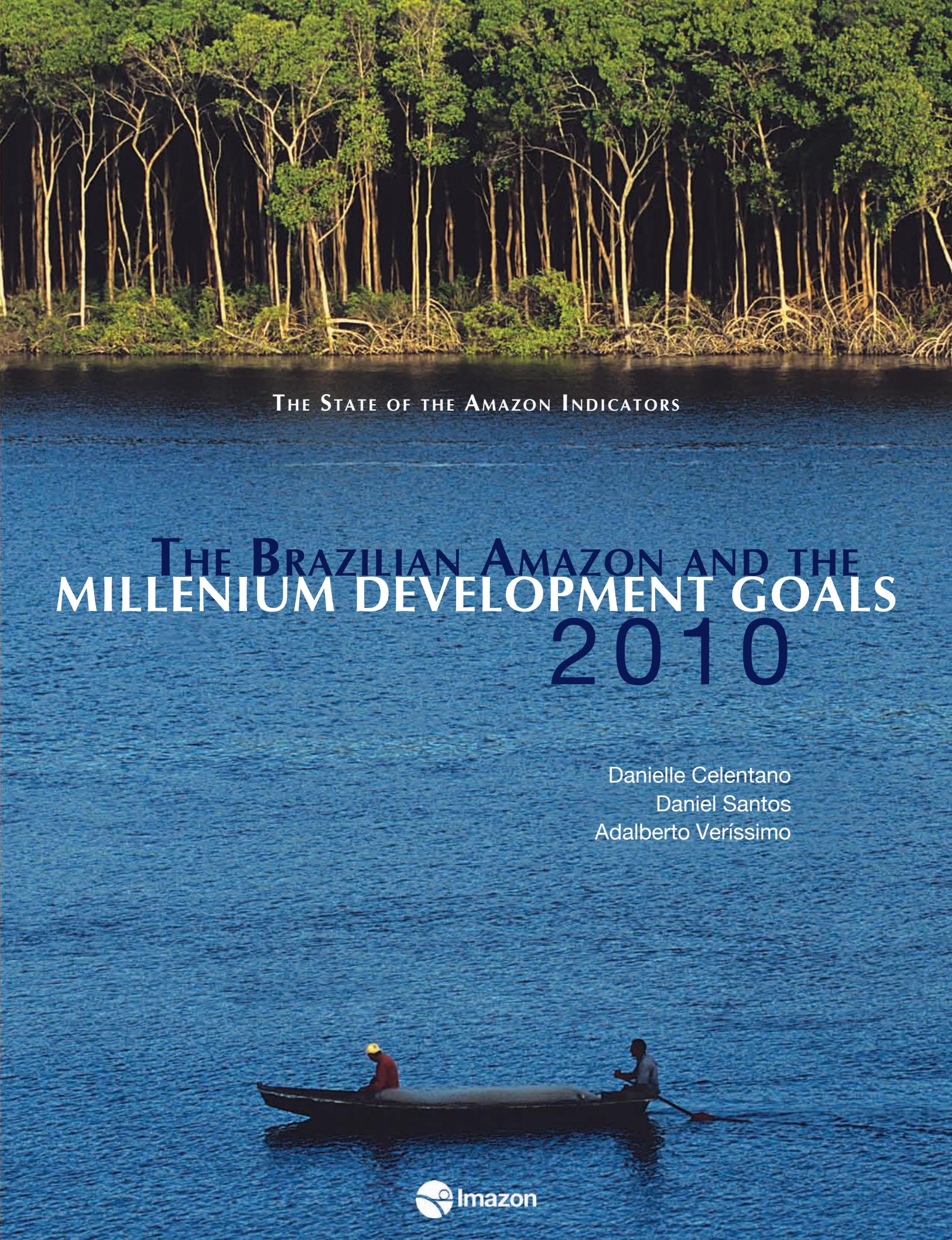




THE STATE OF THE AMAZON INDICATORS

THE BRAZILIAN AMAZON AND THE MILLENNIUM DEVELOPMENT GOALS 2010

Danielle Celentano
Daniel Santos
Adalberto Veríssimo



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Danielle Celentano, Daniel Santos & Adalberto Veríssimo

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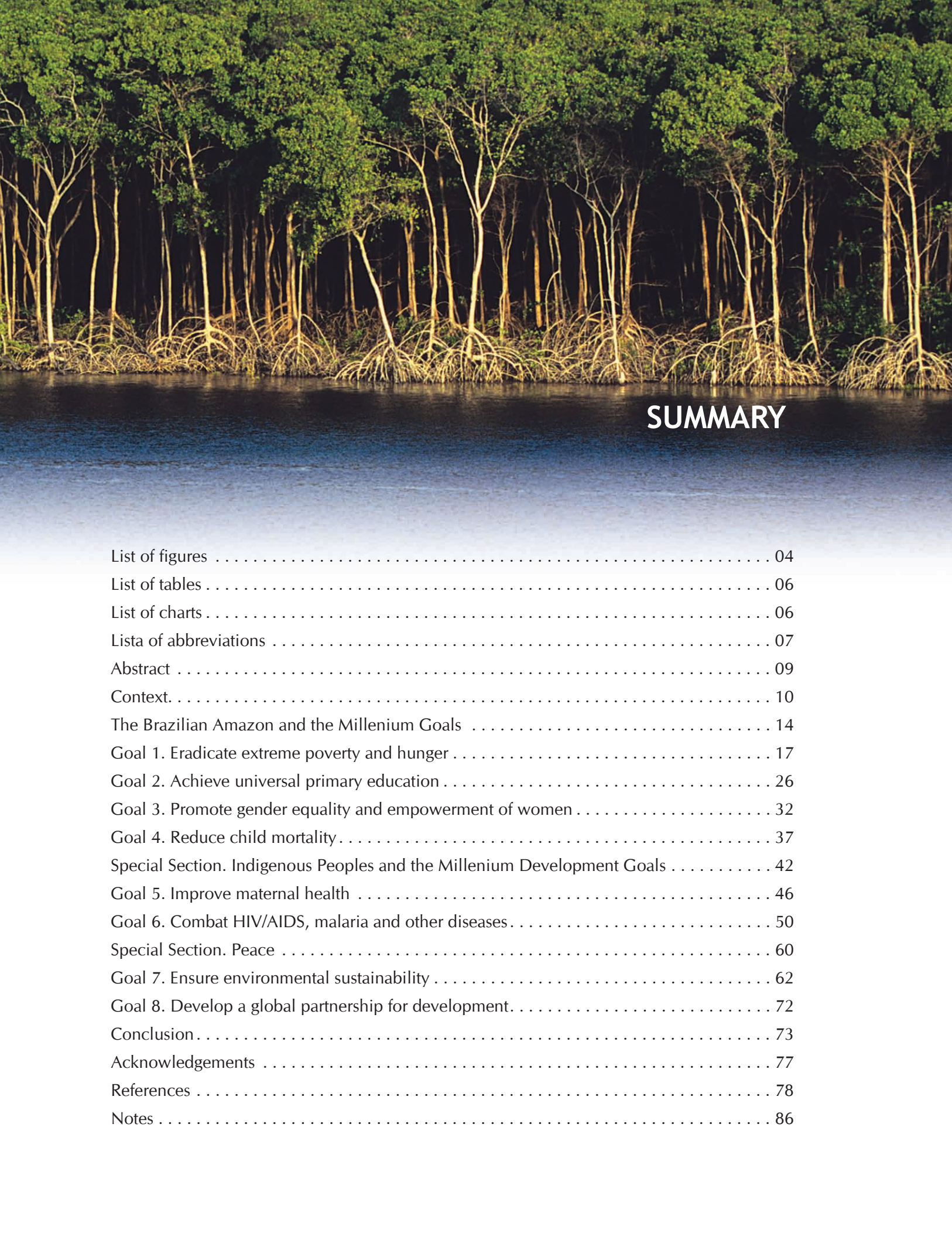
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LIST OF ABBREVIATIONS

ACTO	Amazon Cooperation Treaty Organization
AIDS	Acquired Immune Deficiency Syndrome
APA	Environmental Protection Area
ARA	Amazon Regional Articulation
BID	Interamerican Development Bank
CDB	Convention on Biological Diversity
Cimi	Indigenous Missionary Council
CNPI	National Commission for Indigenous Policy
CPT	Pastoral Land Commission
CU	Conservation Unit
Dfid	Department for International Development
STD	Sexually Transmissible Disease
EAP	Economically Active Population
Esec	Ecological Station
FAO	Food and Agriculture Organization of the United Nations
FIMD	Firjan Index of Municipal Development
Firjan	Industries Federation of Rio de Janeiro
Flona	National Forest
Funai	National Indian Foundation
Funasa	National Health Foundation
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GTZ	German Technical Cooperation
HIV	Human Immunodeficiency Virus
HDI	Human Development Index
HVI	Human Values Index
IA	Amazon Initiative
IBGE	Brazilian Institute of Geography and Statistics
Ibama	Brazilian Institute for the Environment and Natural Resources
Ideb	Index of Basic Education Development
ILO	International Labor Organization
IIRSA	Integration of Regional Infrastructure in South America
Imazon	Amazon Institute of People and the Environment
Inep	Anísio Teixeira National Institute of Educational and Research Studies
Inpe	National Institute of Space Research
Ipam	Amazon Institute of Environmental Research
Ipea	Institute of Applied Economic Research
ISA	Socioenvironmental Institute
IT	Indigenous Territories



MCT	Ministry of Science and Technology
MDG	Millenium Development Goals
MDS	Ministry of Social Development and Combating Hunger Hunger
MEC	Ministry of Education
MMA	Ministry of the Environment
MPEG	Emilio Goeldi Paraense Museum
MS	Ministry of Health
MTE	Ministry of Work and Employment
Naea	Nucleus of Advanced Amazon Studies
NGO	Governmental Organization
Parna	National Park
Pnad	National Research for Household / Residential Sampling
PNGATI	National Policy of Environmental Management in Indigenous Lands
Pnud	United Nations Development Program
POF	Family Budget Research
Raisg	Amazon Network for Georeferenced Socioenvironmental Information
RDS	Sustainable Development Reserve
Rebio	Biological Reserve
REED	Reducing Emissions from Deforestation and Degradation
Resex	Extractivist Reserve
Ripsa	Interagency Network of Health Information
Seab	National System for Evaluation of Basic Education
Sisarp	System of Protected Areas
Snuc	National System of Conservation Units
TCA	Amazon Cooperation Treaty
TSE	Supreme Electoral Court
UN	United Nations Organization
Unaids	Joint United Nations Program on HIV/AIDS
Unesco	United Nations Organization for Education, Science and Culture
Usaid	United States Agency for International Development
WB	World Bank
WHO	World Health Organization
WWF	World Wildlife Fund
WSSCC	Water Supply & Sanitation Collaborative Council

ABSTRACT

The Millenium Development Goals, established by the UN in the year 2000, propose specific targets and indicators for measuring and guiding improvement in socioeconomic (poverty, education, health, gender equality, and maternal and infant mortality) and environmental conditions in poor and developing regions of the world. In this *State of the Amazon*, we evaluate the evolution of these objectives in the context of Brazilian Amazon up to 2009 in relation to the targets proposed for 2015 by using 25 indicators.

In the Brazilian Amazon there has been progress in relation to the majority of the indicators when comparing its situation in the year 2009 to 1990. But overall this improvement is still unsatisfactory and the region remains below the national average. The Amazon situation is critical in the case of poverty, the incidence of malaria, AIDS, maternal mortality and access of the population to water and sewer service. The progress was modest as to seeking gender equality. The women have little participation in politics and receive less than men (for the same job and qualifications) in the labor market. Furthermore, the region has maintained

high violence indicators. Moreover, the indigenous peoples and the other traditional populations face great challenges in ensuring their well-being.

There is progress in the education field (nevertheless, improving the quality remains a challenge); there was no inequality between the sexes in access to school while infant mortality fell (despite underreporting in the official statistics). The region advanced considerably in creation of protected areas (indigenous lands and conservation units) from slightly more than 8% in 1990 to about 44% of the territory in 2010. In addition, deforestation fell markedly in recent years and in 2010 reported its lowest rate in recent history.

Among the 15 targets evaluated in this study, only one was fulfilled in the region (eliminating inequality between the sexes in childhood education). If this slow pace is maintained, only two other goals will have been reached by 2015: guaranteeing access to fundamental education and reversing the loss of environmental resources, measured herein by reduction of deforestation and gradual expansion of protected areas.



CONTEXT

To measure and guide improvements in the global level of environmental degradation and socioeconomic issues such as poverty, hunger and diseases, the UN established the Millenium Development Goals (MDG) in the year 2000. The Millenium Declaration has been signed by 191 countries including Brazil. It addresses eight objectives with specific targets to be reached by 2015 (Chart 1). Although there are official reports evaluating the MDG in Brazil (Ipea, 2005; Brazil, 2010a), none of them specifically addresses the Amazon region.

The Brazilian Amazon, which is strategic for Brazil and for the world, houses the largest tropical forest and greatest biodiversity on the planet, thus providing ecosystem services vital to the well-being of humanity and protecting one of the greatest ethnic and cultural diversities worldwide. At the same time, the Amazon is very important for the prospects of economic development of the country through its role in supplying hydroelectric energy, agriculture, mineral resources and forest products. In the Brazilian Amazon the MDGs represent an innovative approach for evaluating development and guiding actions to improve social, economic and environmental conditions.

In 2007, Imazon published the study “The Brazilian Amazon and the Millenium Development Goals”, which analyzed the advance of the MDG in the region between 1990

and 2005 (Celentano and Verissimo, 2007a). In general, the results showed that the advances were unsatisfactory and that the Amazon region was below the national average for the majority of indicators evaluated. In 2010, only five years before the deadline for fulfilling the Millenium Goals, the UN convened a plenary summit of world leaders to review the global situation, identify the challenges and opportunities and promote strategies of more concrete action. In this same year, Brazil elected new congresspersons, state governors and a new president for the next four years. This is a crucial moment to resume the debate on the MDG in the Brazilian Amazon and insert this theme into the political agenda of the region.

In this *State of the Amazon*, we present an update of the study on the Millenium Goals in the Brazilian Amazon¹. For this, we have analyzed 25 indicators (Chart 2). In general, the evaluation refers to the period between 1990 and 2009. The evaluated indicators are those proposed by the UN and available for the Brazilian Amazon as well as other ones relevant to the regional reality². We include two additional sections, *Indigenous Peoples* and *Peace*. The indicators were compared between the Brazilian Amazon states and Brazil as a whole.³ At the end of each section there is an evaluation of the current situation of the region in relation to goals proposed by the UN.⁴

Chart 1. Millenium Development Goals and their related targets (UN, 2000).

Goal 1: Eradicate extreme poverty and hunger
Target 1: Reduce by half, between 1990 and 2015, the proportion of the population in extreme poverty.
Target 2: Guarantee full productive employment and good work conditions for all, including women and youths.
Target 3: Reduce by half, between 1990 and 2015, the proportion of the population suffering from hunger.
Goal 2: Achieve universal primary education
Target 4: Guarantee by 2015 that all children in all countries, of both sexes, finish one complete cycle of study.
Goal 3: Promote gender equality and empower women
Target 5: Eliminate disparities between the sexes in primary and secondary education, if possible by 2005, and at all education levels, no later than 2015.
Goal 4: Reduce child mortality
Target 6: Reduce by two thirds, between 1990 and 2015, mortality in children up to 5 years of age.
Goal 5: Improve maternal health
Target 7: Reduce by 75%, between 1990 and 2015, the maternal mortality rate.
Target 8: Guarantee universal access to reproductive health.
Goal 6: Combat HIV/AIDS, malaria and other diseases
Target 9: Halt and begin to reduce by 2015 the spread of HIV/AIDS.
Target 10: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it.
Target 11: Halt and begin to reverse by 2015 the incidence of malaria and other major diseases.
Goal 7: Ensure environmental sustainability
Target 12: Integrate the principles of sustainable development into national policies and programmes and reverse the loss of environmental resources.
Target 13: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.
Target 14: Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.
Target 15: Achieve significant improvement in the lives of at least 100 million slum dwellers by 2020.
Goal 8: Develop a global partnership for development
Target 16: Address the special needs of landlocked developing countries and small insular developing states.
Target 17: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system.
Target 18: Deal comprehensively with the debt problems of developing countries.
Target 19: Provide access to affordable essential drugs in developing countries.
Target 20: Give access to the benefits of new technologies including those in the areas of information and communications.



Chart 2. Indicators utilized to evaluate the *Millenium Goals* in the Brazilian Amazon.

Goal 1: Eradicate extreme poverty and hunger	1. Extreme poverty (population with <i>per capita</i> monthly household income below 25% of the minimum salary) and poverty (income between 25% and 50% of the minimum salary). Source: Ipea and IBGE.⁵ 2. Child labor. Percentage of the population aged 15 years or less that are found working or seeking work in the reference week. Source: IBGE and MS. 3. Working in a condition analogous to slavery. Degrading work with privation of freedom through debt servitude, retention of documents, geographic isolation or use of armed guards (ILO, 2005). Source: CPT 4. Informality. Percentage of persons in informal jobs in relation to the total of formally occupied persons. Source: Ipea and IBGE. 5. Alimentary insufficiency. Perception about the quantity of food available. Source: IBGE. 6. Child malnutrition. Percentage of malnourished children aged up to 2 years. Source: MS.
Goal 2: Achieve universal primary education	7. Illiteracy (population older than 15 years without ability to read or write a simple ticket) and Functional illiteracy (percentage of persons with less than 3 years of study, generally knowing how to read something simple, but having limited skills and comprehension difficulties). Source: Ipea and IBGE. 8. Average number of years of study for a population aged at least 25 years. Source: IBGE. 9. Net school attendance. Proportion of persons of a determined age group that attend school at an adequate grade level, according to grade-age standards of the Brazilian educational system, in relation to the total number of persons of the same age group. Source: IBGE. 10. Raw school attendance. Proportion of the persons of a determined age group that attend school in relation to the total in the same age group. Source: IBGE.
Goal 3: Promote gender equality and empower womem	11. Female education. School attendance (%), proportion of illiterate females in the population (≥ 15 years) and years of study. Source: IBGE. 12. Women in politics. Proportion of women performing jobs of political representation in the executive or legislative branch. Source: TSE. 13. Income. Percentage of mean income of employed women (≥ 16 years) in relation to men, by groups of years of study. Source: IBGE.
Goal 4: Reduce child mortality	14. Mortality up to 1 year of age per 1,000 live births. Sources: Pnud, MS and IBGE. 15. Mortality up to 5 years of age per 1,000 live births. Source: Pnud and MS.
Goal 5: Improve maternal health	16. Maternal deaths per 100,000 childbirths. Deaths during gestation or within 42 days after its termination, independent of duration or localization of pregnancy, due to any cause related to or aggravated by pregnancy or by measures in relation to it (WHO, 1997). Source: MS. 17. Coverage of prenatal consultations. Percentage distribution of women with children from live births according to the number of prenatal consultations. Source: MS.
Goal 6: Combat HIV/AIDS, malaria and other diseases	18. HIV/AIDS. Incidence rate of AIDS per 100 thousand inhabitants. Source: MS. 19. Malaria. Incidence rate of malaria per 100 thousand inhabitants. Source: MS. 20. Tuberculosis. Incidence rate of tuberculosis per 100 thousand inhabitants. Source: MS. 21. Leishmaniasis. Incidence rate of leishmaniasis per 100 thousand inhabitants. Source: MS. 22. Dengue. Incidence rate of dengue per 100 thousand inhabitants. Source: MS.
Goal 7: Ensure environmental sustainability	23. Deforestation. Annual area of deforestation. Source: Inpe. 24. Protected areas. Percentage of protected indigenous land areas and conservation units. Sources: Ibama, Imazon and ISA. 25. Basic sanitation: Water, Sewer and Trash Services. Population (%) living in domiciles linked to a general water network and with adequate sewer installations (linked to a general network or septic tank) and trash collection. Source: IBGE.

PRECAUTIONARY NOTE

We have adopted a wide scale of analysis that considers the Brazilian Amazon as a whole and unfolds the analyses specifically in the sphere of states and in some cases also municipalities. However, we recognize that a more accurate analysis demands treating the region on sub-regional and municipal scales for all the indicators. This would reveal a more accurate map of inequalities within the states themselves and the sub-regions. However, there is a severe limitation in the frequency of collecting and updating of municipal data in the Amazon.

The state of Mato Grosso is wholly inserted into the Brazilian Amazon concept adopted in our analysis, even though half of its territory presents environmental and socioeconomic characteristics more similar to the states of the central-west region, which have more savanna cover. The same occurs with the state of Tocantins whose savanna vegetation is distinct from that of the other Amazon states. Therefore, an analysis that considers only the domain of the Amazon biome, excluding the part of Mato Grosso occupied by savanna veg-

etation and a major portion of Tocantins, might reveal a different situation. Unfortunately, two limitations to this approach are that the borders of the biome do not coincide with the political boundaries of the states and that the municipal data are outdated for most of the indicators. Although Maranhão is not wholly inserted into the Brazilian Amazon, the state-level analyses consider the state as a whole due to its inability to disaggregate.

Finally, it is worth noting that the statistics in the region present historical problems due to the difficulty of accessing and collecting data. Thus, for some indicators, it is possible to have discrepancies between the years on account of alterations in the collection effort, for example, in the AIDS incidence rate. Another problem is the change in the method of calculating some indicators from the primary source, as in the case of indicators of poverty, food insecurity and sanitation. In these cases, we advise reading the explanatory notes for their greater detail. It was not the objective of our study to analyze the attendant causes or to elaborate specific recommendations.

THE BRAZILIAN AMAZON AND THE MILLENIUM GOALS

The Brazilian Amazon comprises the states of the northern region of Brazil (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima and Tocantins), Mato Grosso, most of Maranhão and a small part of Goiás (Figure 1). The Brazilian Amazon (referred to in the rest of this text only as the Amazon) occupies 59% of the entire Brazilian territory and is the home of 24 million inhabitants or about 12% of the national population (Table 1). About 170 indigenous peoples live in the Amazon, totaling a population of ap-

proximately 250,000 persons. Although the demographic density in the region (4.7 inhabitants per square kilometer) is almost five times less than the national average (22.5), the growth of the population between 1991 and 2010 was markedly higher than the Brazilian mean for the same period (Figure 2). Migration plays an important role in the population increase in the region. In 2008, 22% of the resident population had migrated from other regions of the country. A large majority (80%) of the Amazon population resides in cities⁶.

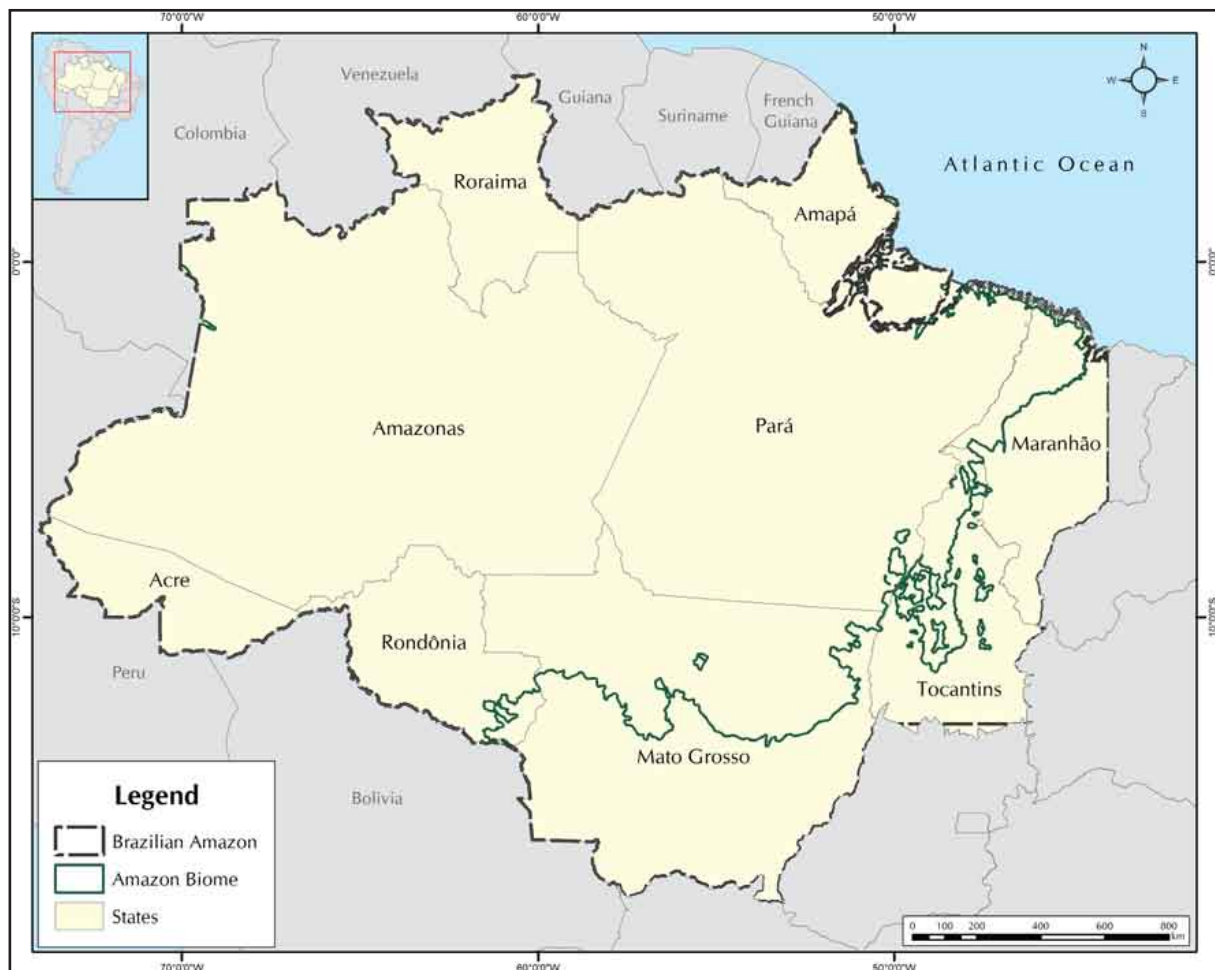


Figure 1. The Brazilian Amazon.

**Table 1.** Profile of Brazilian Amazon States

State	Abbreviation	Area (thousands of km ²) ¹	Number of municipalities ²	Population in 2010 ³ (thousands)	Urbanization in 2009 ⁴ (%)	Demographic density (inhab/km ²)
Acre	AC	152.6	22	707	79	4.6
Amazonas	AM	1570.7	62	3,351	83	2.2
Amapá	AP	142.8	16	649	98	4.5
Maranhão ⁵	MA	249.6	181	5,355	70	18.7
Mato Grosso	MT	903.4	141	2,955	82	3.4
Pará	PA	1247.7	143	7,444	75	6.0
Rondônia	RO	237.6	52	1,537	73	6.4
Roraima	RR	224.3	15	425	85	1.9
Tocantins	TO	277.6	139	1,374	74	4.7
Brazilian Amazon		5,006.3	771	23,797	80	4.7
Brazil		8,514.9	5.592	190,733	84	22.5

¹ Source: IBGE (2002); ² Source: IBGE (2008a); ³ Source: IBGE (2010a); ⁴ Source: IBGE (2009a); ⁵ Includes only the municipalities situated in the Brazilian Amazon.

The Amazon accounted for only 8% of the Brazilian Gross Domestic Product (GDP) in 2008, that is, about 134 billion dollars (IBGE 2010b)⁷. Among the states, Pará made the greatest contribution, being responsible for 24% of the region's GDP, followed by Mato Grosso with 22%, Amazonas at 19% and Maranhão with 16%. Between 2000 and 2007, the GDP (deflated) in the Amazon grew 62% versus a rise of 38% in Brazil's GDP as a whole (Figure 3). In 2007, the service sector contributed the most to the Amazon GDP with 60% participation, while industry and agriculture represent 25% and 15%, respectively. Average *per capita* GDP in the Amazon (6.1 thousand dollars) was 30% below the Brazilian mean in 2008. Maranhão with 3.3 thousand dollars and Pará with

4.3 thousand dollars presented the lowest *per capita* GDP in the region, while Mato Grosso (9.8 thousand dollars) was above the national average (8.7 thousand dollars).⁸

Although GDP is considered the main indicator for evaluating the economic growth of a country, it does not reflect the quality of life of populations or social inequality. Furthermore, GDP does not include the loss of a nation's wealth or natural resources. Finally, a country can cut down its forests and pollute its rivers and have these actions reflected as an increase in its GDP without registering the corresponding decline in natural capital. Several countries that present economic growth (net), in reality experience a diminution in wealth when the degradation of natural

resources is included (MEA, 2005). Unfortunately, the national accounting in Brazil still does not consider the exhaustion or degradation of these resources. For this reason, to enable a broader discussion on economic and socioenvironmental development, we analyze the Millenium Goals. This analysis covers so-

cial indicators that reflect the quality of life of populations and environmental indicators that reveal the situation of ecosystems and their natural resources. The Millenium Goals have the virtue of establishing the bases for a wider discussion on the expected benefits of sustainable development for the Amazon.

