Brazil

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London

February 2004

A study funded by Department for International Development, UK, under contract CNTR 03 4777

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3.1 Introduction

The aftermath of the failed Cancún Ministerial has intensified the debate regarding the best strategies for Brazilian participation in the international trade system. The failure of Cancún highlighted the gap between developing countries' expectations and developed countries' positions. This analysis attempts to map out the potential affects of trade liberalisation on poverty in Brazil: it highlights the potential for liberalisation to be an engine for economic growth and poverty alleviation; however, it also illustrates the importance of domestic policies in reducing poverty.

Poverty is a major problem in Brazil: in 1999 approximately 14% (22 million people) were below the indigence line and 34% (53 million people) were below the poverty line (Barros, Henriques and Mendonca 2001). However, the exact role that trade can play in poverty's alleviation is contentious: some theorists highlight trade's positive impact on economic growth and the trickle down effects this has on poverty alleviation; whereas, others stress the importance of redistribution rather than economic growth. In Brazil, redistribution and progressive spending have been heralded as the major tools to alleviate poverty: for instance, some studies find that closing the 'poverty gap' – the amount needed to lift the poor out of poverty – would cost just 1.6% of Brazil's GDP. (The Economist 14 August 2003[1]).

An increasing trend in the literature regarding the link between trade and poverty is to highlight the importance of domestic reforms in achieving poverty alleviation: advocates of this position assert that trade liberalisation alone is insufficient - poverty alleviation is also the result of an active government that implements pro-poor policies. The World Bank's report *Global Economic Prospects* echoes this view:

> Even if developing countries succeed in obtaining access to new markets, they will have to adopt complementary policies—removing obstacles to private investment, improving public investment in infrastructure, and providing education—to ensure that domestic firms respond to new opportunities associated with greater integration, and that the benefits of integration are transmitted to the poor. Put differently, trade policies must be embedded in a coherent national development strategy—they are not a substitute for it (2003, XVI).

Therefore, a detailed analysis of which complementary domestic reforms Brazil should engage in is essential.

However, despite the importance of pro-poor targeted redistribution, multilateral trade liberalisation, by generating economic growth and opportunity can also play a role in ameliorating the conditions of Brazil's poor. Agriculture protection and subsidies for farmers in industrial countries stifle Brazilian agriculture exports: this prevents that sector from exploiting its comparative advantage. Agricultural liberalisation would contribute to significant economic growth and could help alleviate rural (and

[1] See The Economist 14 August 2003.

potentially urban) poverty as it would create a demand for unskilled and labour intensive activities.

The liberalisation of services also represents an area which can contribute to economic growth, but inadequate information on services makes it difficult to assess the link to poverty reduction. However, available data indicate that the gains to the poor will be indirect. This analysis shows that a disproportionate amount of attention has been absorbed by agriculture and domestic reforms at the expense of other sectors, such as services.

Another important WTO agreement which has wide ranging affects on poverty is the Trade Related Aspects on Intellectual Property Rights (TRIPS) Agreement. This analysis will highlight the potential for Brazil to harness the agreement to its advantage.

However, trade liberalisation could adversely affect some sectors of Brazil's population: formal sector workers in capital intensive manufacturing will be adversely affected from free trade due to preferential trade agreements that are currently protecting globally uncompetitive industries. This could create a new class of poor people. As a result, it is important that liberalisation occurs in competitive Brazilian sectors, such as agriculture so that dislocations created by increased imports in capital intensive goods can be offset.

Despite the greater economic gains accrued from multilateral liberalisation, the breakdown of global trade talks has increased the relevance of regional and bilateral trade agreements. Excluding multilateral talks, Brazil is currently involved in two key negotiations: the Free Trade Agreement of the Americas (FTAA) and the European Union (EU)-MERCOSUR Agreement. However, regional strategies represent an inferior alternative for Brazil as agricultural liberalisation is highly unlikely to occur at a regional level. In addition, the shallow liberalisation achieved at the Miami Ministerial of the FTAA indicates that greater economic gains will be derived from multilateral liberalisation. A major challenge for Brazil will be to ensure that the appropriate safety nets are in place to ease the dislocations caused by any form of liberalisation.

This paper is divided into three major sections: after an examination of inequality, poverty, and the affects of trade thus far in Brazil, the paper illuminates the importance of domestic reforms for poverty alleviation. It examines poverty in broad sense to capture the multidimensional nature of the concept and thus most of the discussion is framed in relation to the Millennium Development Goals (MDG). The paper then highlights the Brazilian trade position and its evolution. It looks at the prospects for reform in important economic sectors, and how poverty may be affected by trade agreements: these issues are discussed vis-à-vis agriculture, services, intellectual property rights, and free trade agreements.

Inequality and poverty

In Latin America a major factor hindering poverty alleviation is inequality. Since the 1980s inequality has increased in the region: for instance, according to Morley there is a consensus that distribution has stayed about the same or even worsened slightly since 1990 (Morley 2001). Unequal distribution of income is one of the major

contributors to poverty – a more egalitarian distribution of income would increase the effects of economic growth on poverty reduction (United Nations Development Programme 2001 *Human Development Report*).[2]

According to the 2003 report by the Economic Commission for Latin America and the Caribbean (ECLAC), a 5% reduction in the Gini index could reduce the time needed to halve extreme poverty by two to five years. In addition, inequality matters because it affects other outcomes, such as economic growth, quality of public policy, government accountability, and social cohesion—all of which are important aspects of development and democracy (UNDP 2001 *Human Development Report*).

Brazil is an icon of extreme income inequality. Despite periods of fast economic growth, as during the economic miracle of the early seventies, income inequality has generally remained stagnant. Contrary to the assumption prevailing until the eighties, the 'trickle down' effect of fast economic growth has not produced great benefits for