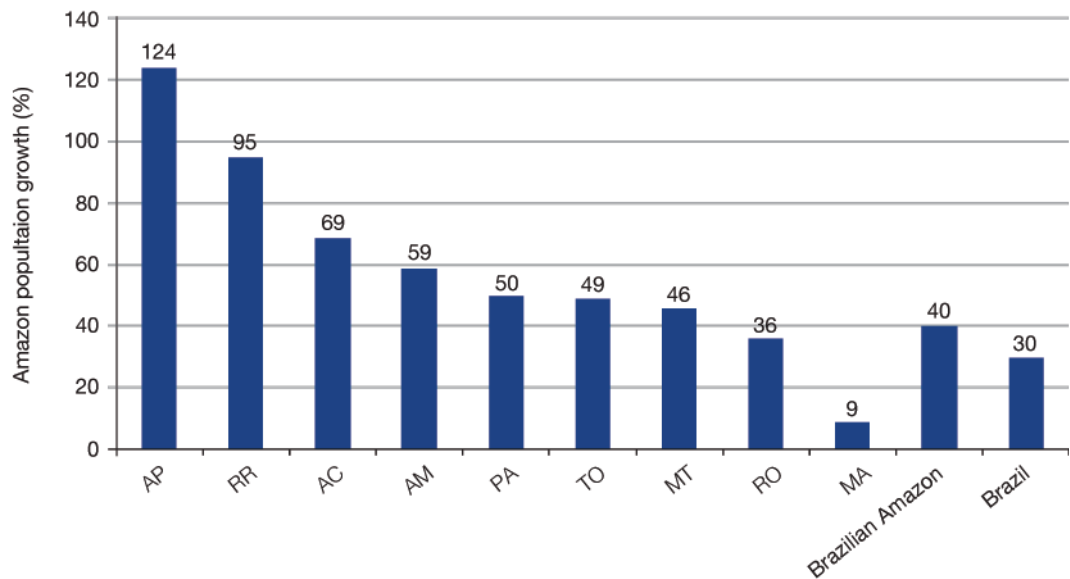


Figure 2. Demographic growth in the Brazilian Amazon between 1991 and 2010 (IBGE, 2010a).

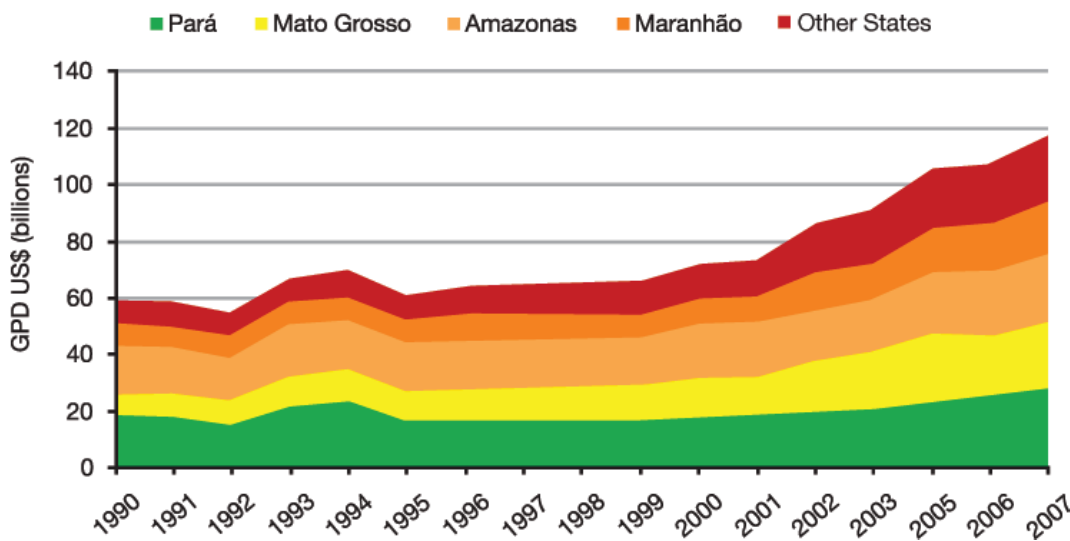


Figure 3. Evolution of GDP between 1990 and 2007 (deflated) in the Brazilian Amazon (Ipea, 2010a).

Eradicate extreme poverty and hunger

The Universal Declaration of Human Rights says that “everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing and medical care and necessary social services...”. Although poverty is a broad concept that must be analyzed in a multidimensional form, in practice, in many countries, poverty is determined by the minimum income necessary to pay the costs of basic necessities, especially food. It is estimated that almost 1 billion persons currently live under conditions of extreme poverty and hunger in the world (UN, 2010a). This represents a reduction of 50% since 1990. In Brazil, extreme poverty has fallen in recent years. According to the federal government, the population living below the international poverty line (1 dollar/day) fell from 25% of the population in 1990 to 5% in 2008 (Brazil, 2010a)⁹. However, the national indicators hide the inequalities between regions and between societal groups (see Chart 3: inequality and concentration of income).

In the Amazon, the concept of poverty must be understood from different perspectives to be able to reflect its immense cultural diver-

sity. For about 20% of the population from rural areas, among them the traditional and indigenous populations, who obtain their subsistence from the forest and rivers through extraction (by fishing, hunting or picking fruits), the geographic, environmental and cultural factors are determinant in the evaluation of poverty and of well-being. Finally, the well-being of these populations depends not only on income but also on the abundance of and access to natural resources and on their capacity and conditions for managing them (See the special section on indigenous peoples). Nevertheless, 80% of the region’s population is urban and depends on employment and income for their well-being.

For this reason, to evaluate MDG 1 we utilize the following indicators: (i) percentage of the population living in a condition of poverty or extreme poverty; (ii) work conditions (persistence of child labor, informality and work in conditions analogous to slavery); and (iii) food sufficiency at the family level. A broader evaluation of poverty would require addressing indicators that are still not available for the region (see Chart 4: other measures of poverty and quality of life).

➡ POVERTY PERSISTS IN THE AMAZON

Poverty still affects 42% of the Amazon population. More than 10 million persons lived on less than half of one minimum monthly salary in 2009.¹⁰ The Brazilian mean was 29% of the population below the poverty line for the same year. The population living in conditions of poverty shrank modestly in recent years in the Amazon (Figure 4). In 2009, 17% of the region’s population survived on an income

inferior to one fourth of the minimum salary (extreme poverty) and 25% had an income between one fourth and one half of the minimum salary (poverty). Among the states (Figure 5), Maranhão was revealed to have the poorest population in the region, with 53% living below the poverty line, while Mato Grosso has the best position with 24% of its inhabitants below the poverty line.

The first target of MDG 1 proposes to *reduce by half, between 1990 and 2015, the proportion of the population living in a condition of extreme poverty*.¹¹ Between 1990 and 2009 (Figure 6), extreme poverty (population receiving an income below one fourth of the minimum salary) diminished from 23% to 17% in the Amazon, but still needs to be reduced by another 7 percentage points to fulfill the Brazilian target for 2015 (10%). Among the states, extreme poverty rose in Amazonas and Amapá, held steady in Rondônia and diminished in the

remaining states. In this period, extreme poverty in Brazil was reduced from 20% to 11%.¹²

Among the governmental public policies for combating poverty and eradicating hunger in Brazil is the program *Bolsa Familia* (created by Law nº 10,836 of 2004), which permits the direct transfer of income to poor families. According to the MDS (2010), in December of 2008, 1.9 million Amazon families received 181 million reais in benefits from *Bolsa Familia*. This represented 18% of all *Bolsa Familia* benefits received in Brazil.

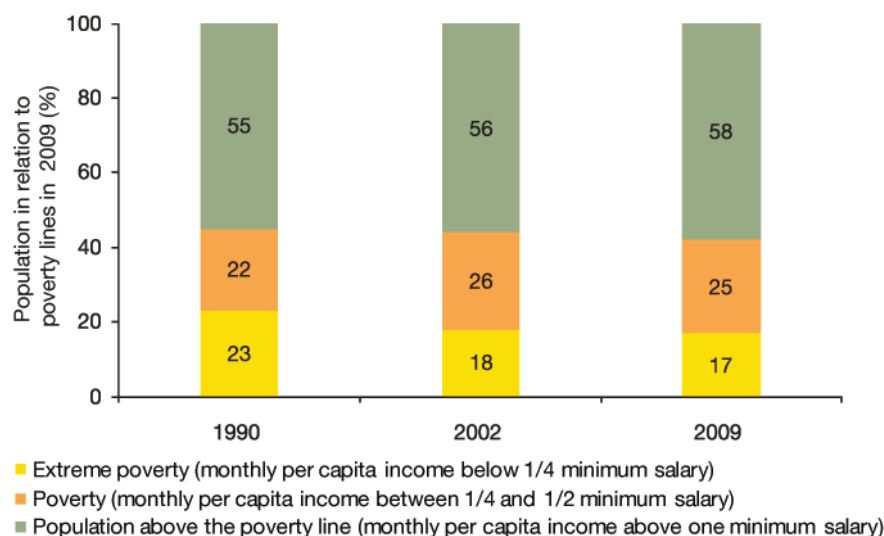


Figure 4. Percentage of the population living in poverty and extreme poverty in the Brazilian Amazon in 1990, 2002 and 2009 (Ipea, 2010b; IBGE, 2010c).

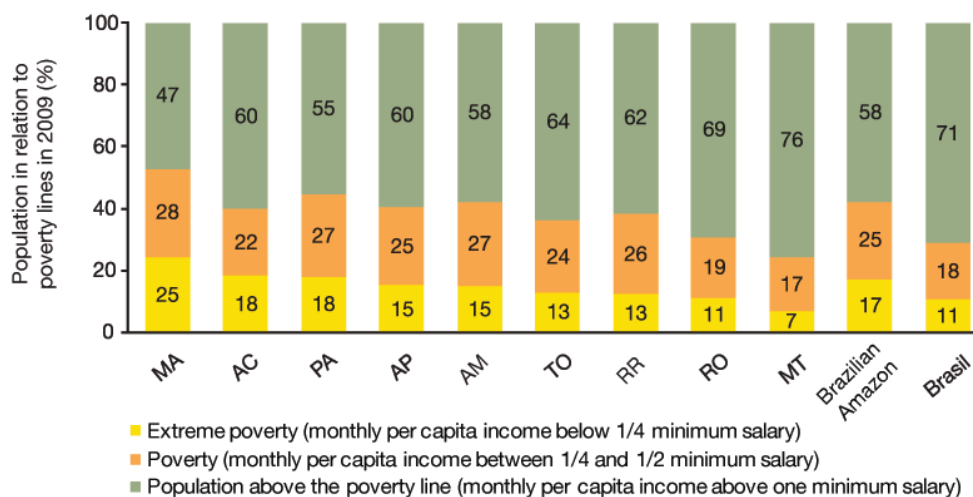


Figure 5. Percentages of the population living in poverty and extreme poverty in the Brazilian Amazon states in 2009 (IBGE, 2010c).

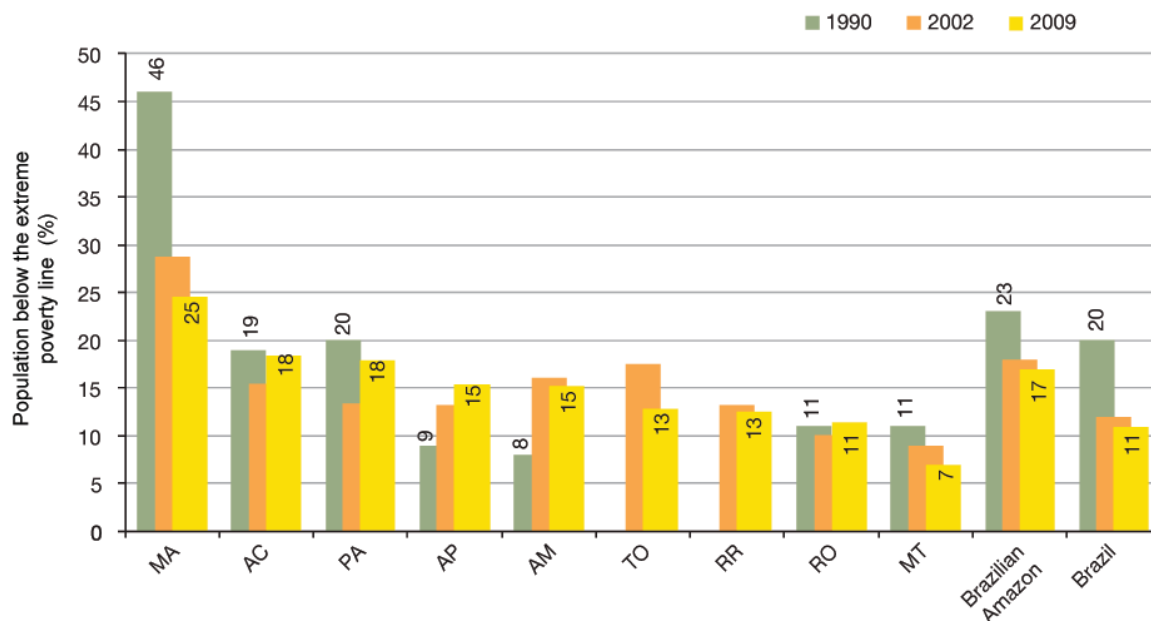


Figure 6. Percentage of population living in extreme poverty in the Brazilian Amazon states in 1990, 2002 and 2009 (Ipea, 2010b; IBGE, 2010c).

➡ BAD WORK CONDITIONS PERSIST

Target 2 provides for guaranteeing *full productive employment and good work conditions for all, including women and youths*. Unfortunately, in the Amazon, serious problems still persist including child labor and work in conditions analogous to slavery. Furthermore, informality has remained high in recent years.

Although the rate of child labor has diminished in recent years (Figure 7), 14% (about 510 thousand children) of children between 10 and 15 years of age are still working in the region. Maranhão and Acre have the highest child labor rates among the region's states, 22% and 20%, respectively, while Amapá presents the lowest rate (7%).

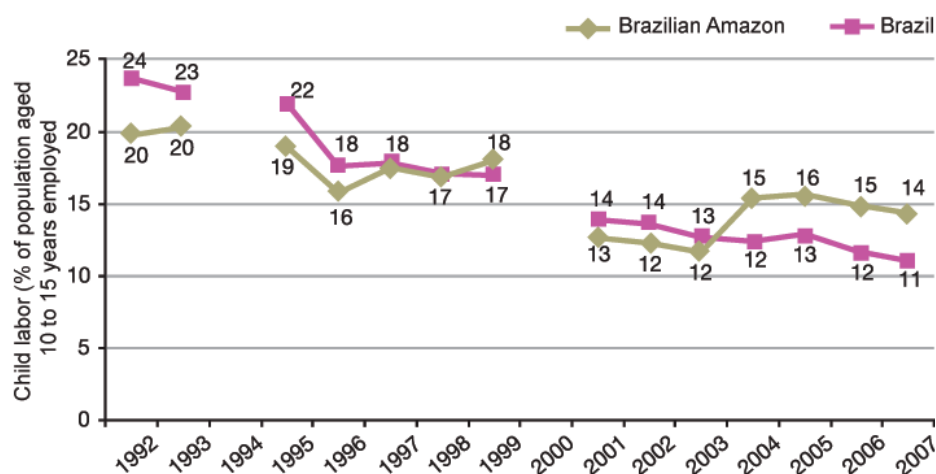


Figure 7. Evolution of child labor (percentage of the 10 to 15 year old population employed) in the Brazilian Amazon between 1992 and 2007 (IBGE via MS 2010a). Data for 1994 and 2000 are unavailable.

Between 2003 and 2009, 1,422 cases of work in conditions analogous to slavery were registered in the Amazon (Figure 8). This represents 80% of all the cases reported in Brazil. During these years, more than 15 thousand persons were liberated from a condition of forced work in the region. As recently as 2009, 140 cases of slave labor were registered in the region: 60% of them in Pará, 21% in Maranhão and 16% in Mato Grosso. Although the number of cases has diminished in recent years, the

persistence of this illegal practice that violates human rights remains elevated (See more details in the special section “Peace”).¹³

According to the UN (2010b), slave laborers in Brazil are generally illiterate men between 25 and 40 years of age, originating mainly from Maranhão, Piauí and Tocantins. The majority of these men work on cattle ranches (38%), agricultural sites (25%) or in clearcutting (deforestation) and logging (14%) (UN, 2010b).

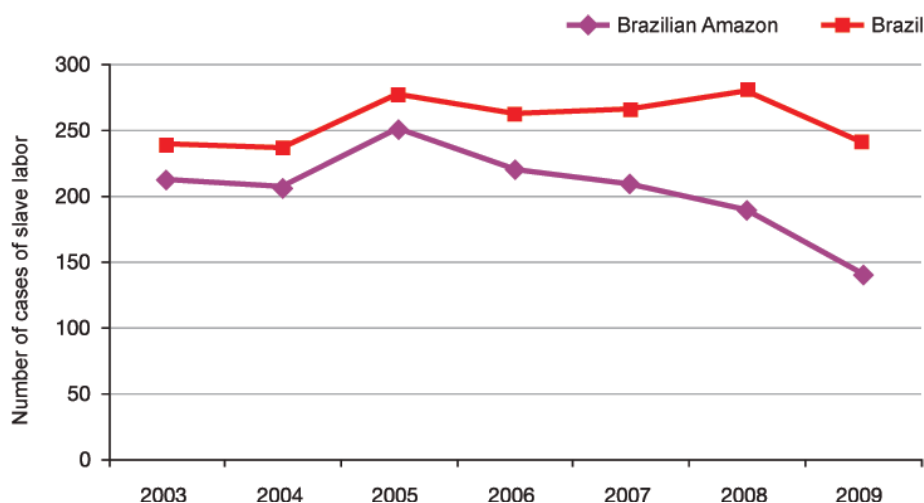


Figure 8. Number of labor cases in conditions analogous to slavery in the Brazilian Amazon between 2003 and 2009 (CPT, 2010).

In addition to the chronic problems of child labor and forced work, in the Amazon more than half of the economically active population works in the informal market without the guaranteed social benefits (Figure 9). Between 1992 and 2009, the degree of informality remained at 60% in the Amazon. The proportion of the population working informally in the region was higher than the Brazilian mean (49%).

Maranhão, Pará and Tocantins presented the highest levels of informality where 73%, 69% and 67% of their respective economically active populations worked in the informal market. In 2008, 8% of the Amazon’s economically active population was unemployed. In the last decade, the unemployment rate remained practically stable in the Amazon and fluctuated in a manner similar to the national average (Figure 10).

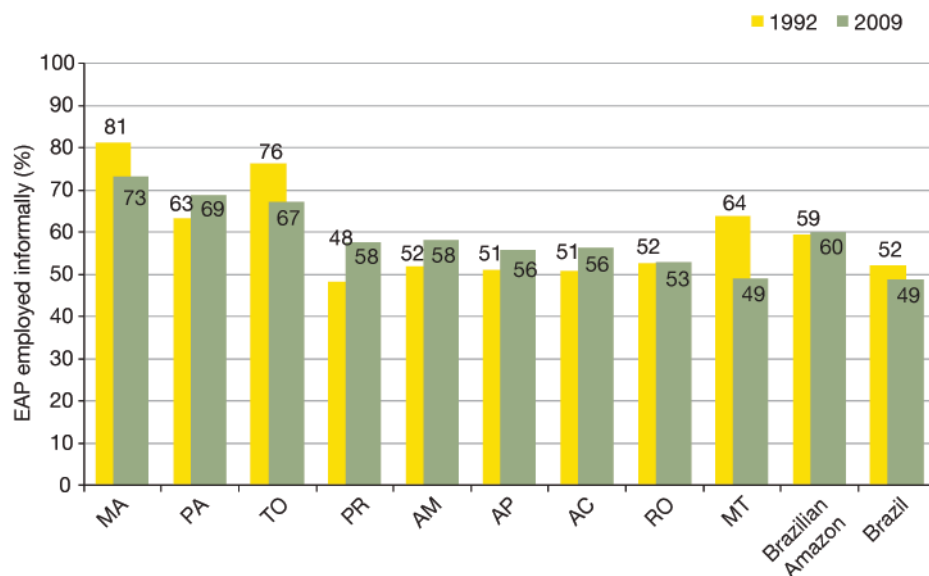


Figure 9. Percentage of the economically active population working in the informal market in 1992 and 2009 in the Brazilian Amazon states (Ipea, 2010c; IBGE, 2010c).

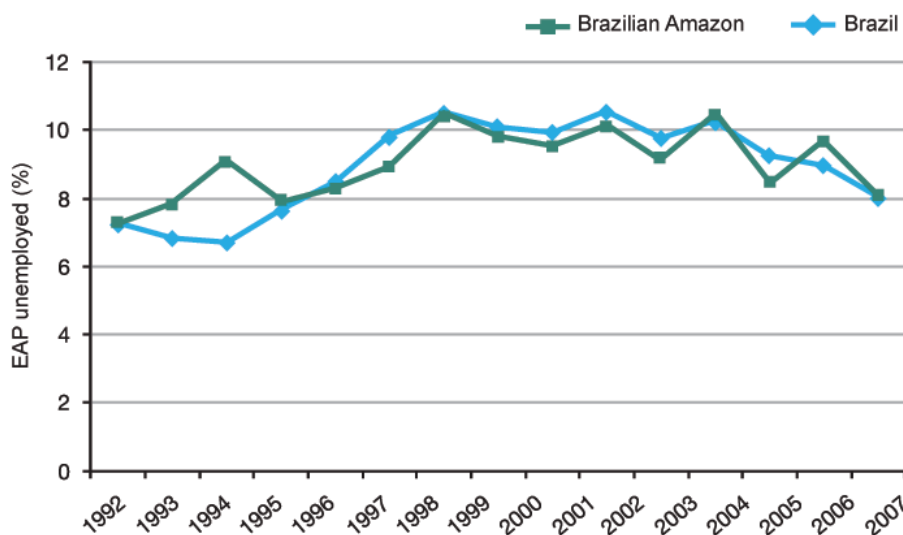


Figure 10. Evolution of the unemployment rate in the Brazilian Amazon between 2003 and 2008 (Ipea, 2010c; IBGE, 2008b).

CHILD MALNUTRITION DIMINISHES DRASTICALLY, BUT FOOD INSUFFICIENCY PERSISTS

Target 3 of MDG 1 seeks to *reduce by half, between 1990 and 2015, the proportion of the population afflicted by hunger*. The good news is that the percentage of children malnourished in

the Amazon fell considerably in the last 10 years from 11%, in 1999, to only 2% in 2009 (Figure 11). For this indicator, there was no disparity between the Amazon and the Brazilian mean.

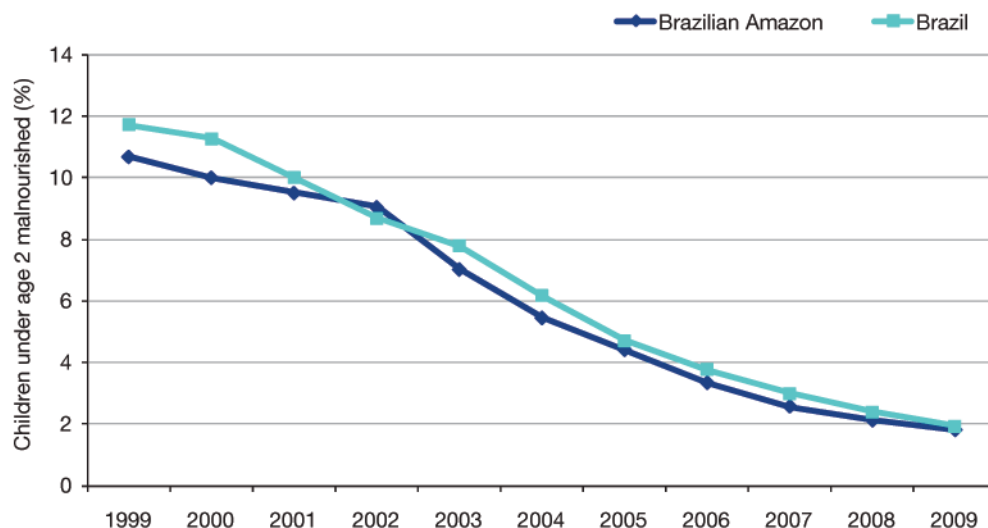


Figure 11. Evolution of the percentage of children under age 2 who were malnourished in the Brazilian Amazon from 1999 to 2009 (MS, 2010b).

The most recent data on food in Brazil were obtained by IBGE for Family Budget Research (POF). According to its findings, the perception about the quantity of food consumed is indicated to be one of three degrees: (1) normally it is not sufficient; (2) sometimes it is not sufficient; and (3) it is always sufficient. In the Amazon, only 53% of families reported having always had sufficient food in 2009 (Figure 12), while 11% declared a constant lack of food. In

Brazil as a whole, the average results are better: 65% of the population always had sufficient food. Less than half of the families in Roraima, Pará, Amazonas, Tocantins and Maranhão declared that they always had sufficient food.

In 2004, another study from IBGE showed that 35% of Amazon domiciles registered average or severe food insecurity. Unfortunately, the data from 2004 and 2009 are not comparable due to incompatibility of methodologies.

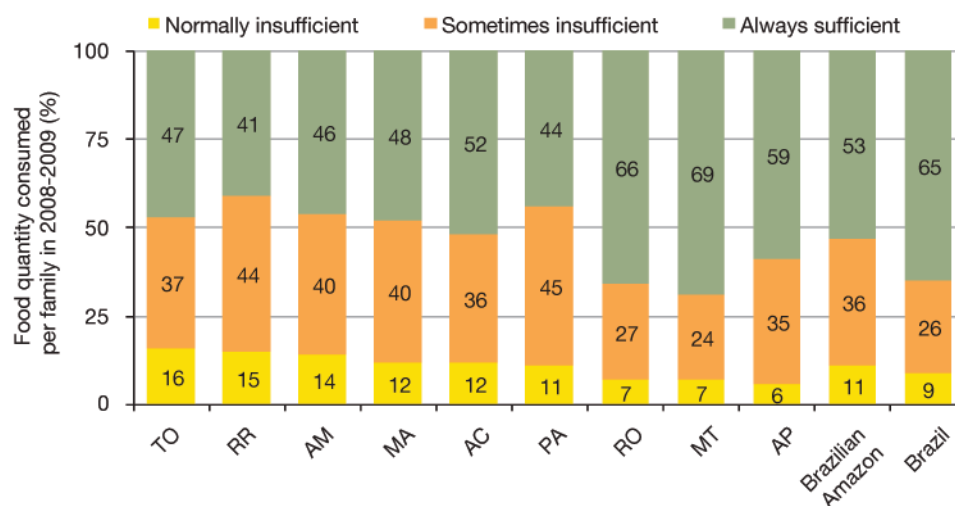


Figure 12. Quantity of food consumed by families in the Brazilian Amazon states from 2008 to 2009 (IBGE, 2010d).

Chart 3. Inequality and concentration of income

The poverty indicators improved in the country. Nevertheless, Brazil still presents much social inequality. In fact, Brazil is among the top ten countries in the world for income inequality. The Gini Index, used worldwide to measure inequality, was 0.53¹⁴ in 2009 in both the Amazon region and Brazil as a whole (Ipea, 2010b). This inequality has remained stable in the region since 1990. Acre presented the greatest inequality in the region (Gini Index = 0.61) and the second highest in all Brazil.

Another way to look at the inequality in the region is to compare the participation, in total household income, of the richest 1% among the population (241 thousand persons) with the participation of the poorest 50% (12.3 million persons). In 2009, the wealthiest 1% of the population received 11.3% of total household income in the region (Ipea, 2010b), while the share of the poorest 50% was only slightly larger (16.4%). In 1990, the inequality measured by participation of the richest and poorest in household income was similar to 2009: the richest 1% of the population obtained 10.7% of the total household income in the region, while the share of the poorest 50% was slightly more (15.1%).

Chart 4. Other measures of poverty and quality of life

The quality of life must be evaluated in a multidimensional form and not only by economic indicators. For this reason, indices have been created in recent decades. The most widely known one is the Human Development Index (HDI), created in 1990 by UN. It is an index that uses indicators of education, health and income. It varies from 0 (worst) to 1 (best). Although this measure is the most used worldwide, it has limited periodicity in Brazil for the states and municipalities. The most recent HDI data for the Amazon are from 2000, when the region presented an HDI of 0.705 (Celentano and Verissimo, 2007b). In that year, Brazil's HDI was 0.766 and the country ranked 74th in the world (Pnud, 2003). In 2010, Brazil ranked 73rd.

In 2006, the Firjan Index of Municipal Development (FIMD) was created in Brazil. The FIMD is similar to HDI, but it utilizes a greater number of indicators (3 for employment and income, 3 for health and 6 for education)¹⁵ and presents more recent municipal data (Firjan, 2008). The average FIMD for the Amazon in 2006 was 0.613, while the Brazilian mean was 0.670 (Firjan, 2006). Maranhão (0.572) and Pará (0.589) presented the worst results, while Mato Grosso (0.655) was the best. Among the municipalities, 45% presented an FIMD less than 0.5 (Figure 13).

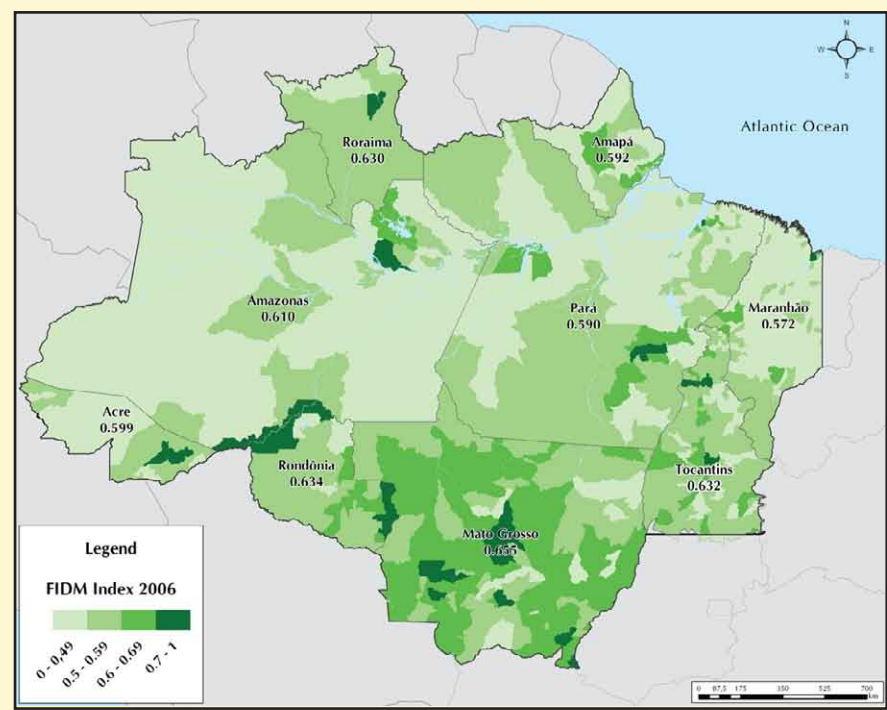


Figure 13. FIMD of Brazilian Amazon municipalities in 2006 (Firjan, 2006).

Recently, the United Nations Development Program (Pnud) created the Human Values Index (HVI). A probable replacement for HDI, the HVI incorporates more qualitative aspects of development, which reflect the expectations, dreams and ambitions of population by means of questionnaires (Pnud, 2010). Preliminary results for Brazil indicate that the country has an HVI of 0.59, while the worst region for HVI is the north (0.50) (Pnud, 2010).¹⁶

GOAL 1 - ERADICATE POVERTY AND HUNGER



Target 1: Reduce by half, between 1990 and 2015, the proportion of the poor population.

- **Brazil's Target for 2015:** 10% of the population living in conditions of extreme poverty (one fourth of a minimum salary).
- **Amazon in 2009:** 17% of the population in extreme poverty.
- **Evaluation:** Maintaining the current rate of reduction, this target will be reached only in 2030. Mato Grosso already achieved the target. Maranhão is the state farthest from fulfilling this target.



Target 2: Guarantee full productive employment and good work conditions for all.

- **Evaluation:** Although the quantitative target is not specified by the UN, and given that child labor and work in conditions analogous to slavery persist in the Amazon, this target cannot be completed. Furthermore, the majority of laborers in the region work on the informal job market without securing the social rights provided by law.



Target 3: Reduce by half, between 1990 and 2015, the proportion of the population that suffers from hunger.

- **Evaluation:** This target was not evaluated due to incomparability of data between different years. Data on food security and nutritional state in Brazil are available in different metrics for the Amazon. In 2009, only 53% of the Amazon population declared constant sufficiency of food on their tables. The good news is that child malnutrition fell drastically in the region, affecting only 2% of children.

Achieve universal primary education

Education is the principal catalyst for human development and for the construction of a fair society (Unesco, 2010). Fundamental education is a basic human right indispensable for enjoying the other social, economic, political and cultural benefits and rights. No country has achieved human and economic development without investments in education. Globally, access to education is dependent on family income and on conditions of access to schools. Children from a rural setting have only half the access to school that urban children do. Among the poorest fifth of the world population, 40% of the children do not attend school (UN, 2010a).

In Brazil, the access of the population to education (measured by frequency of attendance) rose steeply. Currently, the main national challenges are ensuring that all Brazilian youths finish primary school (Brazil, 2010a) and improving the quality of the schooling (see Chart 5 on the quality of basic education). For this it is a prerequisite to invest not only in the training and updating of teachers but also in good work conditions. To measure the progress in relation to MDG 2 in the Amazon we evaluate: (i) the rates of illiteracy and functional illiteracy; (ii) years of study; and (iii) rates of net and gross school attendance.

➔ ILLITERACY FALLS, BUT FUNCTIONAL ILLITERACY REMAINS ELEVATED

Illiteracy among the Amazon population aged more than 15 years diminished from 20% in 1990 to 11% in 2009 (Figure 14). In Brazil as a whole, the drop was similar during this period, reaching 10% in 2009. Nevertheless, high functional illiteracy persists in the region. In 2009, among the Amazon population considered literate, it is estimated that 23% were functionally illiterate which means knowing how to write something simple but having limited skills and comprehension difficulty (generally those with less than three years of study). In other

words, the true illiteracy rate (illiterates plus functional illiterates) in the Amazon in 2009 was 33% (Figure 15). Maranhão presented the worst performance, with 51% of the population truly illiterate (19% declared illiterate and 31% functionally illiterate), while Amapá presented the best result. According to IBGE (2010c), the rural population of the region presented an illiteracy rate 2.5 times higher than urban areas whereas the black and mulatto population presented illiteracy rates 2.3 times greater than the white population.

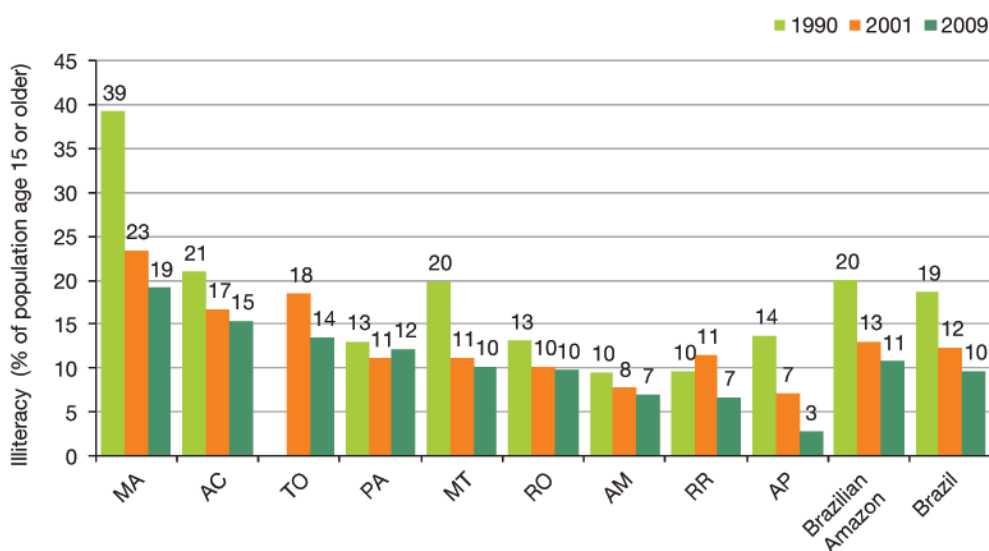


Figure 14. Illiteracy rate (% of the population ≥ 15 years) in the Brazilian Amazon states in 1990, 2001 and 2009 (Ipea, 2010d; IBGE, 2010c).

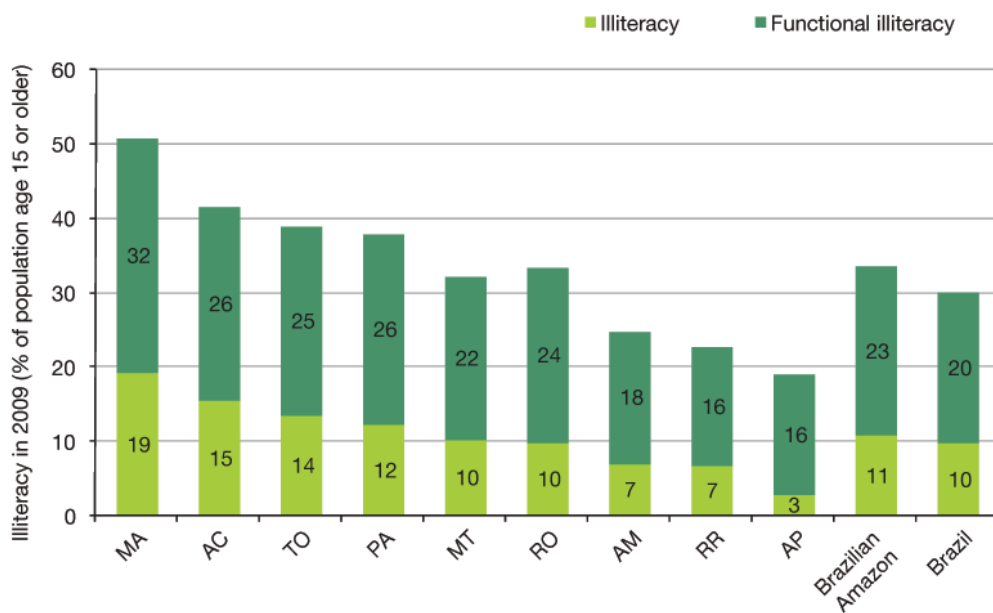


Figure 15. Illiteracy rate and functional illiteracy (% of population ≥ 15 years) in the Brazilian Amazon states in 2009 (IBGE, 2010c).

➔ YEARS OF STUDY INCREASE

The minimum time necessary to conclude primary, middle and secondary school in Brazil is 12 years. In the Amazon, the average number of years of study among its population (≥ 25 years of age) rose from 5.1 years in 1990 to 6.9 years in 2009 (Figure 16). In all of Brazil, it rose from 4.8 to 7.1 years of study. All the Amazon states registered an increase in the average number of years of study. In 2009, Amapá had the best situation, with 8

years of study, while Maranhão was the worst case (only 5.6 years). There is a large disparity between the rural and urban zones. In 2009, the average schooling time among the rural population was 4.7 years, versus 7.2 years among their urban counterparts (IBGE, 2010c). Similarly, the mean duration, in years of study, among the black and mulatto population was 20% less than that of the white population in the region (IBGE, 2010c).

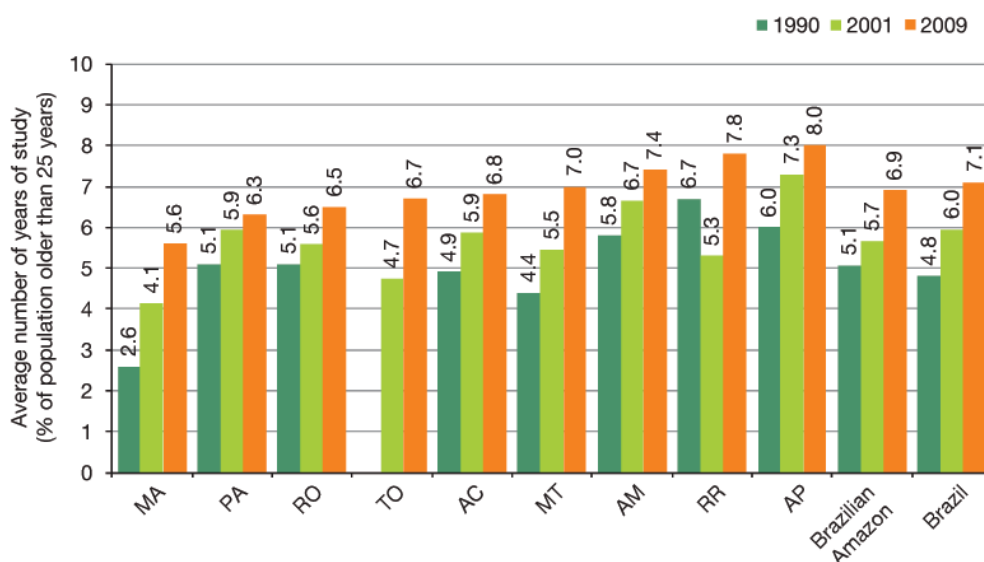


Figure 16. Years of study among population (≥ 25 years) of the Brazilian Amazon states in 1990, 2001 and 2009 (Ipea, 2010d; IBGE, 2010c).

➔ SCHOOL ATTENDANCE RISES, BUT AGE DISCREPANCY PERSISTS

There was a relevant increase in the rate of net school attendance¹⁷ of children and adolescents between 7 and 14 years old who attended primary school in the Amazon. It rose from 71% in 1991 to 90% in 2009 (Table 2). In Brazil as a whole, it increased from 81% to 91% in the same period. Furthermore, there was a relevant improvement in the case of adolescents (15 to 17 years) that attended middle school in the Amazon, jumping from 9% (1991) to 47% (2009). In all of Brazil, the evolution was similar, augmenting from 18% to 51% in the

same time span. As to the gross rate¹⁸, school attendance was even greater in 2009: 97% for children aged 7 to 14 and 84% for adolescents 15 to 17 years old (Table 3). School attendance in rural area had a gap of 10% in 2008 (IBGE, 2009a). Like Brazil as a whole, the Amazon region presented an elevated age-grade distortion. In 2008, 26% of primary school students in the Amazon were older than the age recommended for their grade level (IBGE, 2009a). The age-grade distortion was even greater among middle school students, reaching 39%.



Table 2. Net school attendance (%) of children (7 and 14 years) and teenagers (15 to 17 years) in the Brazilian Amazon states (IBGE, 2010c).

States	Net school attendance ¹ (%)			
	7 to 14 years (Primary and Middle School)		15 to 17 years (Secondary School)	
	1991	2009	1991	2009
AC	62.3	89.5	8.2	51.3
AM	63.8	89.2	8.2	39.6
AP	77.1	91.3	12.7	54.5
MA	60.8	88.7	7.8	40.2
MT	76.7	90.9	11.9	53.3
PA	69.7	87.2	8.1	31.6
RO	75	90.7	7.7	45.7
RR	75.7	89.9	11	50.3
TO	69	93.2	6.4	55.2
Amazon	70.9	90.1	9.1	46.9
Brazil	81.4	91.1	18.2	50.9

¹ Rate of net school attendance is the proportion of persons of a determinate age range that attend school at an adequate grade level, according to grade-age standards of the Brazilian educational system, in relation to total persons in the same age range.

Table 3. Raw school attendance (%) of children (7 to 14 years) and teenagers (15 to 17 years) in urban and rural areas in the Brazilian Amazon states between 1990 and 2009 (IBGE, 2010c).

States	Raw school attendance ¹ (%) Urban zone				Raw school attendance ¹ (%) Rural zone ²			
	7 to 14 years		15 to 17 years		7 to 14 years		15 to 17 years	
	1990	2009	1990	2009	1990	2009	1990	2009
AC	77.9	97.8	64.4	78.7	-	90.8	-	73.4
AM	88.6	95.2	72.5	84.0	-	97.4	-	84.6
AP	85.4	97.4	55.3	88.4	-	98.6	-	85.5
MA	71.2	98.9	58.0	89.7	-	97.6	-	82.0
MT	82.5	98.2	48.0	83.1	-	97.2	-	86.4
PA	88.1	96.5	71.7	84.9	-	93.9	-	78.3
RO	88.7	97.5	64.5	81.9	-	95.5	-	82.9
RR	95.1	98.7	57.9	84.5	-	95.6	-	88.9
TO	-	98.1	-	87.5	-	97.6	-	91.2
Amazon	84.7	97.6	61.5	84.7	-	96.0	-	83.7
Brazil	84.4	97.8	56.6	86.2	-	96.9	-	80.7

¹ Rate of raw school attendance is the proportion of persons of a determinate age range that attend school in relation to the total number of persons in the same age range. ² Rural zone data for 1990 are not available.

Chart 5. Quality of basic education remains low

The school attendance of children and teenagers in the Amazon has increased steeply in recent decades. Nevertheless, improving the quality of public education in the region continues to pose a great challenge. Inep, a federal autarchy linked to MEC, recently created the Index Basic Education Development (Ideb) to monitor the quality of basic education in Brazil. This index varies from 0 (worst) to 10 (optimum) and is calculated from two concepts vital to the quality of education: approval and mean performance of students in the Portuguese language and mathematics (Inep, 2010). The results of Ideb show that both primary education and middle school are of low quality ($Ideb < 5$) in the Amazon. In 2009, the average Ideb of the region was 3.7 for primary school and 3.3 for middle school (Inep, 2009). Despite not being so distant from the Brazilian means (4 and 3.6 for primary and middle, respectively), these values show that the quality of basic education has to improve greatly to achieve minimum acceptable levels above 5. Among the municipalities of the Amazon, the majority have an index that oscillates between 3 and 4 (Figure 17). Fonte Boa (AM) and Campos de Julio (MT) stand out as the only municipalities in the region that score higher than 5 on the Ideb Index.

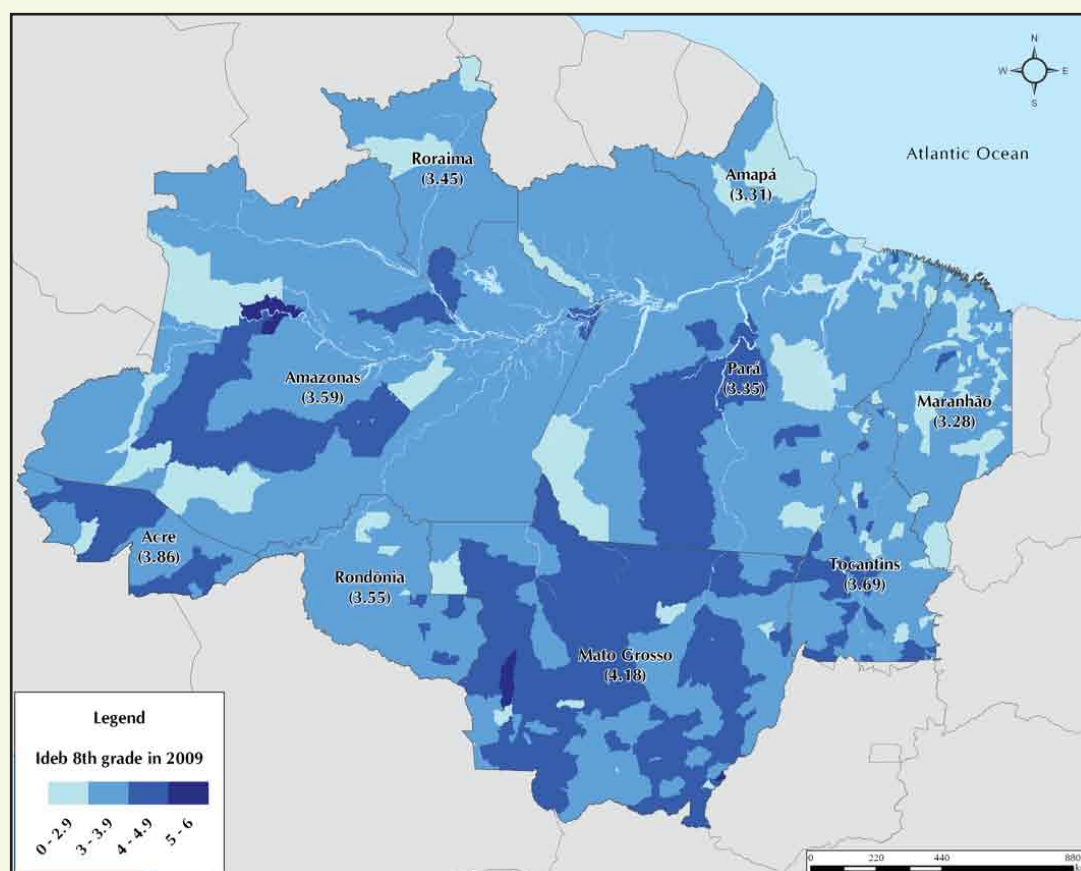


Figure 17. Ideb Index of fundamental education quality in the Brazilian Amazon in 2009 (Inep, 2009).

GOAL 2 - ACHIEVE UNIVERSAL BASIC EDUCATION



Target 4: Guarantee, by 2015, the children will have completed one complete cycle of study.

- **Brazilian Target for 2015:** 100% of the children and teenagers attending school.
- **Amazon in 2009:** 97% of children (7 to 14 years) and 84% of adolescents (15-17 years) attended a school with discrepancy rates of 26% and 39%, respectively.
- **Evaluation:** The target of 100% of children attending fundamental school can be fulfilled by 2015. However, if the current rate of adhesion of adolescents attending middle school were maintained, the 100% target would only be completed in 2021, which is still a great advance for the region. Nevertheless, the other education indicators that were evaluated are a cause for concern. It is essential to eliminate the disparity between the urban and rural areas, favor the inclusion of the black and mulatto population in the educational system, combat functional illiteracy and improve the quality of education in this region.

Promote gender equality and empowerment of women

Despite the rights acquired by women throughout the 20th Century, there is still considerable gender inequality in the world. In general, women suffer discrimination and enjoy little decisive participation in the current society, for example, in politics and the economy. This occurs mainly in less developed countries or where cultural aspects impede the rise of women. While there is no equal treatment of women or equality between the genders in society, it will be difficult to reach the other MDG

(UN, 2010a) because their quality of life and access to education are reflected directly in other MDGs such as maternal and infant mortality and health. To monitor the equality between the genders and the autonomy of women in the Amazon we evaluate three groups of indicators: (i) female education (years of study, illiteracy and school attendance); (ii) proportion of women holding political office; and (iii) the economically active female population and income.

➔ THERE IS NO GENDER-BASED DISPARITY IN EDUCATION

This target was established principally for countries with high percentages of rural population and cultural and religious aspects that discriminate against woman. In Brazil, there is no significant disparity in education between the sexes. In fact, Brazilian females present results slightly better than those of their male counterparts. In the Amazon, women study for more time than men. In 2009, the average number of years study among women beyond age 15 in the region was 7.7 years, while that among men was 7 years (IBGE, 2010c). School attendance of girls aged 7 to 14 years rose from 86% in 1990 to 96% in 2007 (Table 4), whereas during this period that of boys climbed from 84% to 95%. Among adolescents aged 15 to

17 years from 1990 to 2007, female attendance increased from 67% to 82%, while among boys it rose from 58% to 81%.

As to illiteracy, 11% of women aged more than 15 years in the Amazon were unable to read in 2007 (Figure 18). This represents a diminution of 9% in the female illiteracy rate since 1990. In relation to men, illiteracy fell from 17% to 13% in this period. Maranhão has the greatest proportion of women who do not know how to read or write (19%). Lower female illiteracy rates were registered in Roraima (9%), Amazonas (8%) and Amapá (7%). Functional illiteracy is also higher among men (31%) than among women (27%) in the region (IBGE, 2005).

Table 4. Raw school attendance (%) of children (7 to 14 years old) and adolescents (15 to 17 years old), by sex, in the Brazilian Amazon from 1990 and 2007 (Ipea, 2007d).

States	School attendance, ages 7 to 14 years (%) ¹				School attendance, ages 15 to 17 years (%) ¹			
	1990		2007		1990		2007	
	Female	Male	Female	Male	Female	Male	Female	Male
AC	76	80	92	91	67	67	80	70
AM	89	88	97	96	78	35	90	85
AP	86	84	97	98	73	73	85	86
MA	76	67	95	94	66	51	84	80
MT	84	81	96	97	52	45	79	81
PA	89	87	96	95	77	68	78	78
RO	89	89	96	94	66	63	78	70
RR	97	93	98	96	55	62	81	94
TO	0	0	98	98	0	0	81	84
Amazon	86	84	96	95	67	58	82	81
Brazil	85	83	97	97	61	53	83	81

¹ Does not include rural population.

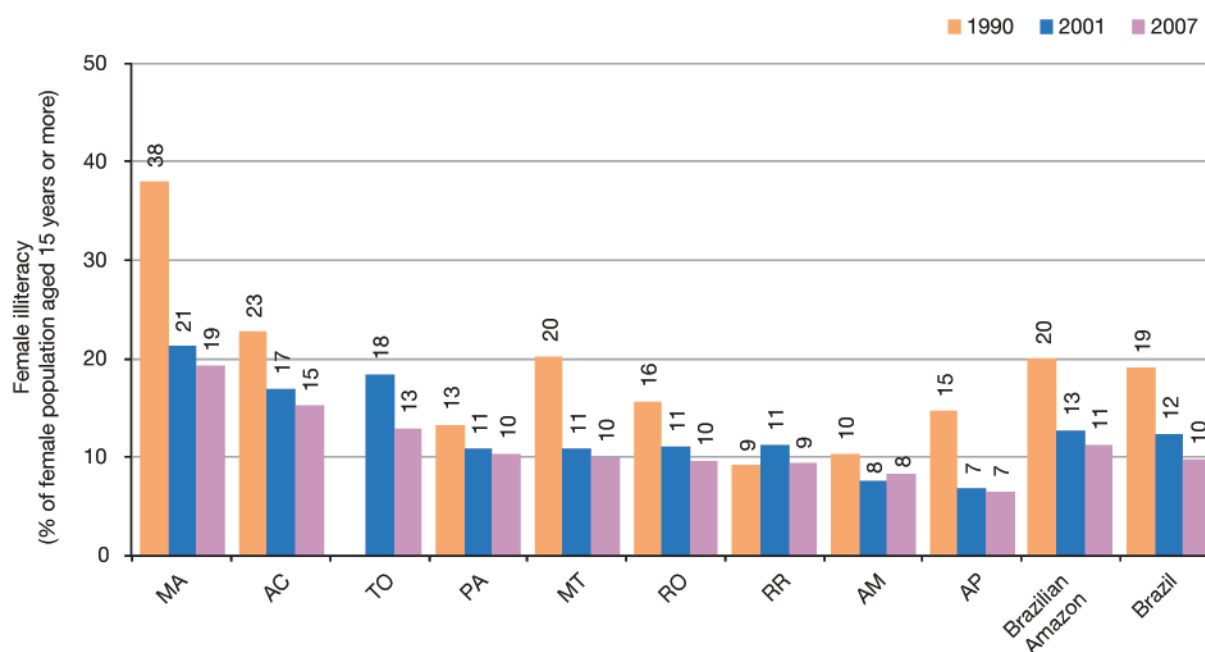


Figure 18. Illiteracy rate among the female population (population at least 15 years old) in the Brazilian Amazon states (Ipea, 2007d).

➔ MODEST PARTICIPATION OF WOMEN IN POLITICS

There was a small increase in female participation in elective office in the Amazon (Table 5).¹⁹ The percentage of females among mayors elected in municipalities of the region rose from 7% in 1996 to 11% in 2008; and they govern only 10% of the Amazon population. Yet the proportion of elected female local legislators held steady at 4% between the years 2000 and 2008. As to federal and Amazon state

legislatures, the participation of women is also small. The proportion of female state deputies increased from 9% in 1994 to 14% in 2010. Women federal deputies, in turn, represented 14% in the Chamber of Deputies in 1994, but diminished to 12% in 2010 (Table 6). One woman state governor and two female senators were elected in 2010, one in Amazonas and the other in Pará²⁰.

Table 5. Proportion of women elected mayors and local legislators in the Amazon states (TSE, 2010).

States	Female mayors (%)				Female local legislators (%)		
	1996	2000	2004	2008	2000	2004	2008
AC	5	5	9	9	14	12	14
AM	3	3	5	11	13	13	11
AP	6	6	13	19	21	15	20
MA	9	9	10	15	14	17	17
MT	6	5	4	6	14	13	13
PA	6	8	8	10	14	15	14
RO	6	8	10	6	10	12	12
RR	13	20	27	0	10	13	11
TO	9	9	12	16	16	16	14
Amazon	7	8	9	11	14	15	14
Brazil	5	6	7	11	12	13	16

Table 6. Proportion of women elected deputies (state and federal) in the Brazilian Amazon states (TSE, 2010).

States	Deputies (%)					
	Federal			State		
	1994	2006	2010	1994	2006	2010
AC	25	13	25	0	21	17
AM	13	25	13	4	13	8
AP	25	50	38	6	13	29
MA	6	6	6	7	17	17
MT	13	13	0	13	4	8
PA	18	12	6	12	17	17
RO	13	13	13	21	4	13
RR	0	25	13	18	13	8
TO	25	13	13	0	13	17
Amazon	14	16	12	9	13	14
Brazil¹	6	9	9	8	11	13

¹ Includes District Deputies.

➡ PARTICIPATION OF WOMEN IN THE ECONOMY IS UNEQUAL

Half of the women of working age were economically active in the Amazon in 2009, while this proportion was higher among their male counterparts (72%) (IBGE, 2010c).²¹ Of the economically active female population, 12% were temporarily unemployed that year in the Amazon. According to the IBGE (2010c), 17% of economically active Brazilians were domestic workers; 16.8% were in commerce; and 16.7% in education, health or social ser-

vices. In relation to formal employment with registered and guaranteed social rights, women represented only 25% of the total number of those formally employed in the Amazon in 2009 (MTE, 2010). Furthermore, for the same job and education level the income of the women in the region was inferior to that of men by up to 38% (Figure 19). Even so, the Amazon showed less inequality than the national average for this indicator.

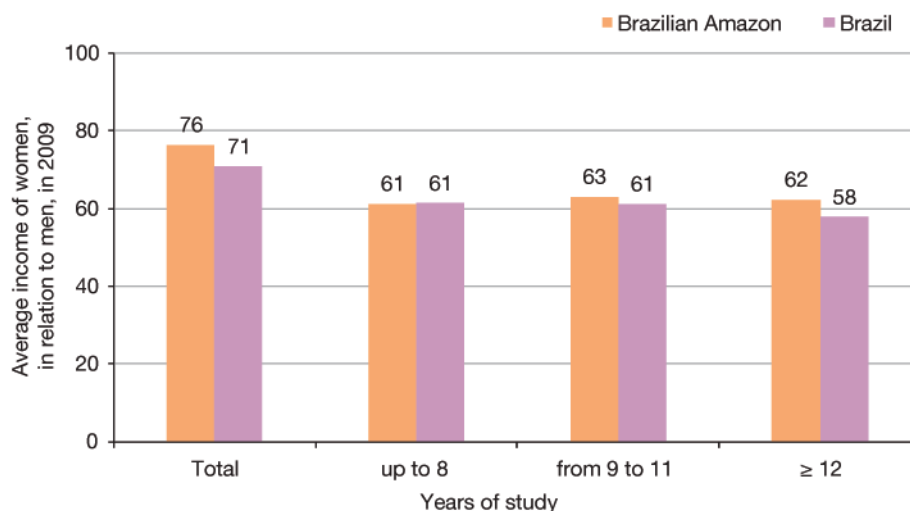


Figure 19. Average income percentage of employed women (≥ 16 years) in relation to men, grouped by years of study, in the Brazilian Amazon in 2009 (IBGE, 2010c).

GOAL 3 - PROMOTE GENDER EQUALITY AND EMPOWERMENT OF WOMEN



Target 5: Eliminate the disparities between the sexes in primary, middle and secondary school education.

- **Amazon in 2007:** The target was fulfilled in prior years, that is, there is no relevant disparity between the proportions of females and males (from 7 to 17 years of age) that were attending school.



- **Evaluation:** Although the target has been completed, the other indicators that evaluate gender equality show the need for improvements in the region, mainly in the participation of women in politics and in a more just job market in reference to remuneration and social benefits.

Reduce child mortality

Infant mortality reflects the socioeconomic and environmental conditions of a region as well as the condition of access to a quality health system. Furthermore, the access of a population to basic sanitation is also directly linked to its infant mortality and life expectancy. According to the WHO (2009), about 9 million children aged less than 5 years die annually in the world, of which approximately two thirds are in Africa or south-eastern Asia. The primary direct causes of such mortality are pneumonia, diarrhea, malaria, measles and HIV/AIDS, all of which are aggravated by malnutrition (WHO, 2009). Infant mortality may be reduced by more than 70% through preventive measures such as sanitation, education, hygiene, breastfeeding and simple interventions (access to antibiotics, oral hydration, insecticides and mosquito nets) (UN, 2010a). Worldwide, the target established by the UN (to *reduce by two thirds, between 1990 and 2015, mortality in children up to 5 years of age*) will be difficult to complete by 2015 (UN, 2010a).

In Brazil, 51 thousand deaths of children aged up to 5 years were registered in 2008 (MS, 2010c). This represents a reduction of almost 60% in the infant mortality rate since 1990. In this case, the target established by the UN could be fulfilled before 2015 (Brazil, 2010a). Nevertheless, there is a disparity among the regions of the country. The northeast and the Amazon still present the highest mortality rates in Brazil. In 2009, the federal government established a program (*Pact for the Reduction of Infant Mortality in the Northeast - Brazilian Amazon*)²² with the objective of reducing infant mortality by 5% per year in 256 municipalities identified as critical in these regions (Brazil, 2010a). In addition to the regional disparity, according to Ripsa (2008a), the national databases on mortality provide unsatisfactory coverage and a considerable proportion of deaths do not get registered in the official statistics (see Chart 6: underreporting of infant mortality). To evaluate the infant mortality situation in the Amazon we utilize two indicators: (i) the mortality rate of children up to 1 year of age; and (ii) the mortality rate of children up to 5 years of age.

➡ INFANT MORTALITY UP TO 1 YEAR OF AGE FALLS

The mortality of infants up to 1 year old fell 52% in the Amazon between 1991 and 2009, in other words, it dropped from 51 to 25 deaths per 1,000 live births (Figure 20 and 21). The greatest decline of such early mortality occurred in the 1990s. In Brazil, the rate of deaths fell from 45 to 23 in this period. Roraima presented the greatest proportional reduction in infant mortality (63%) in the region, while Acre presented the smallest reduction (31%). Maranhão improved, but continues to present

the worst result in the region and the second poorest outcome in all of Brazil, with 37 deaths per 1,000 live births. Roraima presents the best result (18). Between 2000 and 2009, infant mortality dropped in all the states. In Acre, the decline was modest, only 5%.

A slight majority (51%) of infant deaths occurs in the first 28 days of life (Brazil, 2010a). For this reason, it is essential to provide good medical care for the mother during pregnancy and at delivery to guarantee the child's survival.

al. According to the MS (2010b), in 2006, only 5.3% of mothers did not receive any prenatal consultation (in 1995 this value was 24%). It is estimated that more than 90% of deliveries in the region happened in hospitals (MS 2010b)²³, of which 37% were cesarean sections (MS,

2010b), a value below the national average (46%). After birth, maternal breastfeeding is fundamental to the infant's health and must be secured. Data from the MS (2010c) suggest that mothers tend to breastfeed more in the Amazon than in other regions of the country.

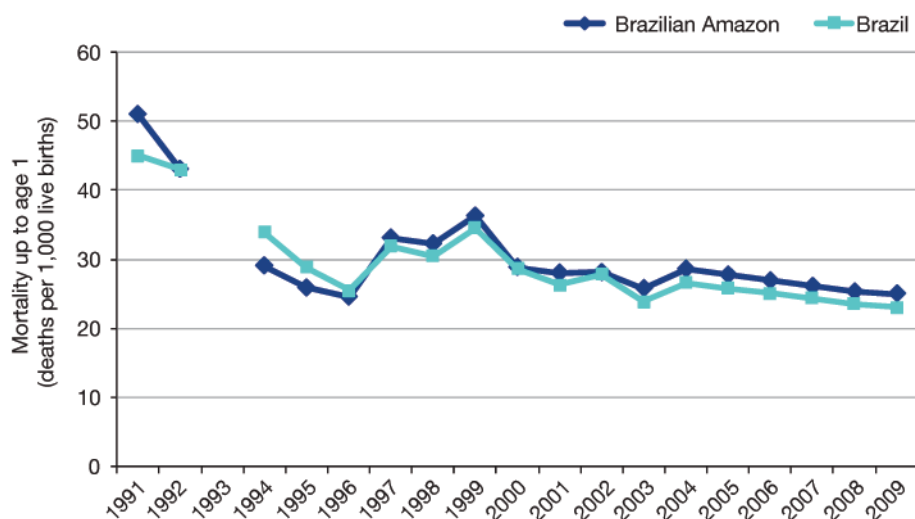


Figure 20. Infant mortality up to 1 year of age in the Brazilian Amazon states from 1991 and 2009 (Pnud, 2003; MS, 2010c; IBGE, 2010e). Data from 1993 are not available.

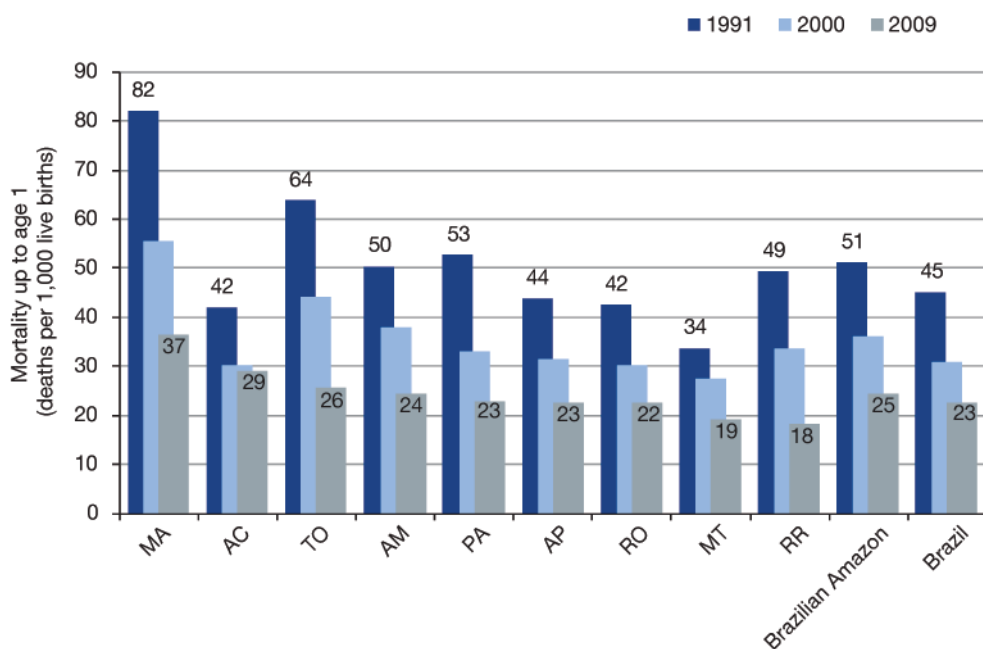


Figure 21. Mortality of infants up to 1 year of age in the Brazilian Amazon states in 1991, 2000 and 2009 (Pnud, 2003; IBGE, 2010e).

➔ REDUCTION OF MORTALITY UP TO 5 YEARS OF AGE

The mortality of children up to age 5 also fell drastically in the Amazon between 1991 and 2006: from 67 to 27 deaths per 1,000 live births (Figure 22). In Brazil, the death rate dropped from 59 to 25 in this period. Among the states of the region, Tocantins presented the greatest proportional decline in infant mortality (72%), while Acre presented the smallest reduction (32%). Maranhão and Acre presented the worst outcomes, 36 and 34 deaths, respectively, per 1,000 live births,

while Roraima produced the best result (21). In relation to the year 2000, the mortality fell in all the states except Acre. In 2006, 19% of regional infant deaths among this age range were caused by diseases of the respiratory apparatus and 17% by infectious and parasitical diseases (MS, 2010a). Acute diarrhea, a disease that is easily prevented and treated, was responsible for 6% of the deaths of children under age 5 in the Amazon in 2006 (11% in Roraima and 10% in Acre).

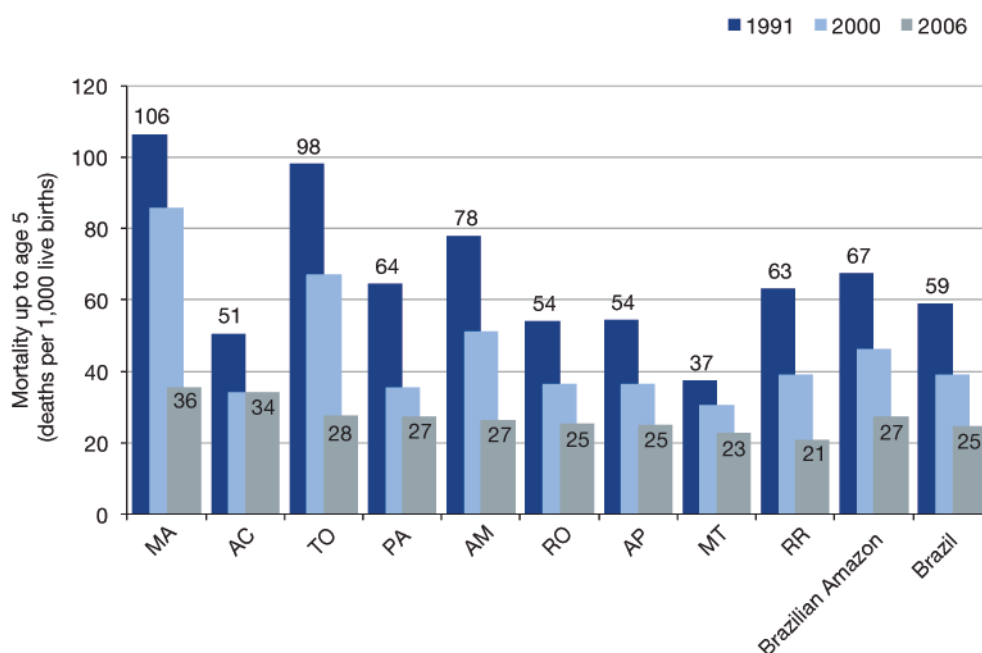


Figure 22. Mortality of infants up to 5 years of age in the Brazilian Amazon states in 1991, 2000 and 2006 (Pnud, 2003 and MS, 2010c).

Chart 6. Underreporting of infant mortality

The drastic drop in infant mortality is the best result in Brazil in relation to the MDGs (Brazil, 2010a). But the Brazilian infant mortality rates can be underestimated. Analyses by Ripsa (2006a) cross-referencing the data on live births from the System of Mortality Information (SIM) from the MS with the IBGE census demographics estimate that as many as 72% of the deaths of infants less than 1 year old in Brazil – and 79% in the Amazon – were not registered (Figure 23). This value is higher than 90% in Roraima, the state that presented the best outcome in the region according to official statistics from the MS.

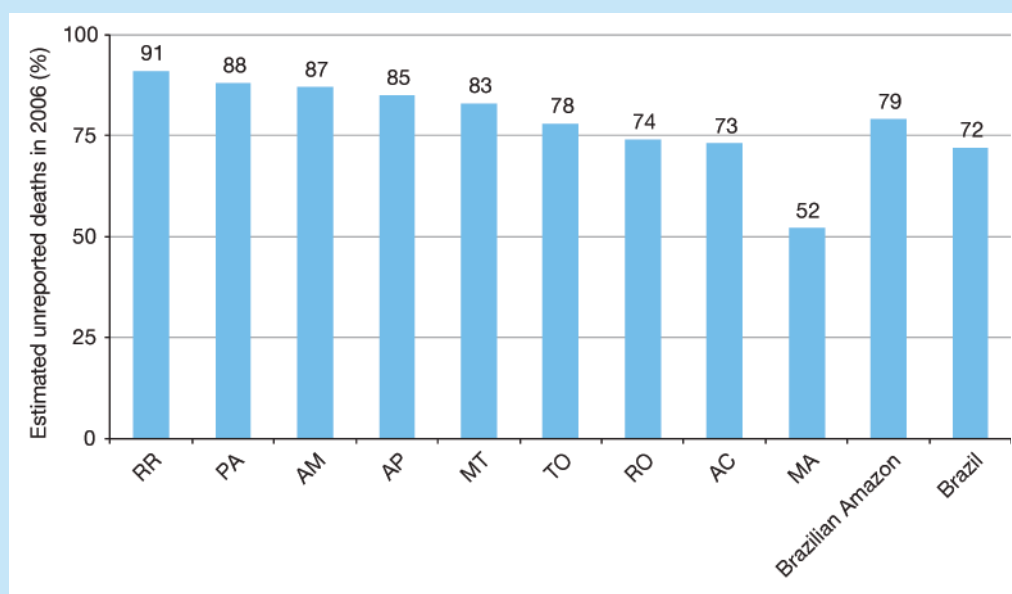


Figure 23. Ratio between reported and estimated deaths of children up to age 1 in the Brazilian Amazon states in 2006 (Ripsa, 2006a).

GOAL 4 - REDUCE INFANT MORTALITY



Target 6: Reduce by two thirds, between 1990 and 2015, mortality in children up to 5 years of age.

- **Brazilian target for 2015:** 20 deaths/1,000 live births.
- **Amazon in 2006:** 27 deaths/1,000 live births.



- **Evaluation:** By maintaining the current rate of decline, this target can be completed in the Amazon by 2015. Nevertheless, potential underreporting of infant deaths represents a serious problem and may be distorting the results.

SPECIAL SECTION.

Indigenous Peoples and the Millenium Development Goals

By Leandro Mahalem de Lima, Socioenvironmental Institute (ISA)

Evaluating the fulfillment of the MDG for the indigenous peoples of the Amazon is a great challenge, first of all because the criteria for defining the MDG do not directly address the aspirations and well-being modes inherent in these populations. The second reason is that Brazil still does not conduct specific surveys at regular time intervals that take into account the life quality of the indigenous peoples²⁴.

The fragility of the monitoring mechanisms is, in itself, a central indicator of the precariousness of the central planning of public policies directed to these populations in Brazil. The creation of a consistent and integrated information system is fundamental for ensuring the effectiveness of the public policies intended for the well being of these indigenous peoples.

Given these limitations, we present here-in a brief survey of the current situation of the indigenous peoples of the Amazon, starting from the principal life-quality indicators linked to the MDG proposal²⁵.

Population and indigenous lands: The Amazon accounts for more than 98% of the extent of all Indigenous Territories (ITs) of Brazil²⁶. There are 412 areas that total about 109 million hectares, corresponding to 21.7% of the Amazon territory (Figure 24 and Table 7). About 173 ethnic groups live in ITs, and combine to form an approximate population of 250,000 persons²⁷. After long periods of reduction or threat of extinction, the global indigenous population of Brazil has grown in the last three decades at an average of 3.5% per year.²⁸

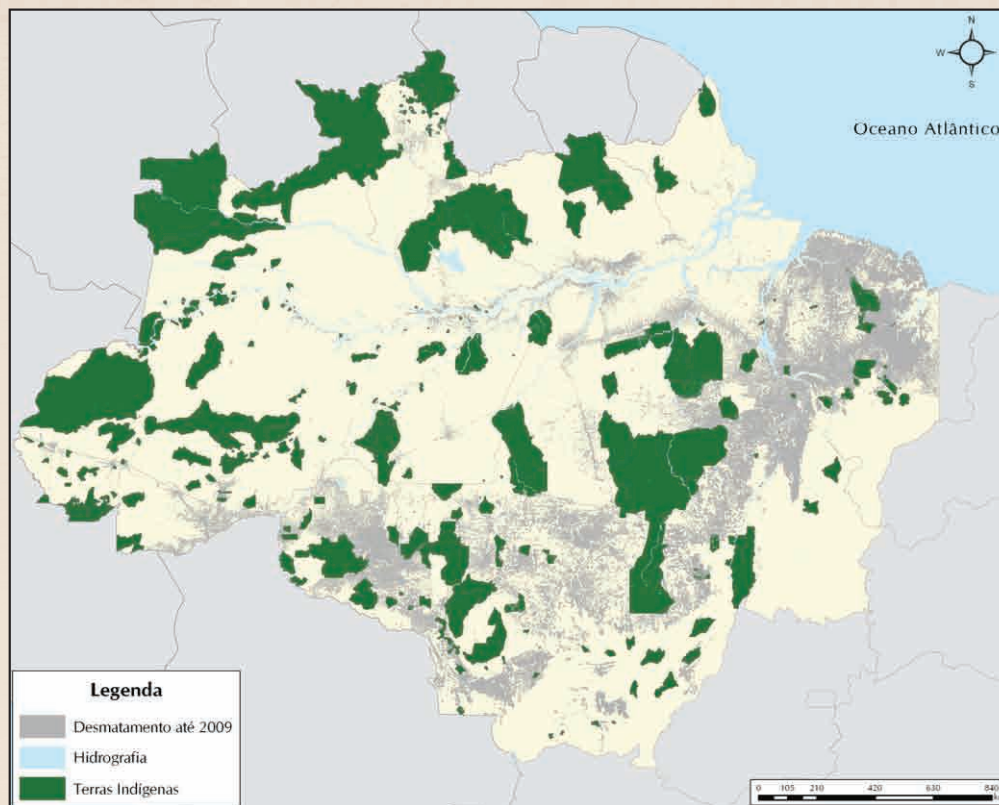


Figure 24. Indigenous territories in 2010 and deforestation until 2009 in the Brazilian Amazon (ISA, 2010; Inpe, 2010).

Table 7. Situation of indigenous territories in the Brazilian Amazon in November of 2010 (Sisarp, 2010).

Situation	No. of ITs	Area (ha)
In identification	58	46,160
With use restricted to non-indigenous persons	4	704,257
Total	62 (15.05%)	750,417 (0.69%)
Identified	7 (1.70%)	635,319 (0.58%)
Declared	36 (8.74%)	5,101,885 (4.69%)
Reserved	6	38,846
Approved	13	5,873,134
Reserved or Approved with Registration in CRI and/or SPU	288	96,336,190
Total	307 (74.51%)	102,248,170 (94.03%)
Total	412 (100%)	108,735,791 (100%)

It is still not known whether this indigenous population growth has resulted from improvement in living conditions (increase of vaccinations and territorial security) or if it is a product of a conscious demographic recovery. In both cases, the growth demonstrates that the quality of life improved, above all from the moment at which its traditionally occupied territories are secured. The demarcated areas correspond to their traditionally occupied territories that constitute a basis of well-being for both current and future indigenous generations. There was advancement in the judicial process of demarcation of ITs in the Amazon in recent years. The great challenge is to obtain the effective consolidation of the delineated territories.

Poverty and hunger: The eradication of poverty and hunger among the indigenous peoples is closely associated with the guarantee of exclusive enjoyment of their traditionally occupied territories, defined by their uses, customs and traditions.²⁹ It is precisely territorial consolidation that enables such populations to produce their foods in their own ways, through the activities of fishing, hunting, agriculture, gathering and even livestock ranching. In fact the challenge of overcoming extreme poverty and hunger is directly related to a territorial guarantee, so that in the demarcated lands the indigenous peoples might develop their way of life in complete liberty and autonomy. Al-

though advances have been observed in this direction, it is highly improbable that the country will be able to resolve all the legal questions, pressures and threats to the ITs in the Amazon by 2015.

Education: Differentiated indigenous school education is a right guaranteed by the Brazilian Federal Constitution of 1988.³⁰ Despite advances, there has not yet been structured in Brazil an indigenous educational system that takes their interests and needs into account while respecting their ways of knowing and their rhythm of life.³¹ Since 2008, the MEC has provided diverse consultations to the indigenous peoples with the objective of conveying a differentiated indigenous school education, in other words, structuring “ethnoeducational territories” that are based on their own aspirations and ways of knowing.

From 1999 to 2007, there was expansion of a network of indigenous schools and growth of almost 50% in the enrollment of indigenous students (Grupioni, 2008).³² In this period, the percentage of teachers with complete university training rose from 9.9% to 13.2%. The percentage of indigenous schools with their own teaching materials increased from 30.5% in 1999 to 41.5% in 2005.³³ This indicator is the key to evaluating whether the indigenous schools have met their objective of increasing the value of their languages and traditional knowledge.

Furthermore, only 5% of the schools can count on computers and less than 1% were connected to the internet in 2006 (Grupioni, 2008).

Although the educational network has expanded, the schools are still far from realizing the ideal of differentiated education, since there remain a low number of indigenous schools that have declared incorporation into their practices the languages, the traditional knowledge and their own teaching materials from the indigenous peoples. Furthermore, there is evidence that the benefits related to school enrollment (such as meals and wages)³⁴ constitute important incentives in the process of expanding the school education network.

Child mortality: Infant mortality is a critical indicator among the indigenous populations. While Brazil as a whole registered a drop in the mortality of infants aged up to 1 year, the rate stayed elevated among indigenous children. Between 2005 and 2007, 50 in every 1,000 live births died within one year (IDS-SSL-Cebrap, 2009).³⁵ This represents a rate two times greater than the mean for the country. Furthermore, considering mortality up to age 5, the indigenous children present a death risk four times higher than that of the general population (IDS-SSL-Cebrap, 2009). Among the principal causes of indigenous child mortality are malnutrition, pneumonia and other respiratory diseases, dehydration and perinatal causes. Given these results, it is impossible that the target of reducing infant mortality proposed by the UN would be fulfilled among these peoples by 2015.

Health: The access of indigenous peoples to basic health services is precarious in the Amazon due to geographic distances and negligence in providing care (ISA, 2006). For this reason, the health status of many of these peoples is critical. Indicators include the high incidences of diseases such as malaria, tuberculosis and STDs. The prevalence rate of tu-

berculosis among indigenous peoples is 101 per 100,000 persons (IDS-SSL-Cebrap 2009), which is three times higher than the national average. Tuberculosis was the cause of 3% of indigenous deaths. As to malaria, there is a tendency toward an increase in the rate starting in 2004. The number of cases rose from 13,911 in 2004 to 33,693 cases in 2007 (Funasa, 2008). The states of Amapá, Amazonas, Pará, Rondonia and Acre present the highest malaria rates among the indigenous peoples of the region. Nevertheless, the expansion of malaria caused by *Plasmodium falciparum* (more lethal) is worrisome in the ITs of Mato Grosso, Maranhão and Pará.

According to the Situational Diagnosis of the Indigenous Health Subsystem (IDS-SSL-Cebrap, 2009), these results indicate that the governmental control actions are inefficient or that there are other problems involved such as expansion of goldmining and logging activity and greater environmental degradation. One example of the precariousness of indigenous health is the dramatic situation experienced by the indigenous residents of the Javari Valley, in Amazonas state. Only between the first of October and the second of November 2010, 12 indigenous persons died.

In October of 2010, the federal government created the Special Secretary of Indigenous Health (Decree No 7.336), linked directly to the MS. This agency is still in the structuring process and will replace Funasa, which demonstrated inefficiency in attending to the indigenous peoples. It is too early to evaluate whether the creation of this new Secretary has brought about any effective improvement in indigenous health. If there are no changes, it is improbable that the health targets proposed by the UN will be completed among the indigenous peoples by 2015.

Environmental sustainability: The ITs are the most conserved protected areas in the

Amazon, with accumulated deforestation of only 1.27% (12,481 square kilometers) versus 1.47% of the conservation units and 21% of the non-protected areas (Imazon and ISA, in press). However, the ITs still suffer from external pressure, mainly on account of covetousness directed at their natural resources including gold and wood. This process of illegal extraction of natural resources is directly related to conflicts and other forms of violence against these peoples.

In 2008 the PNGATI was created, in the sphere of the MMA³⁶, in order to implement actions that support the indigenous peoples in their search for the sustainable management and administration of natural resources of these lands. Its objective is to contribute, primarily, to the protection of the territories and to the environmental conditions necessary for physical and cultural survival, as well as to the well-being of indigenous communities. The objectives and guidelines of PNGATI are being debated with the indigenous peoples and their partner organizations by means of consultations.

Threats and violence: It is estimated that 99 of the 412 ITs in the Amazon region are under a situation of permanent threat (Sisarp, 2010), in relation to land-tenure risks (55) or illegal exploitation of their natural resources (44). Furthermore, there were more than 474 instances of territorial pressure in the last three years in the region: 344 relative to the exploitation of resources and 130 cases of land-tenure pressure. According to Cimi (2009), at least 132 cases of violence against indigenous persons occurred in the Amazon between 2008 and 2009, of which 95 instances constituted aggressions or attempts to kill (45 cases of aggression, 37 homicides and 13 attempted homicide). The occurrences of violence affected 61 ITs. Of these, 18 cases of violence were concentrated in the IT Araribóia (in Maranhão) – 14% of all the occurrences (Cimi, 2009). Several of the murders, aggressions and threats that occurred in this IT were

linked to conflicts between indigenous persons and loggers who had been removing wood illegally from the IT for about twenty years and pressuring not only the Guajajara but also the Awa-Guaja³⁷, which is one of the last hunter-gatherer peoples in Brazil, with little or no permanent contact with the regional society.

Articulation of policies and consolidation of rights: In recent years, diverse policies and programs have been created in partnership with the indigenous peoples to guarantee the environmental sustainability of their lands and to improve their quality of life. In 2006, the National Commission for Indigenous Policy (CNPI) was created and, together with Funai, has the target of articulating state actions in defense of indigenous rights and taking over this guardian model that ruled in the country until the Federal Constitution of 1988. In July of 2009, the CNPI presented to the National Congress a proposal to replace the *Estatuto do Índio* (Indigenous Statute) of 1973, which still awaits a vote. The new text proposes participatory integrated regulation of the patrimony and traditional knowledge, territorial and environmental protection and management, sustainable activities and the use of renewable resources, utilization of mineral and water resources, social assistance, school education and differentiated health care.

The consolidation and enhancement of the rights of the indigenous as well as the integration of public policies directed to them are fundamental to the guarantee of improvements in the life quality of these populations. Only when effective and integrated public policies are able to arise from the terms and aspirations of these populations – who have inhabited the region for millenia – and they consider themselves to be living a good life, can we affirm that the MDG are consolidated for the indigenous peoples of the Amazon. This target still appears far from being fulfilled.

Improve maternal health

To conceive a new life is a sacred experience. But maternity is not a moment of happiness for all the women in the world, since for some it represents suffering and death. According to the WHO (2010a), globally more than 500 thousand women die annually during pregnancy, childbirth and the 42-day postpartum period. In Brazil, more than 1.5 thousand maternal deaths were reported in 2008 (MS, 2010c). The mean maternal mortality rate in developed countries is 9 deaths per 100 thousand live births, while in Africa the rate is higher than 800 (WHO, 2007). Hemorrhage and hypertension are causing more than half of these deaths in the world (WHO, 2010a) and in Brazil (Brazil, 2010a); the other principal causes are: infection, unsafe abortion and ob-

structed labor in childbirth. The principal victims of maternal mortality in the Americas are poor, indigenous and black women from rural zones (CIDH, 2010).

The majority of cases of maternal deaths could be prevented by simple medical interventions (UN, 2010a). Family planning, qualified prenatal care and adequate attention during the labor phase of childbirth and post-childbirth are some of the measures that can reverse the maternal mortality picture in Brazil and globally. To evaluate the maternal health situation of the Amazon, we utilize two indicators: (i) the rate of maternal mortality and (ii) the number of prenatal consultations. Furthermore, we present additional facts on family planning in the region (see Chart 7).

➔ MATERNAL MORTALITY INCREASES

Maternal deaths rose by 22% in the Amazon between 1996 and 2008, passing from 57 to 70 deaths per 100 thousand live births (Figure 25). In 2008, 53 maternal deaths per 100 thousand live births were registered in Brazil, a level 32% less than that for the Amazon region. Among the Amazon states, the maternal mortality rate diminished in Acre (55%) and in Maranhão (7%); it remained stable in Pará and Amazonas and was augmented in the other states (Figure 26). In 2008, Maranhão, Tocantins and Roraima presented the highest rates of maternal deaths, 94, 90 and 90 deaths per 100 thousand live births, respectively. Acre (28) and Rondonia (41) reported the lowest rates. According to the Ripsa estimates (2006b), 29% of maternal deaths are not registered in Brazil.

In 2010, the Brazilian government presented corrected estimates and rates of mater-

nal mortality for the year 1990 in the National Monitoring Report (Brazil, 2010a). These new data present higher mortality rates than those supplied by the MS (2010c). In 1990, the maternal mortality rate was estimated at 140 deaths for every 100 thousand live births in Brazil and, by 2007, this value had fallen to 75, according to the corrected rates (Brazil, 2010a). The corrected data and estimates for 1990 have modified the Brazilian target expected for 2015 (*reduce by 75%, between 1990 and 2015, the maternal mortality rate*) in relation to that presented in our first study (Celentano and Verissimo, 2007a). The Brazilian target shifted to 35 deaths per 100,000 live births. In this study, we present the data published by the MS because the new governmental estimates presented in the National Monitoring Report (Brazil, 2010a) are not available for the states.

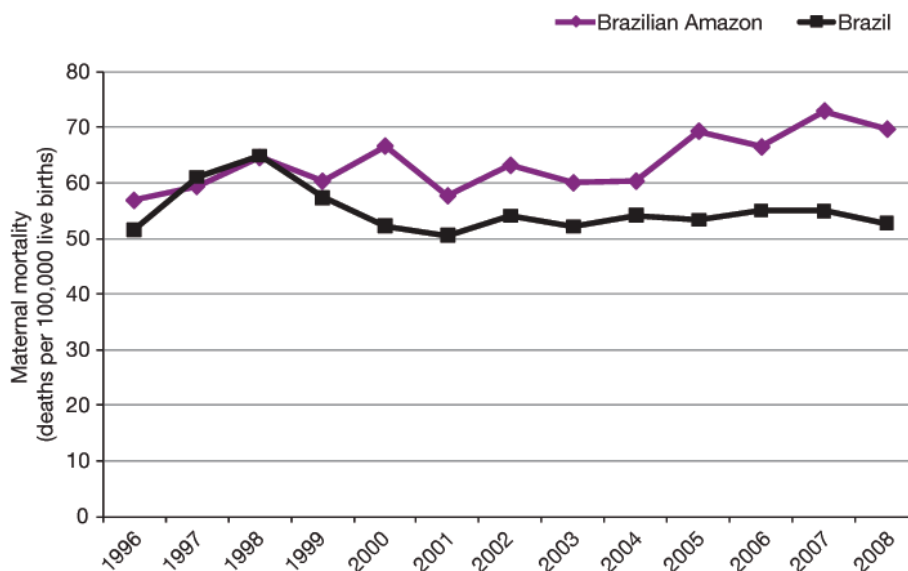


Figure 25. Evolution of maternal mortality in the Brazilian Amazon from 1996 to 2008 (MS, 2010c).

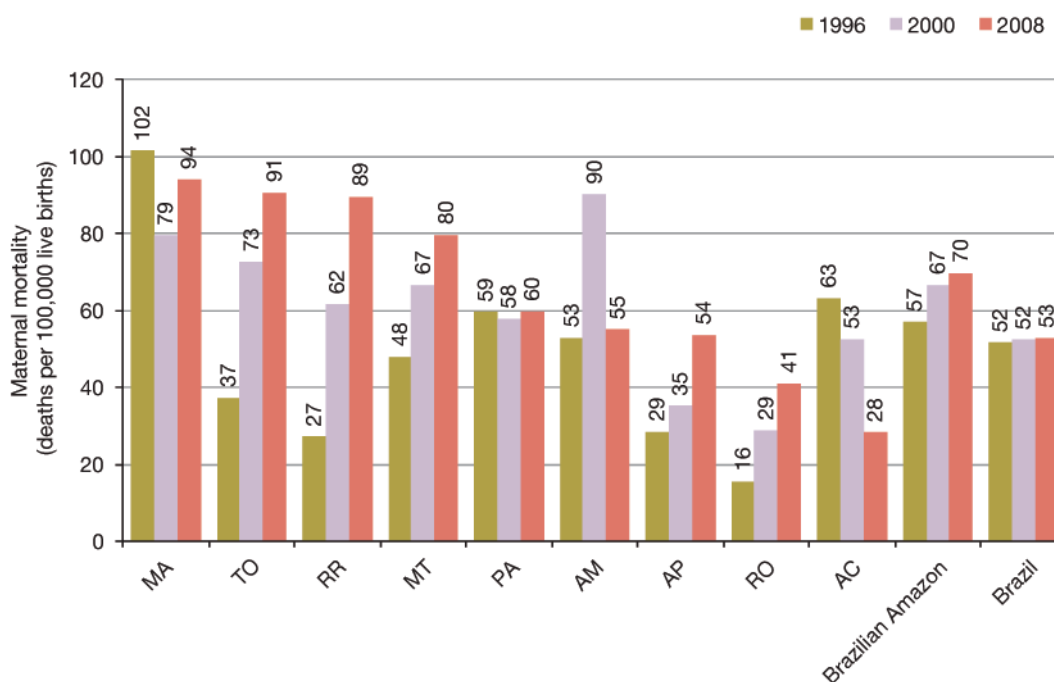


Figure 26. Maternal mortality in the Brazilian Amazon states in 1996, 2000 and 2008 (MS, 2010c).

➡ COVERAGE OF PRENATAL CONSULTATIONS INCREASES

To guarantee universal access to reproductive health is a challenge, especially in regions such as the Amazon where many communities live isolated in forested areas accessible only by boats or airplanes. According to the WHO (2007), only 1 of every 3 women from rural zones receives the recommended care

during pregnancy. In the Amazon, the coverage of prenatal consultations increased greatly between 1995 and 2008 (Table 8). In 1995, it is estimated that 24% of pregnant women did not go to any consultation, while in 2008 this estimate diminished to only 4%. Acre and Amapá were the states with the worst coverage for prenatal consultations, while Mato Grosso, Ron-

donia and Tocantins presented the best results. In the Amazon, only 35% of pregnant women went to the recommended seven or more prenatal consultations in 2008, while the Brazilian mean was much higher: 57%. Despite the advances in coverage of prenatal attention, the quality of attention must be improved in the country to guarantee access to the equipment necessary to diagnose and prevent problems related to gestation (Brazil, 2010a).

The governmental estimates indicate that more than 90% of deliveries in the region occurred in hospitals and were assisted by quali-

fied professionals (MS, 2010d), but this indicator may be overestimated for the region³⁸. Although the proportion of cesarean deliveries in the region (37%) is below the national average (46%; MS, 2010d), this value is above the WHO recommendation (15%), since this intervention carries more risk to the woman and to the baby (Brazil, 2010a). Although the official statistics point to improvements in reproductive health coverage, Ripsa (2008b) warns that these estimates can be overestimated in areas that present insufficient coverage of the information system that records live births.

Table 8. Proportion of live births (%) by number of prenatal consultations in the Brazilian Amazon states (MS, 2010d; IBGE, 2010c).

State	1995			2008			
	None	1 - 6	≥7	None	1-3	4-6	≥7
AC	26	40	34	9	21	39	28
AM	64	10	26	6	19	42	31
AP	19	46	35	8	22	41	27
MA	17	42	41	2	20	52	24
MT	12	47	41	1	5	31	62
PA	45	46	9	3	14	53	28
RO	8	59	32	1	13	44	39
RR	18	49	34	5	20	38	36
TO	6	44	50	1	10	46	42
Amazon	24	43	34	4	16	43	35
Brazil	11	40	50	2	8	32	57

Chart 7. Family planning in the Amazon

Family planning is a woman's right since it directly influences the health and well-being of both the woman and her baby. For this reason, the population needs to have access to information and to contraceptive methods. According to the WHO (2010b), poverty and a lack of education are the chief limiting factors for successful family planning in the world. The absence of planning results in teen pregnancy, unwanted pregnancy, infant mortality, domestic violence, abortion, and other problems. According to the IBGE (2010c), in 2009, the average number of children delivered by a woman from the Amazon is 2.5, diminished in relation to the year 1990 when it was 4; but it continues to be above the Brazilian mean (1.9).

The proportion of teen pregnancy in the region is the highest in the country: 1.5% of the mothers were less than 14 years old and 26% were between 15 and 19 in 2008 (MS, 2010e). In fact, 11% of women between 15 and 17 in the region had already had a child in 2008, while the Brazilian mean was 6% (IBGE, 2008b). According to IBGE (2010c), the most educated women have fewer children and become mothers later in life. The mortality of teen mothers is responsible for 16% of all maternal deaths (Brazil, 2010a). In 2007, 18.5% of mothers in the Amazon were raising their children without a partner, versus the Brazilian average of 17.4% (IBGE, 2008b). These indicators reveal that the Amazon family has greater vulnerability than the national average.

GOAL 5 – IMPROVE MATERNAL HEALTH



Target 7: Reduce by 75%, between 1990 and 2015, the rate of maternal mortality.

- **Brazilian target for 2015:** 35 deaths/100,000 live births.³⁹
- **Amazon in 2008:** 70 deaths/100,000 live births.
- **Evaluation:** There was no improvement in this indicator; if this trend is maintained, the target for the Amazon will not be fulfilled by 2015. The only positive exception is Acre, where the target was completed in 2008. However, the state should strive to maintain this rate.



Target 8: Guarantee universal access to reproductive health.

- **Evaluation:** The access of the population to prenatal consultations and specialized professionals during childbirth increased, but still is not universal in the Amazon. There is a disparity between urban and rural populations. Furthermore, there is evidence that the quality of attention must be improved.

Combat HIV/AIDS, malaria and other diseases

AIDS and tuberculosis are the principal causes of deaths by infection in the world. In 2008, 33.4 million persons were living with the HIV virus (70% in Africa) and 2 million persons died from AIDS (UN, 2010a). However, recent epidemiological data indicate that the propagation of AIDS is stabilizing in most regions of the planet (UN, 2010a). The global number of new cases fell from 3.5 million in 1996 to 2.7 million in 2008. In Brazil, it is estimated that 630 thousand persons live with HIV/AIDS and that the incidence rate has remained stable since the year 2000 (Brazil, 2010a). Brazil was a pioneer in guaranteeing universal free access to antiretroviral therapy in the public health network, which resulted in significant increases in survival and quality of life among diagnosed patients (Brazil, 2010a). Official reports indicate that the north of the country is the region where AIDS has grown the most (MS, 2010f). One of the principal factors is the high rate of vertical transmission, in other words, when the baby is contaminated during gestation. According to the Joint United Nations Programme on HIV/AIDS (Unaids), this reflects the inability of state and local governments to create strategies for combating and preventing the disease, given that in other regions of the country the disease is stabilized.

In turn, tuberculosis presents a global incidence of 164 cases per 100 thousand persons. In 2008, 9.4 million new cases were diagnosed in the world and 1.8 million deaths were registered; half of the victims were also carriers of the AIDS virus (UN, 2010a). In the world, diminution of the incidence of tuberculosis has been slow (UN, 2010a). In Brazil, the registered incidence has dropped since 2004. However, the country ranks 18th globally in the number of tuberculosis cases, with a reported average of 85 thousand new cases per year (Brazil, 2010a).

Malaria is another important infectious disease in Brazil and in the world as a whole. According to the UN (2010), half of the world population is at risk for contracting malaria. In 2008, it is estimated that there were 243 million new cases and 863 thousand deaths from malaria, with 89% of the deaths occurring in Africa. In the Amazon, the region responsible for almost all of Brazil's malaria cases, there was a reduction in recent years not only in the number of cases but also deaths (Brazil, 2010a). Furthermore, other infectious diseases such as leishmaniasis and dengue are important in the Amazon. For this reason, to evaluate MDG 6, we utilize the incidence rate of these five diseases: (i) AIDS; (ii) malaria; (iii) tuberculosis; (iv) leishmaniasis; and (iv) dengue.⁴⁰

➡ INCIDENCE RATE OF AIDS RISES

The incidence of AIDS increased exponentially between 1990 and 2008 in the Amazon (Figure 27 and 28), while the Brazilian rate showed signs of reduction. The regional rate jumped from 1.2 to 17 cases per 100 thousand inhabitants.⁴¹ In 2008, the incidence of AIDS in the Amazon almost reached the Brazilian national rate (18 cases per 100 thousand inhabitants). Roraima and Amazonas were the states with the highest AIDS rates in 2008 with, respectively, 32 and 26 cases registered per 100 thousand inhabitants. In that year, Acre presented the lowest rate of the disease (8). Official mortality data (MS, 2010c) indicate that 9% of the AIDS deaths in Brazil in 2008 occurred in the Amazon region, that is, 951 fatal cases of the disease. This indicates a rate of four deaths per 100 thousand inhabitants, a rate below the Brazilian mean (six deaths per 100

inhabitants). Pará is the state where the highest number of AIDS deaths was registered in 2006 (300 deaths).

In 2008, the cities with the greatest number of registered AIDS cases in the Amazon were Manaus (755 new cases registered), Belém (542), São Luís (323), Cuiabá (163), Porto Velho (159) and Boa Vista (117). But the municipal distribution of the AIDS rate in the Amazon in that year (Figure 29) contained only one state capital at the top of the list (Boa Vista, with 48 cases per 100 thousand inhabitants). Of the ten cities with the highest rates of the disease, five were in Mato Grosso (Araguainha, Indaiavai, Juruelá, Ponte Branca and Acorizal), three in Tocantins (Luzinópolis, Aliança do Tocantins and Aguiarnópolis), one in Amapá (Oiapoque) and one in Maranhão (Porto Rico do Maranhão).

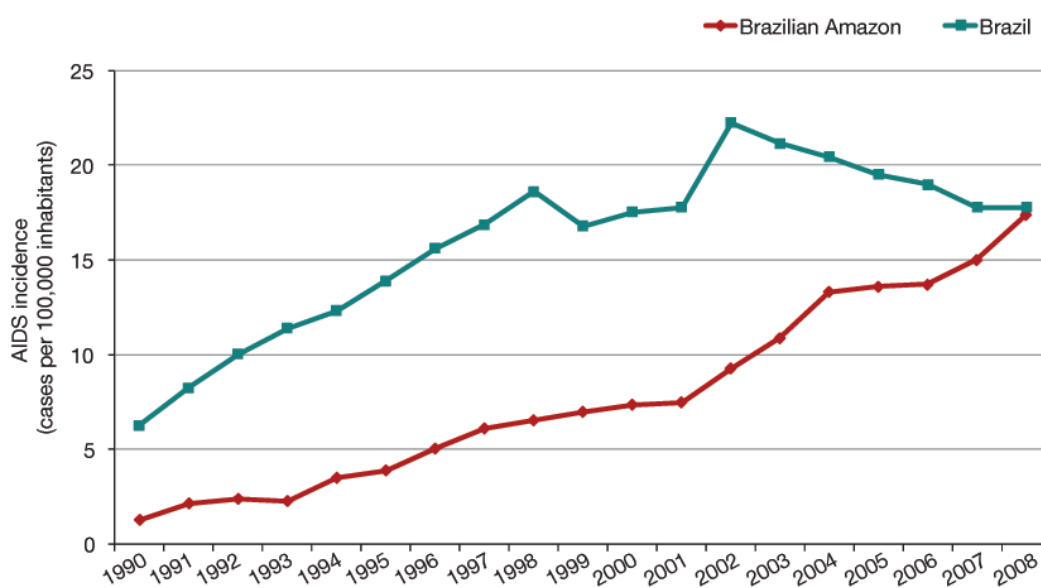


Figure 27. Evolution of AIDS incidence in the Brazilian Amazon from 1990 to 2008 (MS, 2010g).

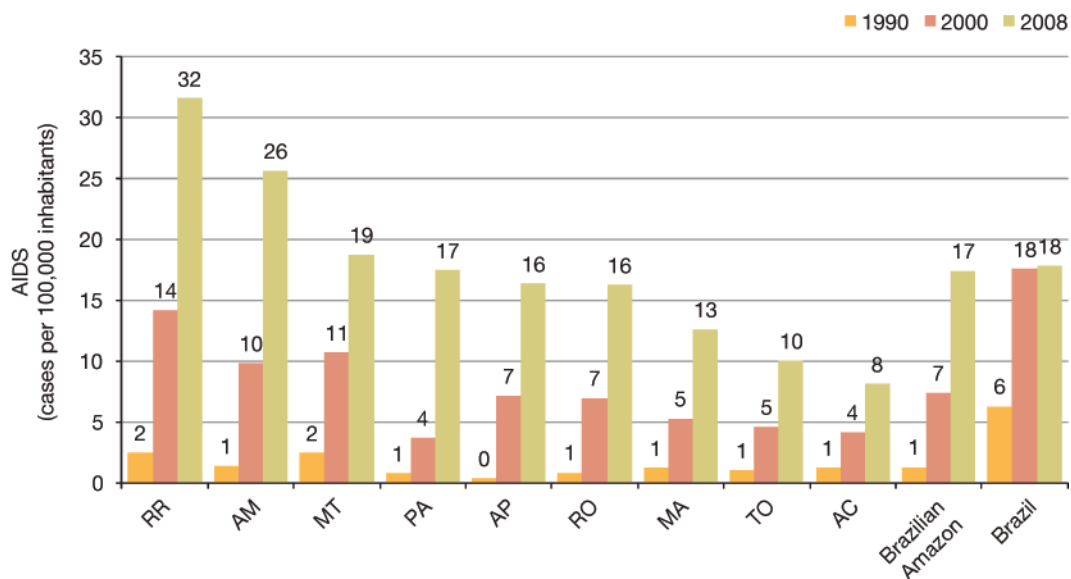


Figure 28. AIDS rates in the Brazilian Amazon states in 1990, 2000 and 2008 (MS, 2010g).

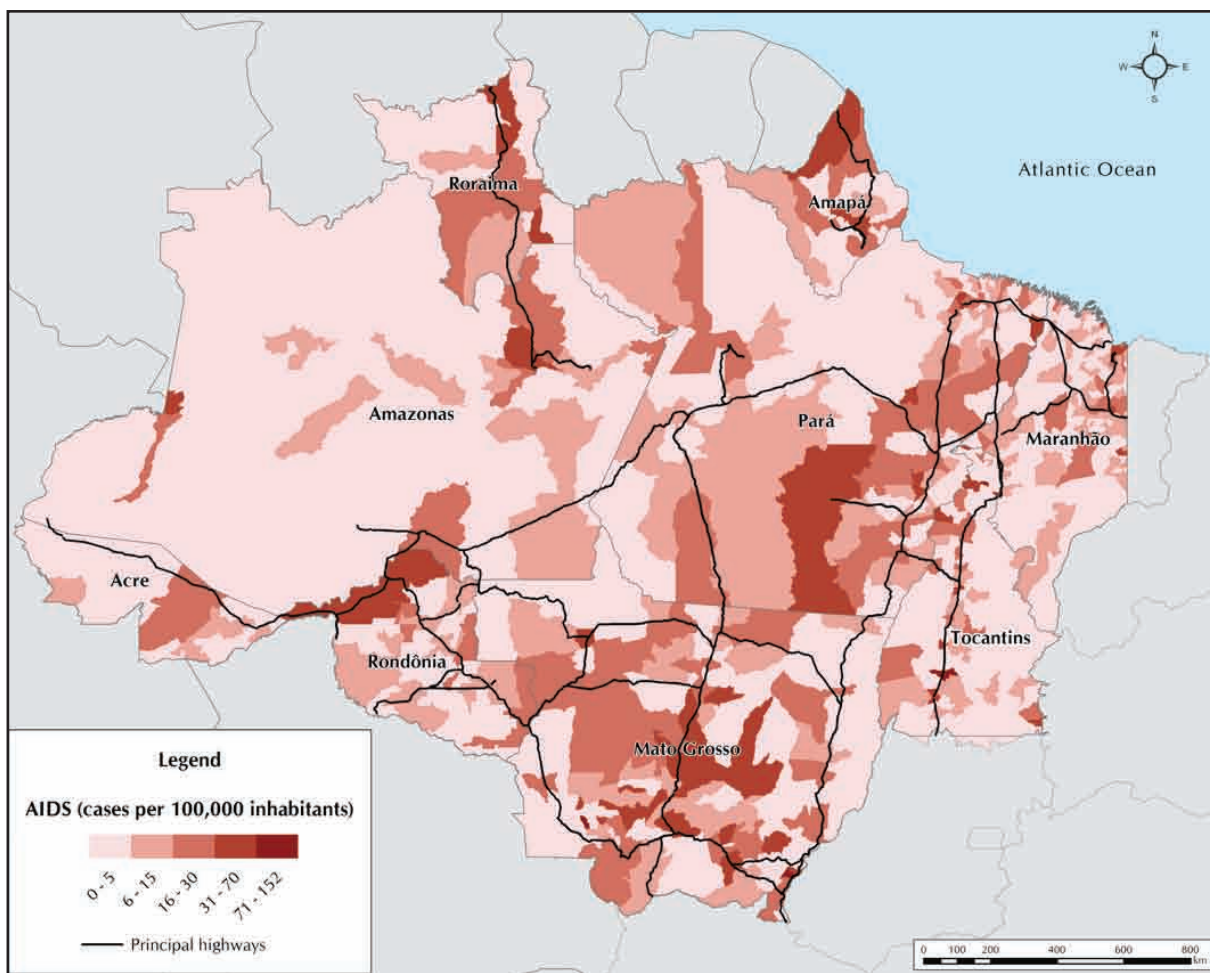


Figure 29. AIDS cases in the Brazilian Amazon municipalities in 2008 (MS, 2010h).

➔ MALARIA FALLS, BUT REMAINS ELEVATED

The Amazon accounts for more than 99% of the malaria cases in Brazil. In 2009 more than 306 thousand new cases were registered in the region, which represents a decline in relation to prior years (Figure 30). In fact, it was the lowest number of cases registered since 1990. The states that registered the most malaria cases in 2009 were Pará (99.5 thousand cases) and Amazonas (98.9 thousand cases), while Tocantins reported the fewest new cases (128).⁴²

In turn, the incidence rate of malaria fell from 3.3 thousand cases per 100 thousand inhabitants in 1990 to 1.2 thousand cases in 2009 (Figure 31). In relation to 1990, the malaria incidence fell in all the states except Amazonas and Acre, where the rates rose 109% and 10%, respectively. In 2009, the states with the highest incidences of the disease were Acre (3.9 thousand cases per 100 thousand inhabitants), Roraima (3.6 thousand cases) and Amazonas

(2.9 thousand cases). The great fluctuation in the number of cases and in the incidence rate of malaria in the Amazon in the last twenty years indicates that this disease is still far from being controlled in the region. Data on mortality (MS, 2010c) indicate 93 deaths caused by malaria in Brazil in 2007, of which 85% were registered in the Amazon.

In 2009, 24 cities in the Amazon had a malaria incidence higher than 100 cases per 1 thousand inhabitants (Figure 32). Of the 10 cities with the highest malaria rates, three were in Amazonas (Atalaia do Norte, Ipixuna and Alvarães), two in Pará (Anajas and Novo Progresso), two in Amapá (Oiapoque and Serra do Navio), two in Acre (Mâncio Lima and Cruzeiro do Sul) and one in Roraima (Canta). The areas of *cerrado* vegetation and old deforestation borders present the lowest intensity of the disease.

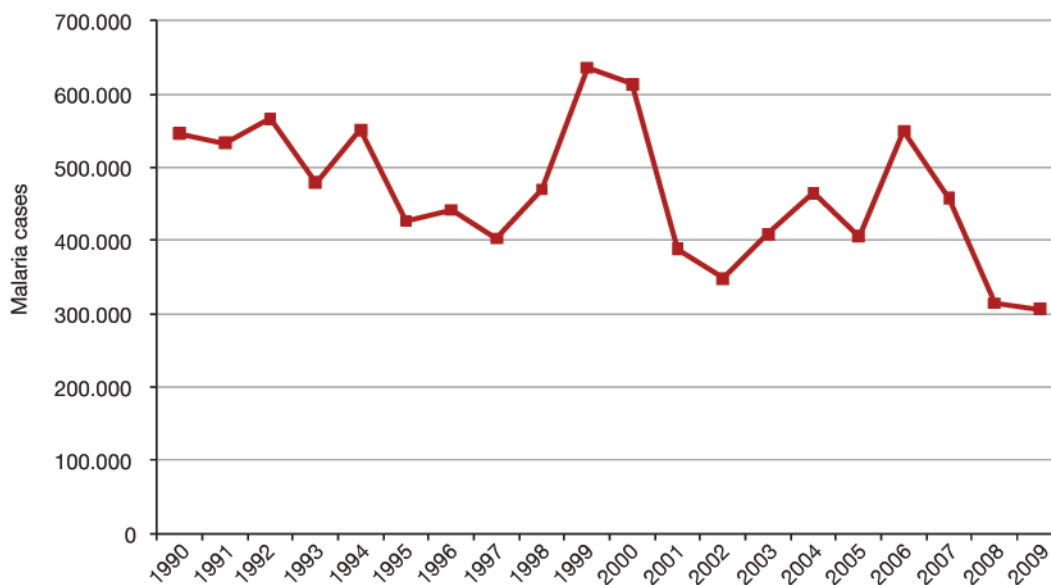


Figure 30. Malaria cases in the Brazilian Amazon from 1990 to 2009 (MS, 2010i).

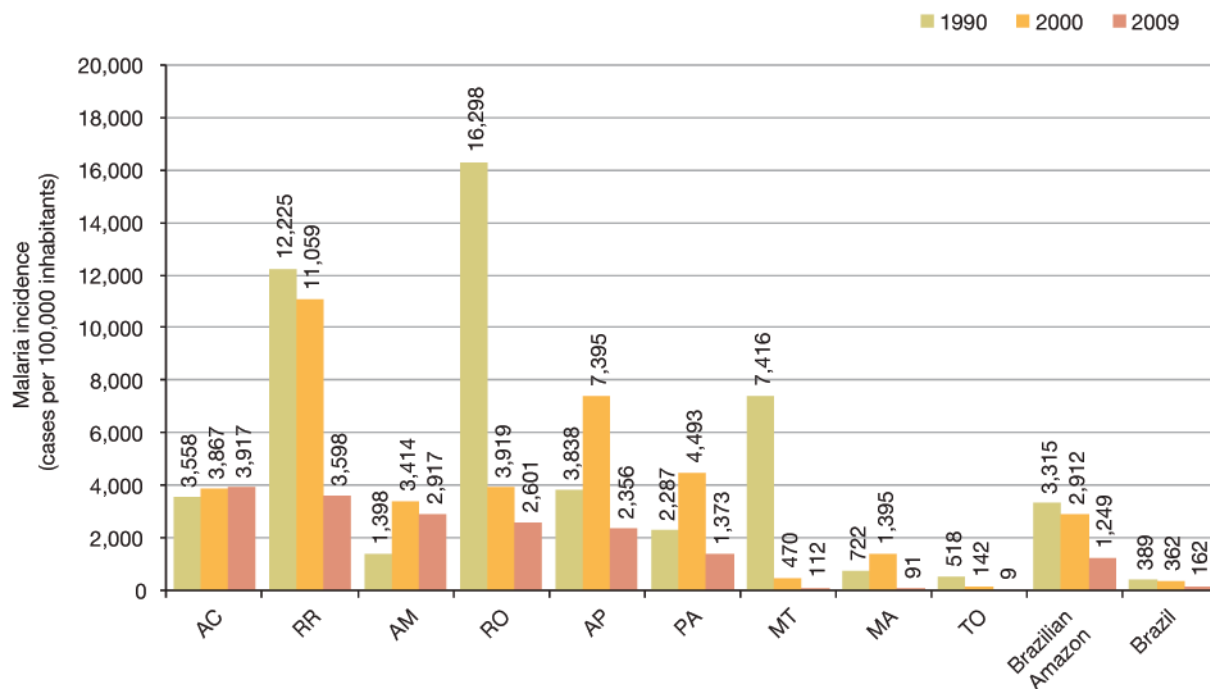


Figure 31. Malaria rates in the Brazilian Amazon states in 1990, 2000 and 2009 (MS, 2010i).

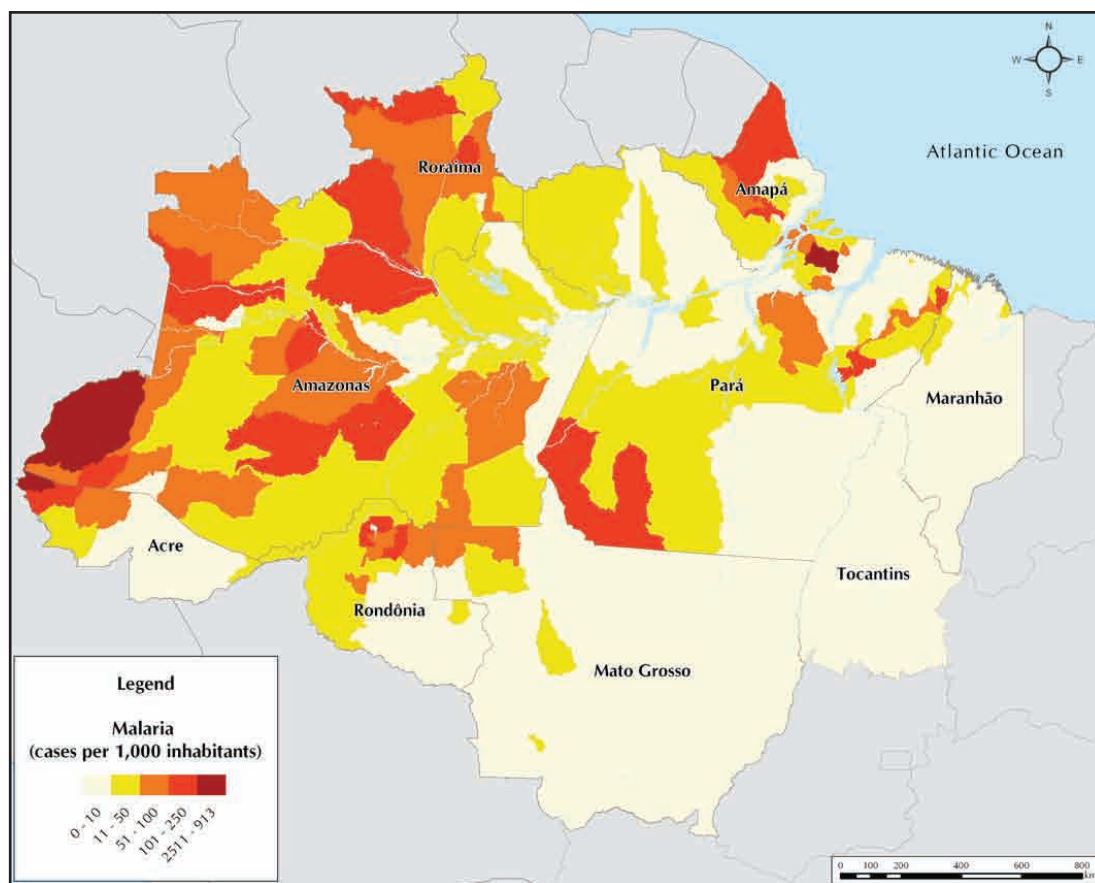


Figure 32. Malaria (number of cases per 1 thousand inhabitants) in the Brazilian Amazon municipalities in 2009 (MS, 2010j).

➔ TUBERCULOSIS AND LEISHMANIASIS REMAIN ELEVATED

The incidence rate of tuberculosis fell 47% in the Amazon between 1990 and 2007 (Figure 33), dropping from 73 to 38 cases per 100 thousand inhabitants, a value similar to the Brazilian national average. All the states recorded declines in this disease's incidence in this period. In 2007, Amazonas and Pará were the states that registered the highest tuberculosis incidences, 67 and 46 cases per 100 thousand inhabitants, respectively (Figure 34). Tocantins was the state with the lowest incidence (16 cases). In 2007 592 deaths due to tuberculosis were registered in the Amazon (13% of Brazilian deaths from this disease); Pará and Maranhão registered the greatest numbers of tuberculosis fatalities in that year, 169 and 159 deaths, respectively, (MS, 2010c).

The leishmaniasis incidence rate stayed stable at 74 cases per 100 thousand inhabitants in the Amazon region between 1990 and 2007 (Figure 33). This value is much higher than the Brazilian mean (11 cases per 100 thousand inhabitants), given that this disease mainly affects forested areas. Among the Amazon states, Acre and Amapá presented increases in the incidence of the disease in this period, while the others registered declines. In 2007, Acre and Amapá were the states that showed the highest leishmaniasis incidences, 129 and 104 cases per 100 thousand inhabitants, respectively (Figure 35). Tocantins and Maranhão recorded the lowest incidences, 36 and 38, respectively. In 2007 alone 305 deaths from leishmaniasis were registered in Brazil, of which 85 occurred in the Amazon (MS, 2010g).

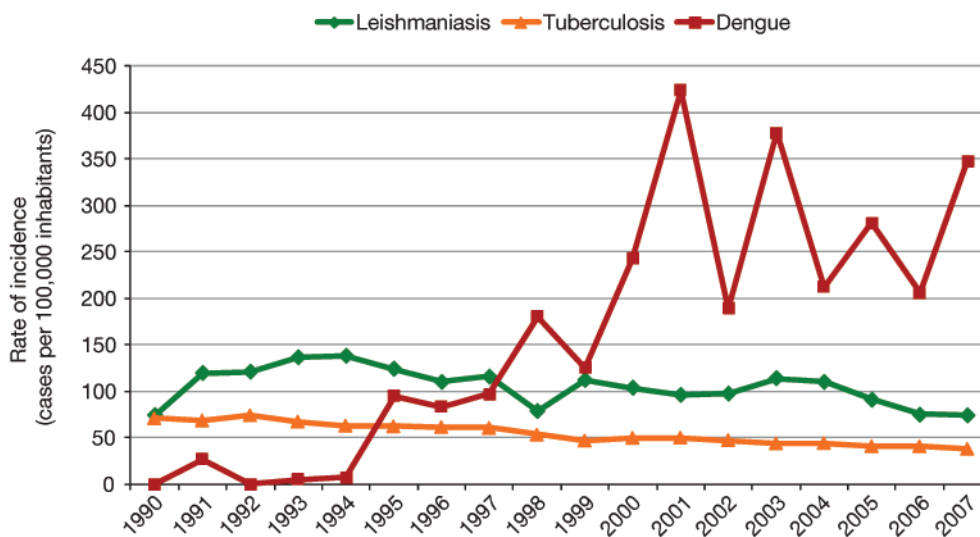


Figure 33. Tuberculosis, leishmaniasis and dengue rates in the Brazilian Amazon from 1990 to 2007 (MS, 2010g).

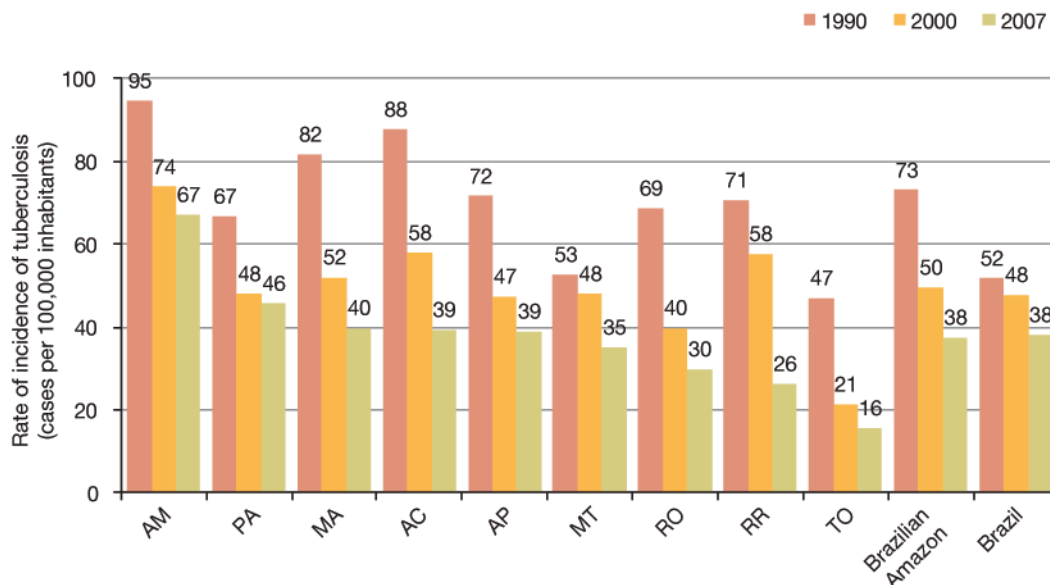


Figure 34. Tuberculosis rates in the Brazilian Amazon states in 1990, 2000 and 2007 (MS, 2010g).

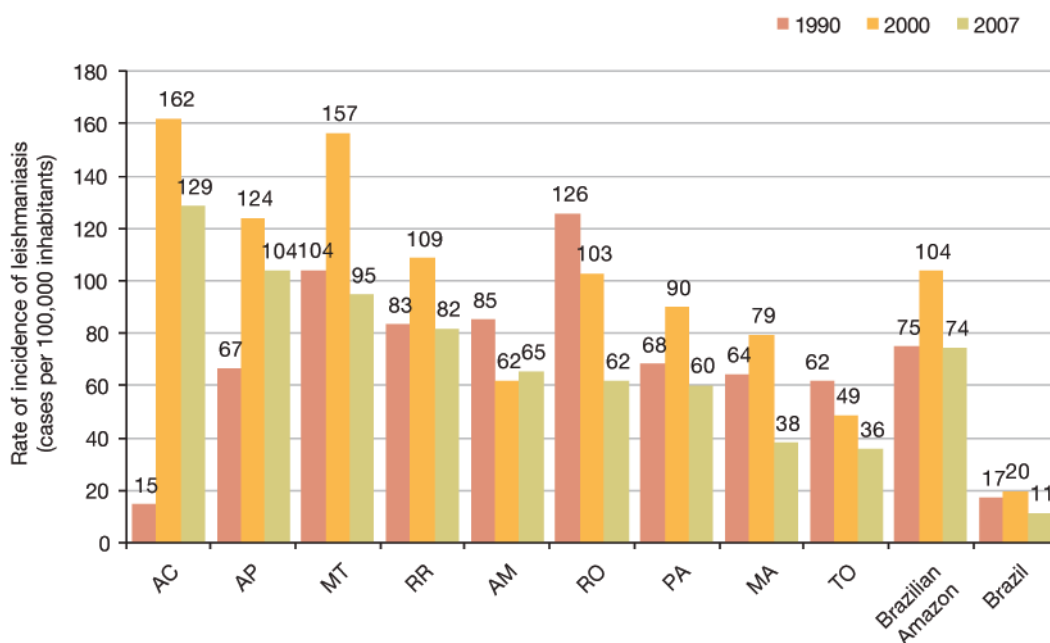


Figure 35. Leishmaniasis rates in the Brazilian Amazon states in 1990, 2000 and 2007 (MS, 2010g).

➔ DENGUE JUMPS

The incidence rate of dengue rose 43% in the Amazon between 2000 and 2007, increasing from 242 to 347 cases per 100 thousand inhabitants (Figure 33). In Brazil as a whole, the dengue rate jumped even more dramatically in this period (316%). Almost all the states of the region presented an augmented rate of dengue, with the exceptions of Roraima, Acre and Amazonas. In 2007,

Tocantins, Mato Grosso and Amapá were the states that registered the highest dengue incidence rates: 952, 565 and 562 cases per 100 thousand inhabitants, respectively (Figure 36). Acre and Amazonas were the states with the lowest incidences, 75 and 62, respectively. In 2007, 137 deaths from dengue were registered throughout Brazil, of which 37 occurred in the Amazon (MS, 2010c).

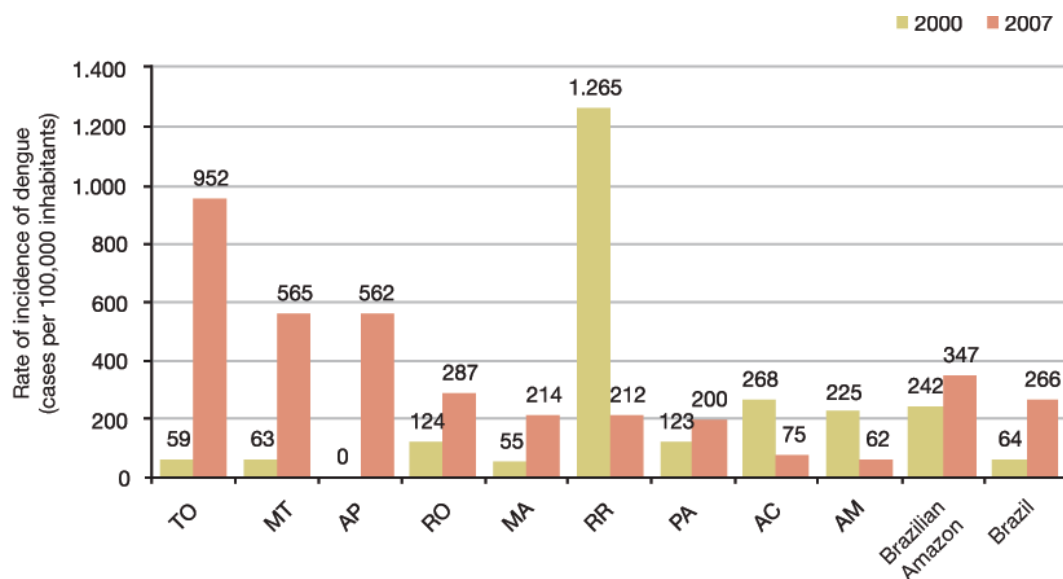


Figure 36. Dengue rates in the Brazilian Amazon states in 1990, 2000 and 2007 (MS, 2010g).

Chart 8. The Brazilian Amazon is the world leader in leprosy

Brazil is the world leader in leprosy, an affliction caused by the bacterium *Mycobacterium leprae*. In 2007, more than 41 thousand new cases were registered in the country. Of these cases, 40% were registered in the Amazon. Pará and Maranhão are the leaders among the Brazilian states, with 4,509 and 4,403 new cases, respectively, only in 2007. The rate of the disease for every 10 thousand inhabitants was 5.1 in the Amazon in 2007, while in the other regions of Brazil it varied from 0.6 in the south to 2.7 in the northeast (except Maranhão). Leprosy is a contagious disease, but can be cured if it is detected early.

Chart 9. Public health in the Brazilian Amazon

In 2007, there was less than one doctor (physician) for every thousand inhabitants in the Amazon, while the Brazilian average was almost two physicians per thousand inhabitants (MS, 2010l). Maranhão is the Brazilian state with the lowest proportion of physicians, 0.59 per thousand inhabitants. Although high salaries are being offered, the region does not attract professionals on account of its geographic remoteness and lack of even minimal resources (Amigos da Terra Brasil, 2010). To resolve this problem, the MS intends to send the National Health Effort to the region, with a group of physicians and health professionals to work at the remotest points in the country (Amigos da Terra Brasil, 2010). There was a public selection of candidates, and the proposal provides a rotation of professionals among the participating cities. In addition to attracting health professionals, large investments must be made to create good conditions in which they can perform their functions. Despite the historical problems of access to a quality public health system in the region, the life expectancy of the Amazon population rose by 4 years between 1991 and 2007, increasing from 66 to 71 years (a value near the Brazilian average of 72 years). In 2007, Maranhão had the lowest life expectancy in the region (67 years) while Mato Grosso had the highest (73).

GOAL 6 – COMBAT HIV/AIDS, MALARIA AND OTHER DISEASES



Target 9: Halt by 2015 and begin to reduce the spread of HIV/AIDS.

- **Amazon in 2008:** 17 cases of AIDS per 100 thousand inhabitants.
- **Evaluation:** The target will not be reached, since the propagation rate of this disease has increased in the region.



Target 10: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it.

- **Evaluation:** The target was not evaluated due to the unavailability of regional data. Nevertheless, it is important to emphasize that Brazil was a pioneer in guaranteeing universal free access to antiretroviral therapy in the public health network.



Target 11: Halt by 2015 and begin to reverse the incidence of malaria and other major diseases.

- **Amazon:** More than 1.2 thousand cases of malaria per 100 thousand inhabitants in 2009. Furthermore, high incidence rates of tuberculosis (38 cases per 100 thousand inhabitants), leishmaniasis (74) and dengue (347).
- **Evaluation:** Although the incidences of malaria and tuberculosis had diminished between 1990 and 2004, these diseases still persist at elevated rates. Furthermore, the region has very high incidences of dengue and tegumentary leishmaniasis.

SPECIAL SECTION.

Peace

One great objective that has been lacking for the Millennium: World Peace. In the Amazon, the advance of the deforestation frontier is a violent process. Indigenous peoples, traditional populations and small producers have been historically the greatest victims in this process. There are conflicts for land and for natural resources, illegal invasion of public lands, rural assassinations and high rates of urban violence. Furthermore, hundreds of cases of working under conditions analogous to slavery are being registered annually. In other words, a process of degradation of natural resources and human beings is underway.

Some numbers can illustrate the problem of rural violence in the Amazon region (Figure 37). According to the CPT (2010) 2,118 conflicts over land were registered between 2003 and 2009 (32% of these in Pará). In 2009 alone,

319 conflicts were reported. In this same period, 179 persons were assassinated in the field, victims of such conflicts. Again, Pará ranks first in the number of deaths in rural areas (64%), followed by Mato Grosso (13%) and Rondônia (9%). Furthermore, 80 indigenous persons were assassinated in the Amazon between 2004 and 2009, principally in Maranhão (25%) and Roraima (14%) (Cimi, 2010). Labor under conditions analogous to slavery also persists in rural areas of the Amazon. More than 1,400 cases of working in these conditions were registered between 2003 and 2009 (60% of these in Pará) and more than 15 thousand persons were liberated from forced labor in the Amazon. The illegal extraction of timber, the production of vegetal charcoal and ranching are the activities that contribute the most to this problem in the Amazon (UN, 2010b).

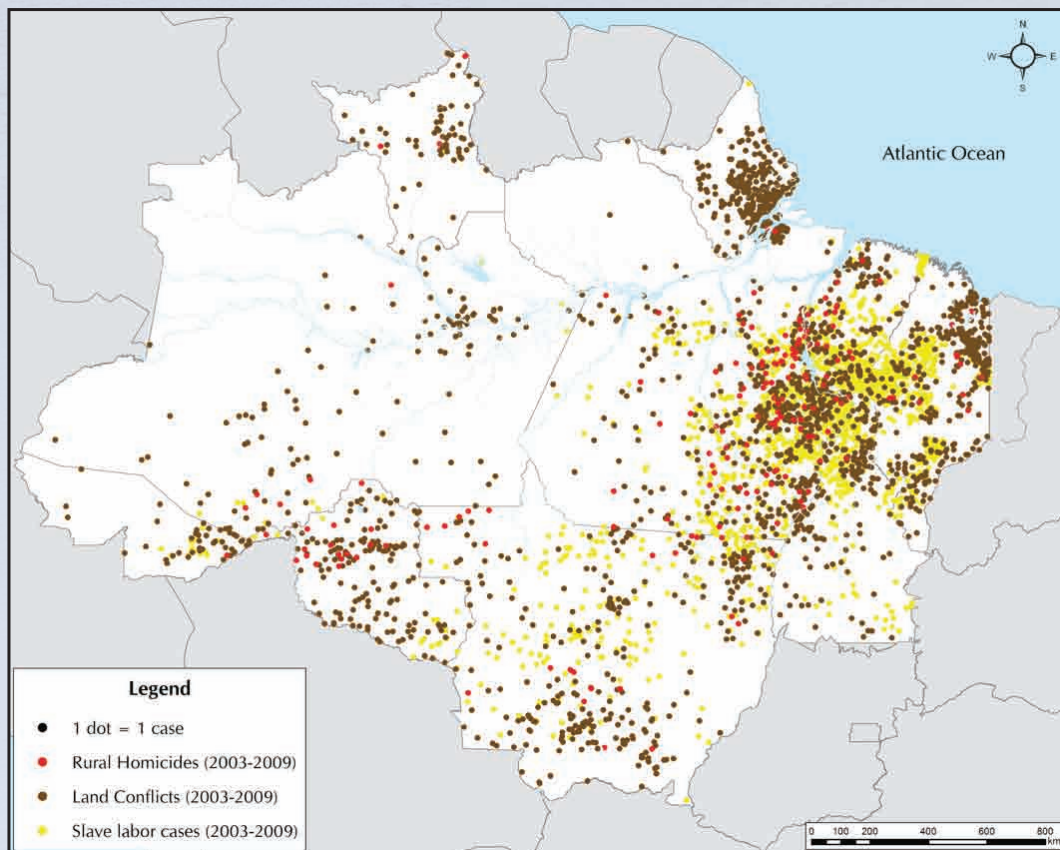


Figure 37. Violence in rural areas in the Brazilian Amazon from 2003 to 2009 (CPT, 2010).

In 2003 the National Plan for Eradicating Slave Labor was established by the MTE; also enacted was a “Dirty List”, that is, a registry of businesses that contract slave manual labor (Portal 540, of 15 October, 2004). In 2005 the *National Pact for Eradication of Slave Labor* was elaborated, a partnership of the Ethos Institute, Social Observatory Institute, Reporter Brazil and the ILO, with the aim of establishing commercial restrictions on all parties identified on the “Dirty List”. These initiatives contribute to diminishing such illegal practices in Brazil. Nevertheless, current data show that slave labor remains far from being eradicated in the country.

Violence is not exclusive to rural areas. Many Amazon cities register high homicide rates (Figure 38). In 2008 alone, 6,815 persons were murdered in the region (14% of Brazilian assassinations for that year), in other words, a rate of 25 homicides per 100 thousand inhabit-

ants (a rate similar to the Brazilian average; MS, 2010j). Pará and Mato Grosso registered the highest homicide rates, 39 and 31 cases per 100 thousand inhabitants, respectively (MS, 2010m).

Belém and Manaus are among the top ten cities in number of homicide cases in Brazil; only in 2008 they reported 734 and 614 homicides, respectively (MS, 2010m). Nevertheless, the homicide rates of these municipalities are not among the highest in the region (numbers 46 and 108 in the regional ranking). Thirty-five percent of Amazon municipalities present a homicide rate above that of the city of Rio de Janeiro (19 homicides per 100 thousand inhabitants). Unfortunately, Brazil has not set specific national targets to reduce homicides.⁴³ There is a long-term national campaign for disarmament with the objective of reducing the murder rate in the country (MJ, 2010), but it is a voluntary initiative.

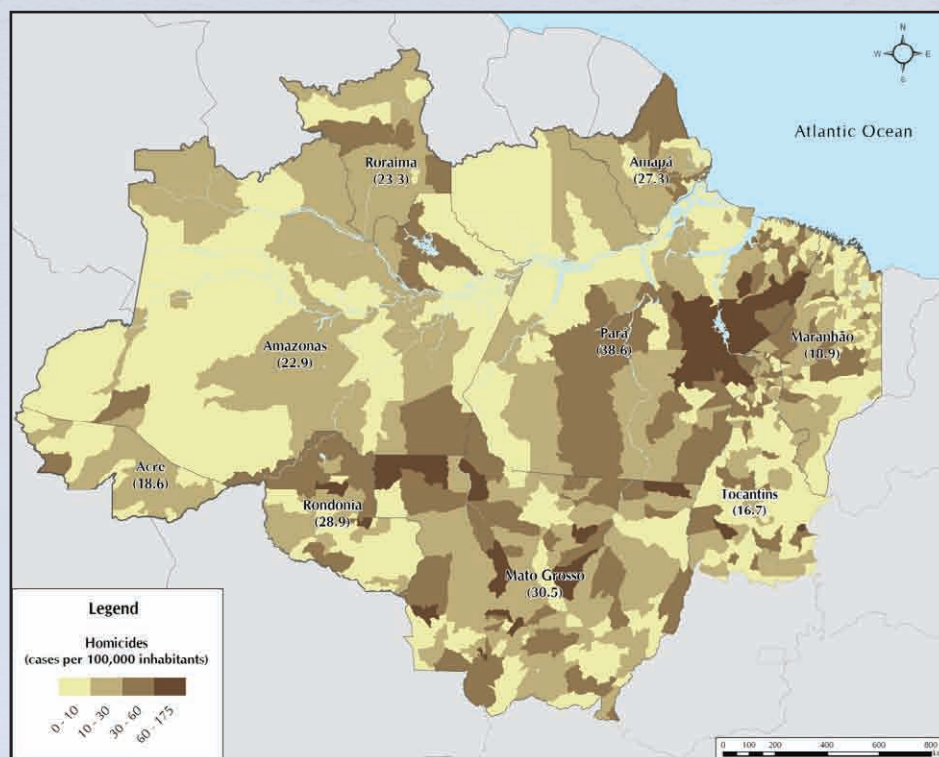


Figure 38. Homicide rates in the Brazilian Amazon municipalities in 2008 (MS, 2010m).

Ensure environmental sustainability

Degradation of ecosystems, pollution of the air and waters, unchecked emission of carbon dioxide (CO₂) into the atmosphere, contamination of the soil and reduction of its fertility, loss of biodiversity and exhaustion of fishing resources are some of the environmental problems resulting from the current system of production and consumption on the planet. Lack of water affects almost 20% of the world population (UN, 2010a). For this reason, the General Assembly of the UN declared in 2010 that access to potable water and to basic sanitation are essential human rights.

The milieu of urban life and the current pattern of consumption induce a poor understanding of the true connection between humans and nature. To illustrate this connection's importance to decision-makers and to try to insert it into the market economic system, the term **Ecosystem Service** was created – to refer

to the direct and indirect benefits that persons receive from ecosystems (MEA, 2005). These services are divided into four categories: **provisions** (fresh water, foods, fibers, wood and other goods), **regulation** (of the climate, of floods and droughts, of diseases, pollination and others), **cultural** (recreational, spiritual and educational benefits and other intangibles) and the **supporting of life** (photosynthesis, formation of soils, primary production, etc.) (MEA, 2005). These services are directly related to human well-being, since they affect basic material necessities: security and peace; health and social and cultural relations. Unfortunately, in the last fifty years, world ecosystems and their services have been degraded more rapidly than in any other period of human history. To evaluate this MDG, we utilize three indicators: (i) rate of deforestation; (ii) creation of protected areas; and (iii) access to adequate basic sanitation.

➔ DEFORESTATION FALLS IN THE BRAZILIAN AMAZON

In 2009, the forested area that was deforested in the Amazon was 7,464 square kilometers, which represents a drop of 42% in relation to the previous year. In 2010, deforestation has fallen again, presenting its lowest number in history: 6,451 square kilometers. This confirms a downward trend in the area starting in 2005 (Figure 39). However, the accumulated deforestation in the region reached about 18% in 2010 (Figure 40). In the last two years, Pará registered the high-

est deforestation rates (Table 9). Prior to this, Mato Grosso had been the regional leader in deforestation since 1992.

Deforestation is generally preceded by burning and/or predatory logging. Hot pixels (fires) in the Amazon are monitored annually by Inpe, and the annual curve of such fires is correlated with deforestation (Figure 39). Preliminary data from 2010 indicate more than 40 thousand hot pixels in the Amazon through the middle of November (Inpe, 2010b).⁴⁴

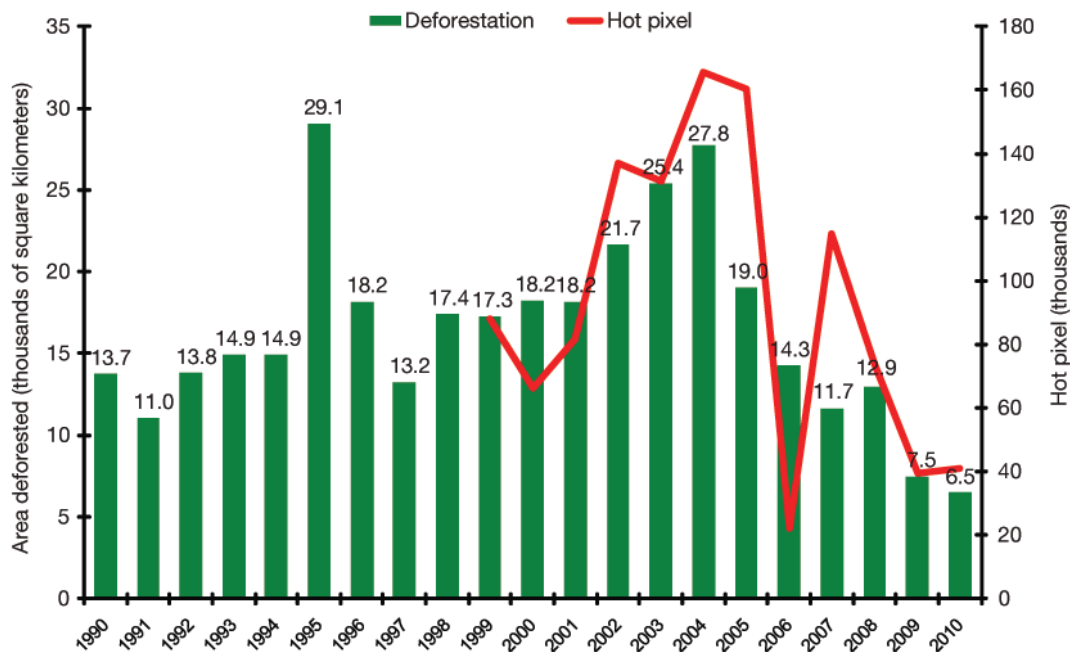


Figure 39. Deforestation rate from 1990 to 2010 and Hot Pixels from 1999 to 2010 in the Brazilian Amazon (Inpe, 2010a; Inpe, 2010b).⁴⁵

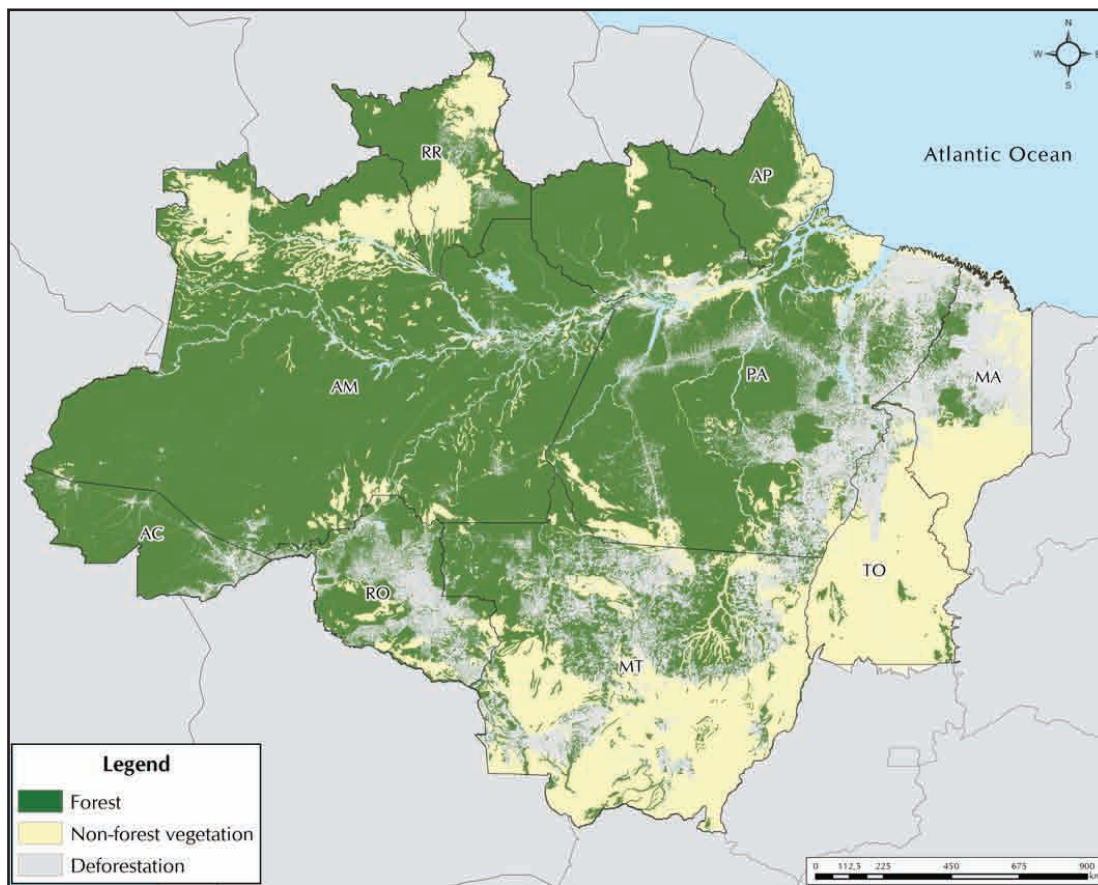


Figure 40. Vegetation coverage and deforestation in the Brazilian Amazon (Inpe, 2010a).

Table 9. Area deforested in the Brazilian Amazon states in 1990, 2000 and 2010 (Inpe, 2010a).

States	Annual deforestation rate (km ² /year)		
	1990	2000	2010
AC	550	547	273
AM	520	612	474
AP	250	-	-
MA	1,100	1,065	679
MT	4,020	6,369	828
PA	4,890	6,671	3,710
RO	1,670	2,465	427
RR	150	253	-
TO	580	244	60
Amazon	13,730	18,226	6,451

Chart 10. The end of deforestation in the Amazon

Deforestation is the principal environmental problem in Brazil. In 2007, nine NGOs proposed a pact to place greater value on the forest and achieve zero deforestation by 2015 (“Deforestation Zero”). This pact is presented in a document that contains the targets of reducing annual deforestation and suggestions for financial mechanisms to compensate for ending deforestation (ISA *et al.*, 2007). In an article from the journal *Science*, researchers affirm that it is not only possible but also economically viable to put an end to deforestation (Nepstad *et al.*, 2009). For this purpose, they suggest that the mechanisms of financial compensation, such as the REDD initiative, must inject from 7 billion to 18 billion dollars per year into the region’s economy until 2020. This would permit rural landowners, agrarian-reform settlers and traditional peoples to keep the forest standing. Furthermore, efforts toward governance and environmental enforcement by the Brazilian government must be strengthened to hamper illegal activities. In 2008, the government created the Amazon Fund (decree nº 6.527/2008) to capture foreign donations to provide investments in actions for preventing, monitoring and combating deforestation, as well as for promoting conservation and sustainable use of the forests in the Amazon biome (Brazil, 2008). In 2009, during the 15th UN Conference on Climate Change (COP-15 in Copenhagen, Denmark), the Brazilian government committed itself to the voluntary target of reducing Amazon deforestation by 80% by 2020, in comparison to the deforestation level of 2005 (19 thousand square kilometers; Inpe, 2006). This commitment is linked to the Brazilian proposal to voluntarily reduce GHG emissions (Brazil, 2010b).

**Chart 11. CO₂ Emissions in the Amazon**

Globally, Brazil is among the largest emitters of carbon dioxide (CO₂), the principal greenhouse gas (GHG) that causes global warming. According to the MCT (2010), Brazil's emissions increased by about 60% between 1990 and 2005, rising from 1.4 to 2.2 gigatons of CO₂. The great villain in national emissions is deforestation, since Brazil possesses an energy grid considered reasonably "clean" (founded on hydroelectric power plants). It is estimated that changes in the use of land and forests correspond to 61% of Brazil's emissions and that the net emissions of this sector totaled 1.3 gigatons of CO₂ in 2005, with the Amazon biome being primarily responsible (65%) (MCT, 2010).

In 2009, during the COP-15, the Brazilian government committed itself to diminishing the country's GHG emissions by between 36.1% and 38.9% by 2020 (Brazil, 2010b). For this objective, diverse targets and commitments were established for the different sectors (Brazil, 2010c). Among the targets is an 80% reduction of deforestation in the Amazon region.

Chart 12. REDD+

By Brenda Brito and Moira Adams (Imazon)

Deforestation and forest degradation are responsible for between 17% and 20% of global greenhouse gas emissions (GHG). But the United Nations Framework Convention on Climate Change (the principal international treaty for reducing world emissions of GHG) contains no incentive mechanism to reduce this type of emissions, especially in developing countries with a large area of forest, such as Brazil.

It is in this context that discussions on REDD, currently called REDD+ (which also includes initiatives for forest conservation, sustainable management and augmentation of stocks of forest carbon) were suggested. This subject began to be discussed with more intensity in 2005, but until 2009 there was no formal decision on how REDD+ would be operated, which countries could receive incentives, what would be the manner of access or how the results would be verified.

Although many operational aspects are still being debated, the initiatives of REDD+ are already observable on the voluntary market of carbon credits, including in Brazil. This market does not involve an obligatory target for reductions and generally is sought by interested businesses to compensate for their GHG emissions. In 2009, there were already at least 13 REDD+ projects under elaboration or already installed in the Brazilian Amazon (Cenamo et al., 2010).

➔ PROTECTED AREAS INCREASE BUT THREATS ALSO GROW

In Brazil, the protected areas are divided into Conservation Units (CUs) and Indigenous Territories (ITs).⁴⁶ The CUs are classified as either wholly protected (Parnas, Rebio, Esec etc.) or under a regimen of sustainable use (Flonas, Resex, RDS etc.). Although there is evidence of illegal deforestation and logging in the Amazon Protected Areas (Ribeiro et al. 2005; Nepstad et al., 2006; Monteiro et al., 2010; Hayashi et al., 2010), they represent the most efficient strategy to conserve the Amazon forest.

The proportion of protected areas increased in the Amazon in recent years from only 8.5%, in 1990 to about 44% (2.2 million square kilometers) in 2010⁴⁷ (Figure 41 and

42). Of this total, 21.7% are ITs and 22.4% are CUs (Figure 41).

Amapá is the most protected state in the Amazon, with 70% of its territory under full protection (Table 10). Although many new protected areas have been created in recent years, there are formal initiatives to reduce some of them in size or in degree of protection. Until July of 2010, 29 areas had been reduced or had become extinct, that is, 49,506 square kilometers removed from legal protection and another 18 (86,538 square kilometers) were being targeted by judicial actions and legislative projects aimed at reduction or extinction (Araujo and Barreto, 2010).

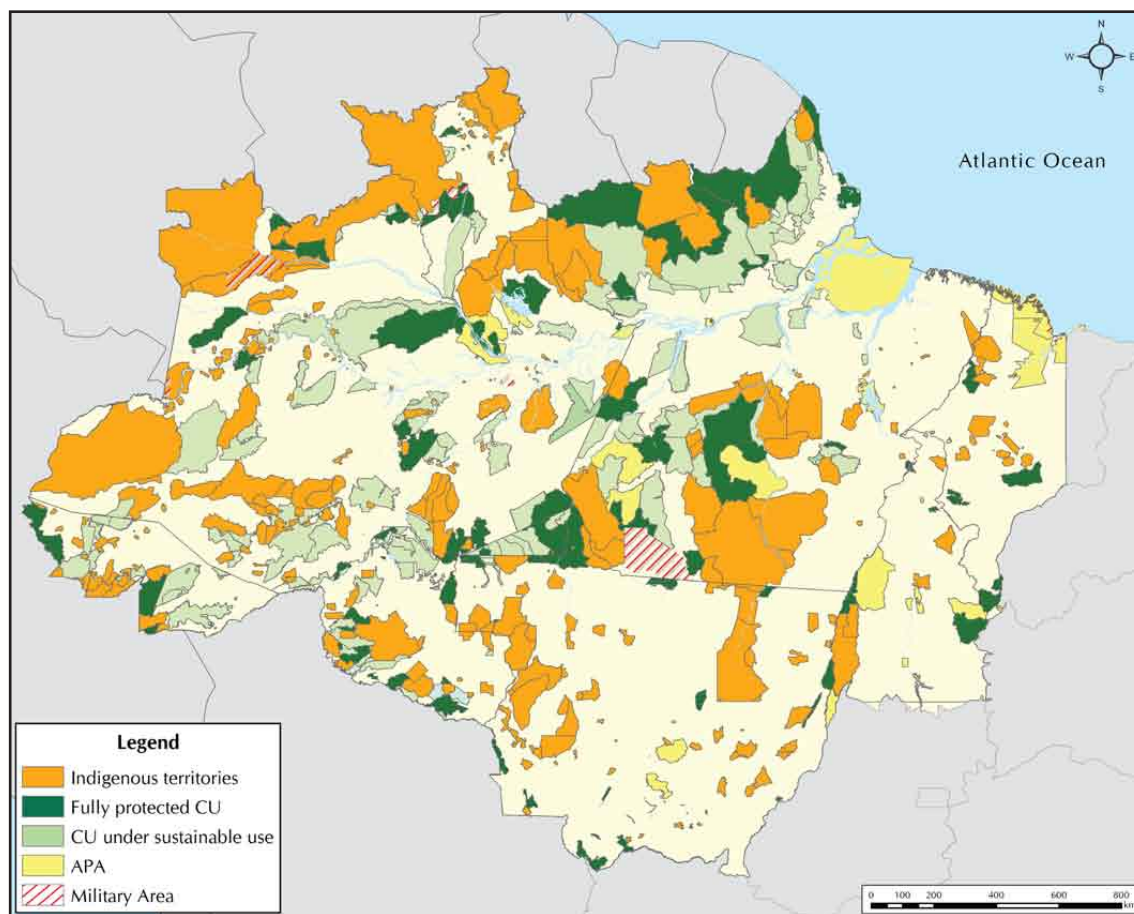


Figure 41. Protected areas in the Brazilian Amazon (Imazon and ISA, in press).

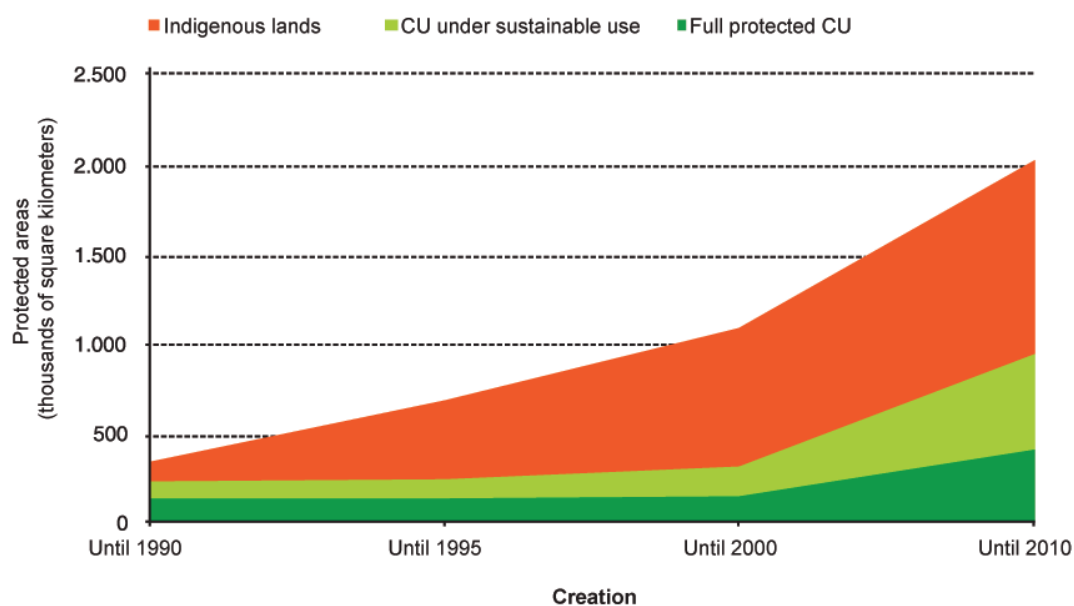


Figure 42. Creation of Protected Areas (except APAs) in the Brazilian Amazon from 1990 to 2010 (adapted from Imazon and ISA, in press).

Table 10. Percentage of protected areas in Brazilian Amazon states in 2010 (Imazon and ISA, in press)¹.

States	Conservation unit		Indigenous territories (%)	Total (%)
	Fully protected (%)	For sustainable use ² (%)		
AC	10.6	23.6	15.9	50.1
AM	7.8	15.8	27.3	50.9
AP	33.3	28.8	8.3	70.4
MA	5.4	12.0	8.7	26.1
MT	3.2	1.3	15.2	19.8
PA	10.1	22.2	22.7	55.0
RO	9.3	12.4	21.0	46.3
RR	4.7	7.3	46.3	58.3
TO	3.7	8.5	9.2	21.4
Amazon	8.0	14.2	21.7	44.1

¹ Includes CU and ITs identified, declared and approved, updated through July of 2010, discounting the overlapping areas. ² Includes APAs. About 3.7% of CU under sustainable use in the Amazon are APAs.

Chart 13. Public policies and sustainable development

The primary target of MDG 7 suggests incorporating the principles of sustainable development into public policies and laws. Many advances have occurred since 1990 in the establishment of environmental policies and laws in Brazil relevant to the Amazon. We highlight the Law of Environmental Crimes (Law nº 9,605/1998), the establishment of the National System of Conservation Units – Snuc (Law nº 9,985/2000) and the Law of Public Forest Management (Law nº 11,284/2006). In 2001, changes were made in the Brazilian Forest Code (Law nº 4,771/1965) augmenting the area of the Legal Reserve in rural properties from 50% to 80% (Interim measure 2,166/1967).

Furthermore, starting in 2007, public policies were created with the objective of curbing deforestation in the Amazon. The first of them was Decree 6,321 (2007) which expresses the principle of sharing the responsibility for deforestation with the municipalities and creates a list of critical municipalities in relation to deforestation. Since then, some institutions have created procedures to hinder the concession of credit for rural producers from these municipalities (Res. 3.545/2008, Central Bank) and restrict the purchase of cattle from areas illegally deforested by retail dealer (IN 1/2008, MMA).

Nevertheless, the last two years were also marked by serious setbacks:

- Federal Law 11,952/2009, which provides for the land tenure regularization of occupation incidents in lands situated in Federal areas of the Amazon, leaves some gaps that may favor illegal occupations and aggravate environmental problems such as deforestation (see more details in Brito and Barreto, 2010).
- A project to alter the Brazilian Forest Code (Law nº 4,771/65) proposed by Deputy Aldo Rebelo and approved in the Special Commission of the Chamber of Deputies represents a threat to the forest and to Brazilian biodiversity, since it provides for a reduction of Legal Reserve areas and of APPs, such as riparian forests and high slope areas.

➔ SANITATION CONTINUES TO BE PRECARIOUS

Access to potable water and to basic sanitation was declared an essential human right by the UN General Assembly in 2010. Finally, the right to potable water and basic sanitation is intrinsically linked to the rights to life, health, food and housing. The precariousness of sanitation services (water supply, sanitary sewer service, collection and final disposal of solid wastes) represents a risk to the health of the

population, especially for the poorest persons. Expanding access to this service is fundamental for improving the quality of life. Furthermore, investments in sanitation reduce public expenditures on health (IBGE, 2010e).

Access to a water supply network remained stable for 66% of the Amazon population between 2001 and 2009 (Table 11). In 2009, 34% of the population did not have

access to water originating from a general supply network (IBGE, 2010f). Sewer coverage rose slightly in the region between 2001 and 2009, passing from 48% to only 51% of private domicile household residents with sewage collection considered adequate, in other words, linked to a network or to a septic tank. In 2009, only 11% of domiciles (or 10% of the population) were connected to a sewage collection network in the region (see Chart 14: the paradox of sanitation). In fact, in 81% of Amazon municipalities there was

no sewage collection network in 2008 (IBGE, 2010g).

Finally, the percentage of the urban population living in households with trash collection service increased by 4% between 2001 and 2009 (IBGE, 2010h). In 2009, 81% of the region's population could count on this service. However, the management of trash in the region was not adequate. Only 68 municipalities (9% of the total) had selective trash collection. The majority of garbage in the region (58%) was deposited in dumps, while 40% was sent to landfills (IBGE, 2010h).

Table 11. Percentage of residents in private domiciles with a general network of running water and sewage collection (linked to a general network and septic tank) in the Brazilian Amazon in 2001 and 2009 (IBGE, 2010f; IBGE, 2010g).

States	Residents in private households (%)							
	Linked to a network Water (general) ¹		Linked to a network Sewage collection		Septic tanks		Other ²	
	2001	2009	2001	2009	2001	2009	2001	2009
AC	56	55	17	21	30	34	53	45
AP	73	69	1	1	55	58	44	41
AM	76	72	6	18	46	43	47	39
MA	54	66	8	10	27	47	65	44
MT	62	75	7	11	31	18	62	71
PA	56	51	5	2	48	57	46	41
RO	42	39	2	4	56	23	42	73
RR	99	87	9	13	75	78	16	9
TO	74	79	2	12	11	16	87	72
Amazon	66	66	6	10	42	41	51	48
Brazil	80	83	43	50	21	20	36	30

¹ Includes domiciles with internal and external plumbing. ² Includes rudimentary septic tanks and other sinkhole forms: ditch, directly to a river, lake or sea, etc.

Chart 14. The paradox of sanitation

Environmental sanitation is fundamental for guaranteeing an adequate quality of life to a population. Despite growing urbanization of Amazon cities, sanitation continues to avoid becoming a political priority in the region. Even the cities that present high economic development do not have good sanitation conditions, mainly in relation to the service of network sewage collection. In Belém, for example, 73% of domiciles are not connected to a collection network (IBGE, 2010c) and the sewer can be observed in the open air in several regions of the city. In the state of Rondônia, the scene of large infrastructure investments in recent years, only 4% of domiciles are linked to a sewage collection network. In Mato Grosso, the state with the least poverty in the region, 67% of sewers run to rudimentary tanks. In general, a sewer that runs to rudimentary tanks can contaminate the groundwater, or be dumped in the open, posing great risks to the population.

Investments in large economic projects in the Amazon region would imply the attraction of immigrants and greater urbanization. Investing in sanitation generates economic benefits of up to 34-fold in public health (WHO via the MDG portal, 2009). Nevertheless, there are many barriers to expanding these services. According to the WSSCC (2005), the principal barriers are: (i) absence of political will to invest in sanitation; (ii) lesser prestige and recognition from society; (iii) weak environmental policies of governmental bodies; and (iv) little or no institutional cooperation. It is urgent that this issue enter the political agenda of the region. Works of infrastructure, without investments in sanitation, are ineffective at increasing the quality of life of the population.

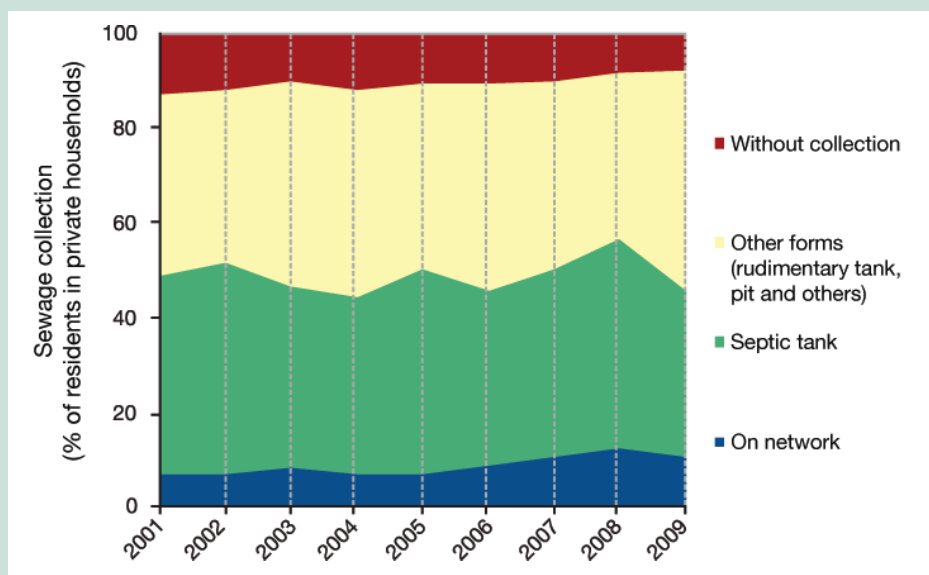


Figure 43. Sewage collection (% of population) in the Brazilian Amazon from 2001 to 2009 (IBGE, 2010g).



GOAL 7 – ENSURE ENVIRONMENTAL SUSTAINABILITY



Target 12: Integrate the principles of sustainable development into national policies and programmes and reverse the loss of environmental resources.

- **Evaluation:** Recent years were marked by advances and setbacks in public policies to promote sustainable development in the Amazon. The fall in deforestation in recent years is one piece of good news, but the loss of forest remains vast while illegal practices persist in the region. Furthermore, **reversing** the loss of natural resources implies the restoration of forests; and this practice is still incipient in the Amazon. Another bit of good news is that 44% of the Amazon region is protected by law. However, many of these areas are threatened formally by the government through attempts to reduce their size or degree of protection by means of illicit practices in their interior such as illegal occupations and deforestation. Brazil approved measures to combat deforestation and assumed international commitments to reduce deforestation by 2020. It is fundamental to monitor whether these steps are indeed being implemented and if the target will be reached.



Target 13: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

- **Evaluation:** This target, not evaluated due to unavailability of data, corresponds to the principal objective of the Convention on Biological Diversity (CBD) signed by 175 countries, including Brazil, in 1992. In 2010, this target was officially considered unfulfilled worldwide and new targets were established for the next 10 years (CBD, 2010). In the Amazon, Pará was the only state to elaborate a list of species of flora and fauna threatened with extinction as predicted by the CBD. The principal strategy to guarantee the conservation of biodiversity is to create protected areas. Next, it is fundamental to invest in the implementation, management and control of these areas. In the Amazon, many areas were created in recent years, but the financial and human resources are insufficient, which hampers their role in conserving biodiversity.



Target 14: Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.

- **Brazilian target for 2015:** 85% of the population with access to an adequate water supply and 75% with adequate sewer installations.⁴⁸
- **Amazon in 2009:** 66% of the population with access to an adequate water supply via a network and 50% with adequate sewer installations (collection network or septic tank).
- **Evaluation:** Access of the population to water in the Amazon has improved. However, its access to sanitary sewer services has stayed practically stable in recent years. Thus, this target will not be reached.



Target 15: Achieve significant improvement in the life of at least 100 million slum dwellers by 2020.

- **Consideration of the target:** This target is global and there are no specific national targets. In Brazil domiciles are considered “precarious” when they do not possess basic sanitation and a bathroom, when their roof and walls are made of non-permanent materials, and if they present excessive density and urban land-use irregularity (dwellings built on the properties of third parties, invasions etc.). According to the IBGE (2010c), 34.3% of the Brazilian population lived in these conditions in 2008. Although quantitative data do not exist for the states, there is evidence that the problem of precarious habitation predominates in the majority of large Amazon cities.

Develop a global partnership for development

Millennium goal number 8 provides for the establishment of a global partnership for development. This objective was established to define commitments of aid from more developed countries to poorer ones, mainly to reduce inequality in the areas of international finance and trade, since there are diverse barriers faced by developing countries – such as trade protectionism and economic instability. The evaluation of specific targets proposed by the UN refers to Brazil and for this reason was not addressed at the regional level (more details: Ipea 2004, 2005)⁴⁹. Nevertheless, some important international initiatives are occurring in the Amazon and it is important to list them:

- **International Treaties:** The Amazon Cooperation Treaty (TCA) – signed in 1978 by Bolivia, Brazil, Colombia, Ecuador, Guiana, Peru, Suriname and Venezuela – has the objective of promoting joint actions for sustainable development in the Amazon Basin, committing these countries to preservation of the environment and the rational use of natural resources. In 1995 the Amazon Cooperation Treaty Organization (ACTO) was created to strengthen and implement the objectives of the Treaty.

- **International Infrastructure Initiatives:** The Initiative for the Integration of Regional Infrastructure in South America (IIRSA) aims to promote the development of a regional infrastructure network, seeking the physical integra-

tion of South American countries. Although for the governments the IIRSA represents an opportunity for economic integration and development, specialists point to the initiative as a great threat to the Amazon forest (Kileen, 2007).

- **International Aid:** Diverse international agencies for cooperation in development (Usaid, GTZ, European Union, Dfid etc.), as well as multilateral banks (World Bank, BID etc.), foundations (Gordon and Betty Moore, Avina, Ford, Packard, Skoll etc.) and other donors work in the Amazon to finance governmental and non-governmental programs and projects.

- **International Networks:** Diverse networks formed by institutions from different countries have been configured in recent years to promote the conservation and sustainable use of natural resources at the Pan-Amazon level in a collaborative effort. Among these are: Amazon Network for Georeferenced Socioenvironmental Information (Raisg), Amazon Regional Articulation (ARA) and the Amazon Initiative (IA).

- **International Organizations:** Diverse international organizations work in the Amazon to support the promotion of conservation of the forests and other environmental themes including: *The Nature Conservancy*, *Conservation International*, WWF and Greenpeace.

CONCLUSION

The Millenium Goals have brought about some improvements in the Amazon, but the region remains below the national average for the majority of the indicators evaluated. Comparing the historical evolution of the indicators evaluated in this study, a majority improved between 1990 and 2009 (or more recent data) in the states of the Amazon. However, the improvement is still unsatisfactory in a majority of cases. Only one of the 15 targets evaluated was reached in the region whereas two others might be achieved by the 2015 deadline (Chart 15). Some states present a better situation than others (Figure 44).

The Amazon is known internationally for its immense forest, biodiversity and natural resources. This wealth is being utilized in a predatory manner while at the same time poverty, inequality and serious health problems – such as malaria and tuberculosis – persist in the region. The region's women participate little in politics and are disadvantaged in the job market. Maternal deaths have increased and the access of the population to basic sanitation is insufficient. Furthermore, the region has high indices of violence. There is a wide disparity between the urban and rural zones while the indigenous peoples and other tra-

ditional populations face great challenges to ensure their well-being.

The good news includes the increase in access to education (although there are still challenges as to its quality and the urban-rural disparity), the equality of women in education and the reduction of child mortality (despite strong evidence that it is underreported in the official statistics). Furthermore, deforestation fell and the number of protected areas rose. The new government will face daunting challenges in fulfilling Brazil's international commitments and in maintaining the drop in deforestation to achieve the target of zero deforestation. Furthermore, the threats (formal and informal) to the protected areas must be combated.

The Millenium Goals have the merit of establishing the bases for a discussion on the expected benefits of sustainable development for the Amazon. But it is necessary to expand the dissemination of and the debate on these objectives in the region that until now have been treated only in a peripheral manner. We hope that this report will be utilized as a compass to orient the management and public policies for the region. There are only five years left to the deadline established by the UN for reaching these targets; and much work remains to achieve them.

Chart 15. Evaluation of the Millennium Development Goals and targets.**Goal 1: Eradicate extreme poverty and hunger****Target 1: Reduce by half, between 1990 and 2015, the proportion of the population in extreme poverty.**

The Target will not be achieved. Although poverty has diminished, 17% of the population was still living on less than ¼ of the minimum salary in 2009.

Target 2: Guarantee full productive employment and good work conditions for all, including women and youths.

The Target will go unreached since child labor and work in conditions analogous to slavery have not yet been eradicated. Furthermore, 60% of the laborers in the region work in the informal market without their social rights being secured.

Target 3: Reduce by half, between 1990 and 2015, the proportion of the population suffering from hunger.

The Target was not evaluated due to unavailability of historic data. In 2009, 47% of the Amazon population reported not always having sufficient food.

Goal 2: Achieve universal primary education**Target 4: Guarantee by 2015 that all children in all countries, of both sexes, finish one complete cycle of study.**

The Target of 100% of children attending primary school can be reached, but if the current adhesion rate of youths attending secondary school is maintained, the 100% Target would only be achieved in 2021. But it is essential to eliminate the disparity between the urban and rural zones to combat functional illiteracy and to improve the quality of education in the region.

Goal 3: Promote gender equality and empowerment of women**Target 5: Eliminate the gender disparities in primary and secondary school.**

The Target was reached, but improvements are needed in the participation of women in politics and in making the labor market more just.

Goal 4: Reduce child mortality**Target 6: Reduce by two thirds, between 1990 and 2015, the mortality in children up to age 5.**

The Target might be met. Nevertheless, expressive estimates of underreporting of infant deaths represent a serious problem and may be distorting the results.

Goal 5: Improve maternal health**Target 7: Reduce by 75%, between 1990 and 2015, the maternal mortality rate.**

This Target will not be achieved. No improvement was registered in the region.

Target 8: Guarantee universal access to reproductive health.

This Target will be difficult to hit. Access increased but is still not universal. There is a large disparity between the urban and rural populations.

Goal 6: Combat HIV/AIDS, malaria and other diseases**Target 9: Halt by 2015 and begin to reduce the spread of HIV/AIDS.**

This Target will remain unfulfilled. The rate of the disease has risen in the region.

Target 10: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it...

The Target was not evaluated due to unavailability of regional data. Nevertheless, it is important to emphasize that Brazil was a pioneer in guaranteeing universal free access to antiretroviral therapy through its public health network.

Target 11: Halt by 2015 and begin to reverse the incidence of malaria and other major diseases.

This Target will not be reached. Although malaria has diminished, more than 1.2 thousand malaria cases per 100 thousand inhabitants are still registered annually. Furthermore, there are still high incidence rates of tuberculosis (38 cases per 100 thousand inhabitants), leishmaniasis (74) and dengue (347).

Goal 7: Ensure environmental sustainability**Target 12: Integrate the principles of sustainable development into national policies and programmes and reverse the loss of environmental resources.**

The Target can be achieved. In recent years there was an expressive decline in deforestation and a rise in areas protected by law (44% of the region). Nevertheless, illegal practices persist and must continue to be combatted in the region.

Target 13: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

The Target was not evaluated due to the unavailability of data. This Target corresponds to the principal Target of the Convention on Biological Diversity (CBD). This year, the Target was considered unmet worldwide (CBD, 2010) and will be replaced.

Target 14: Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.

This Target will not be reached. The access of the population to basic sanitation is insufficient in the Amazon.

Target 15: Achieve significant improvement in the lives of at least 100 million slum dwellers by 2020.

The Target was not evaluated on account of the unavailability of data. According to the IBGE (2010c), 34.3% of the Brazilian population lived in these conditions in 2008.

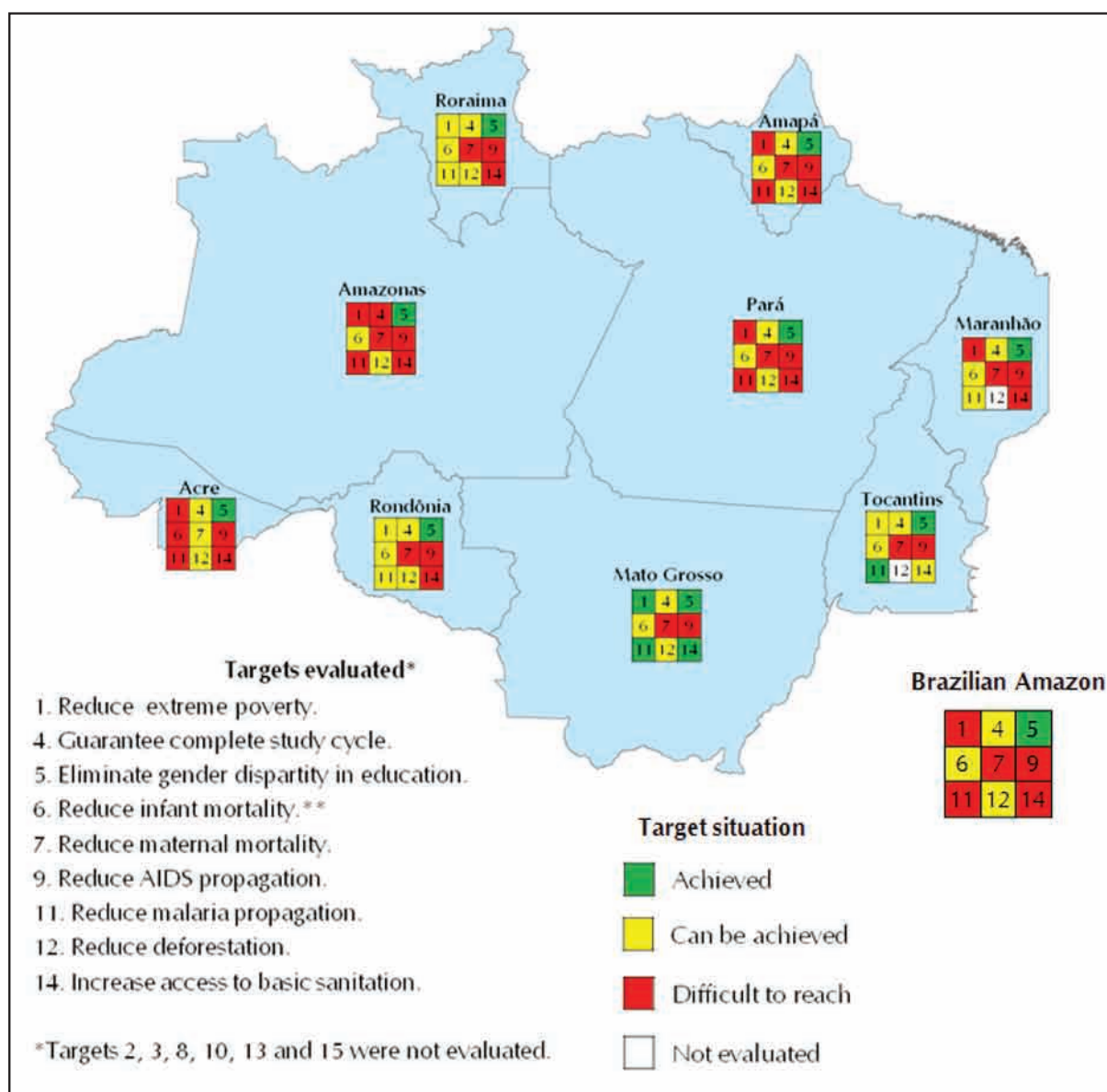


Figure 44. Situation of Millenium Goals evaluated in the Brazilian Amazon states.⁵⁰

TO FIND OUT MORE

About...	Where...	
Millenium Goals	UN	www.un.org/millenniumgoals/
		www.pnud.org.br
	Ipea	www.ipea.gov.br
	National Initiatives	www.portalodm.com.br/ www.nospodemos.org.br/
Poverty	UN	www.undp-povertycentre.org
Education	MEC	www.inep.gov.br http://portal.mec.gov.br
	Unesco	www.unesco.org
Health	AIDS	www.aids.org.br/
	MS	http://portal.saude.gov.br www.aids.gov.br
	WHO	www.who.int/
The Amazon And the Environment	Amazon	www.amazonia.org.br
	Greenpeace	www.greenpeace.org/brasil/
	Ibama	www.ibama.gov.br
	Imazon	www.imazon.org.br
	Inpa	www.inpa.gov.br
	Inpe	www.inpe.br
	Ipam	www.ipam.org.br
	ISA	www.socioambiental.org
	MMA	www.mma.gov.br
	MPEG	www.museu-goeldi.br
	Naea	www.ufpa.br/naea
	Raisg	http://raisg.socioambiental.org/
	OTCA	http://www.otca.org.br/
Data	IBGE	www.ibge.gov.br www.sidra.ibge.gov.br
		www.ipeadata.gov.br
	Ipea	www.ipeadata.gov.br
		www.saude.gov.br/svs
		www.datasus.gov.br
	MS	www.ripsa.org.br/ www.pnud.org.br/atlas
		http://unstats.un.org
	UN	http://devdata.worldbank.org/atlas-mdg/



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NOTES

- 1 The objective of this study is to highlight the situations in the Amazon states and compare them with each other and with the rest of the country. It was not the aim of this study to point out racial inequality. Nevertheless, we caution readers that, as in the other regions of the country, the black, mulatto and indigenous populations of the Amazon present lower socioeconomic indicators when compared to the white population (IBGE, 2010c).
- 2 **Data:** The indicators utilized in this work are public and official secondary data, available on the internet or in reports and publications. This work evaluates a limited quantity of indicators. The complementary indicators were selected based on the peculiarities of the region to aid in producing a broader and more critical analysis.
- 3 **Analyses:** All the data are on a state-level scale, except those referring to elected female mayors (TSE) which are municipal and were summed by state. As most of the indicators are aggregated on a state scale, for the purpose of the analyses, we wholly included the state of Maranhão and excluded the state de Goiás. The presented values that refer to the Amazon are: (i) mean state values weighted for the population of the respective states for the years in question; (ii) arithmetic mean of state values; or (ii) absolute values obtained by the sum of the states presented in absolute form, in proportion to or as a function of the number of inhabitants. The Maps of the Firjan Index, of Education Quality, Malaria and AIDS present municipal data and the classes of values defined manually. The maps of the study were formulated with the software ArcGis 9.
- 4 **Evaluation:** Given that the Millenium Targets are proposed for the countries, the evaluation of Targets presented at the end of each section and in the presentation of results refers to the regional indicators compared to the value expected for all of Brazil (calculated from national values and UN Targets). The projections presented in the evaluation of Targets are based on the simple premise of maintaining evolution rates of indicators refering to the previous consolidated period, thus considering maintenance in the rate of population growth. We must caution that improvement in the data collection effort in some states can underestimate the progress in some of the indicators evaluated. We evaluate only the Targets proposed by the UN. The complementary indicators were utilized to discuss the results that were based on a broader and more critical analysis. There are no specific Targets for the complementary indicators used in this report and it was not the objective of this work to create them.
- 5 In this study, we utilize the definition of poverty presented by the IBGE (2010c) and previously utilized by the Ipea. In 2010, in the National Monitoring Report (Brazil, 2010a), the Ipea proposed a new estimate of extreme poverty based on the value of one food basket with the minimum calories necessary to adequately supply one person, based on recommendations of the FAO and the WHO. The proposed adjustments result in a drastic decline in the population living in extreme poverty in Brazil (less than 5% of the population in 2008). We prefer to maintain the focus of our previous report for two main reasons: (1) the new estimates are not available for the states so that their calculations can be reproduced and (2) we believe that the definition of a minimum salary in Brazil covers the basic necessities of the population; in other words, persons living on less than ¼ of the minimum salary live in conditions of extreme poverty in relation to the national reality.
- 6 In this study we utilize the official urban-rural classification of the IBGE, but specialists warn that the criteria utilized by the IBGE can underestimate the rural population in Brazil (Veiga, 2002).
- 7 In November of 2010, the IBGE announced the GDP data of the states for 2008. Nevertheless, up to the present date, the published value refers to the GDP at current prices. For a historic evaluation of GDP it is necessary that the value be derived from constant prices from 2000, in other words, deflated. For this reason, the comparison between years and the graph present data only through 2007.
- 8 The *per capita* GDP in the Amazon region increased by 53% between 2000 and 2007 (based on deflated values), while in Brazil this rise was 29%. In this period, only three states presented an increase of *per capita* GDP below the regional mean: Amazonas (12%), Pará (33%) and Amapá (39%).
- 9 The data published by the federal government in the monitoring report (Brazil, 2010a) exclude from its analyses the rural populations in the north of the country and for this reason do not coincide with the data presented in this report for Brazil, which are based on IBGE (2010c). The observations made in note 5 must also be considered.
- 10 We must caution that the poverty indices utilized (% of the population) do not reflect the density of poverty (number of poor persons/square kilometer).
- 11 Consider note 5.
- 12 Consider note 9.
- 13 The number of cases of slave labor and its temporal variation are influenced by the number of MTE operations.
- 14 The Gini Index varies from 0, when there is no inequality, to 1, indicating maximum inequality.



- 15 The indicators utilized to calculate the Firjan index are: 3 from employment and income (generation of formal employment, supply of formal employment, average salaries from formal employment), 6 from education (enrollement rate in childhood education, school dropout rate, age-grade distortion rate, percentage of teachers with higher education, average daily class hours, Ideb result) and 3 from health (number of prenatal consultations, deaths from poorly defined causes and infant deaths from avoidable causes).
- 16 State data are still not available to calculate the HVI of the Amazon region.
- 17 Rate of net school attendance: proportion of persons of a determinate age range that attend school at an adequate grade level, according to grade-age standards of the Brazilian educational system, in relation to the total number of persons in the same age range. These data do not coincide with the data presented in the previous report because previously we used only the gross rate.
- 18 Rate of gross school attendance: proportion of persons of a determinate age range that attend school in relation to the total number of persons in the same age group.
- 19 Law 9,504, of 1997, provides that each party or coalition must reserve, for each sex, a minimum of 30% and a maximum of 70% for candidates for the legislature.
- 20 The woman senator of Pará (Marinor Brito from the PSol Party) was elected to the Senate since the candidacy of Jader Barbalho (from the PMDB Party) was impugned by the Clean Record Law.
- 21 The economically active population (EAP) is the labor potential to be counted with the productive sector, that is, the employed and unemployed. The occupied population includes those persons who are working (or on vacation and/or a temporary leave of absence). However, the unoccupied population includes the persons who did not have a job, but were available to work.
- 22 More information on the *Pact for the reduction of northeastern infant mortality - Brazilian Amazon* at: http://portal.saude.gov.br/portal/saude/profissional/area.cfm?id_area=1583.
- 23 This indicator is probably highly overestimated in the Amazon. According to the MS (2010b) there is a high probability of reporting hospital births in the information system for live births. Furthermore, this indicator excludes births without information on the location where they occurred.
- 24 As indicated by the demographer Marta Azevedo, the lack of reliable data sources for Indigenous people is not an isolated problem in Brazil. Other countries in Latin America, Africa, Asia and Oceania also face this difficulty. Read more at: <http://pib.socioambiental.org/pt/c/no-brasil-atual/quantos-sao/diferentes-estimativas>.
- 25 In many cases, the information presented assesses general trends of indigenous policies nationally and are relevant not only for the Amazon but also for other regions of the country. Computations produced by ISA.
- 26 There are currently in Brazil 655 ITs that add up to a total extension of 1,105,006 square kilometers and correspond to 13% of the national territory. Of this total, only 1.39% was found to be spread across the northern, northeastern, southeastern and southern regions and the state de Mato Grosso do Sul. The ISA estimates that today there are about 233 peoples, speakers of more than 180 different languages and dialects, totaling approximately 600 thousand individuals. Of these, 43 peoples also inhabit neighboring countries. Even when there is pertinent demographic information, these parcels were not considered in the estimates. Computations produced by ISA.
- 27 This computation does not include the ITs in their initial phase of regularization nor accounts for a considerable portion of peoples and individuals that circulate in and inhabit the ITs, the villages, the cities and the capitals of the region. It is difficult to conduct a survey of this population due to the high territorial mobility and because many individuals are not officially recognized as indigenous in urban contexts. Provisionally, starting from scattered and diverse sources, we estimate the indigenous population that inhabits cities and rural areas in the Amazon not regularized as ITs to be 450,000. Computations produced by ISA.
- 28 However, despite a positive general curve, the ISA listings indicate that at least seven peoples have reduced populations that vary from 5 to 40 individuals. This positive trend points to the effectiveness of differentiated mechanisms arrayed in the Federal Constitution of 1988; but in practice, much still needs to be improved. For more details, see the "General Picture of Peoples": <http://pib.socioambiental.org/pt/c/quadrogeral> and a production of the demographer Marta Azevedo. A review article can be found at: <http://pib.socioambiental.org/pt/c/no-brasil-atual/quantos-sao/quantos-eram-quantos-serao>.
- 29 As provided in article 231 of the Federal Constitution of 1988.
- 30 Their main references constitute the Law of Guidelines and Bases of National Education (LDBE) of 1996, Resolution 3/1999 of the National Council of Education, National Education Plan, approved in 2001, and the project to revise the Indian Statute, which originated it is being considered in the National Congress.

- 31 For more, read: <http://pib.socioambiental.org/pt/c/politicas-indigenistas/educacao-escolar-indigena/introducao>.
- 32 The progressive increase in the number of schools verified in this period is due to not only greater rigor in supplying information to the School Census, but also to the fact that in recent years the state and local education systems began to regulate village schools, recognizing them as indigenous schools. This resulted in the processes of recognizing “classrooms” located in villages that were previously considered extension rooms of rural and/or urban schools. It is still due to abandoning the dynamic of nucleation of schools, when several schools are linked to a single address and, therefore, appear to be a single establishment.
- 33 This expansion has been possible on account of programs financed by the federal government, from which the secretaries of education, universities and NGOs began to work jointly with the indigenous peoples in elaborating specific materials.
- 34 97.7% of indigenous schools were part of the National School Meal Program (MEC, 2007).
- 35 The registry of infant deaths among the indigenous populations is highly complex due to underreporting so that the rates presented can be underestimated (IDS-SSL-Cebrap, 2009).
- 36 The challenge of environmental management on ITs was defined as the attribution of the Ministry of the Environment (MMA) on the 19th of May 1994, in Decree 1,141, which “provides for the actions of environmental protection, health and support for activities productive to the indigenous communities”. The responsibility of the Ministry is not restricted to the internal area delimited by the perimeter of the IT, but also covers the surrounding area and the activities that, performed outside the IT, can promote an impact on the living conditions of the indigenous population. We include in this situation, for example, cases of pollution of waters upstream from the IT limit which then pass inside the IT.
- 37 To learn more about the Awá-Guaja and Guajajara, access the Encyclopedia of Indigenous Peoples in Brazil at: <http://pib.socioambiental.org/en>.
- 38 See note 23.
- 39 In 2010, the Brazilian government presented corrected rates of maternal mortality and estimates for the year 1990 in the National Monitoring Report (Brazil, 2010a). The corrected data and the estimates for 1990 modify the expected Target for 2015 (*Reduce by 75%, between 1990 and 2015, the rate of maternal mortality*) in relation to that presented in our previous study (Celentano and Verissimo, 2007). The Brazilian Target increased from 13 to 35 deaths per 100,000 live births.
- 40 The population (especially rural) of the Amazon has little access to hospitals and specialized exams. For this reason, the number of cases of registered diseases and rates can be underestimated, as can the mortality estimates.
- 41 The expressive increase in the number of cases can be the result of a rise in the number of exams performed in the region. In 1990, the statistics on AIDS were incipient and did not constitute a basis for a precise comparison.
- 42 The number of cases and the rate of incidence of malaria may be underestimated in some regions of the Amazon given the difficulty of the populations, in certain areas, to access medical centers to complete exams and treatment.
- 43 There are some state campaigns such as the *Pact for Life* in Pernambuco that has the Target of reducing homicides by 12%.
- 44 Estimate based on NOAA-15 nocturnal satellite images (Modis, NASA). It is important to emphasize that there are several types of satellites and sensors for capturing heat foci and the results between them are not always compatible.
- 45 The annual rate refers to the period from August of one year to July of the following year. Therefore, “deforestation 2010” refers to “deforestation 2009-2010”.
- 46 Military and slave hideout locations (*quilombolas*) are also classified as Protected Areas. Furthermore, in this period the area of rural property that must be conserved as Legal Reserve also increased, from 50% to 80% (Provisory Measure nº 2,166-67, of 2001).
- 47 Includes about 370 thousand square kilometers of APAs.
- 48 Target in relation to 1990.
- 49 Except for the Target “Give access to the benefits of new technologies including information and communications technologies”. The population that lives in domiciles with telephones in the Amazon rose from 9% in 1990 (Pnud, 2003) to 77% in 2000 (IBGE, 2010). The region is 8 percentage points below the 2009 Brazilian average (85%). In 2009, 15% of the Amazon population had a computer in their homes. On the other hand, the Brazilian average was higher: 28%.
- 50 Situation of the Targets evaluated by state: in green, the Targets already achieved; in yellow, the Targets that may be reached in the time proposed; in red, the Targets that will be difficult to meet. The projections presented in the evaluation of Targets is based on the simple premise of maintaining the evolution rates of indicators in reference to the consolidated previous period, in this manner presupposing maintenance of the rate of population growth. Cartography methodology based on L’Atlas 2006 (Monde Diplomatique).



The Amazon Regional Articulation (ARA) is a network of organizations from the Amazonian countries seeking help in reducing deforestation and sustainable use of biodiversity. It's mission is to facilitate the exchange of experience between actors and the different countries to build a new vision and new models of Amazonian development. This publication is part of a regional ARA initiative to evaluate the Millennium Development Goals in the Amazonian countries.



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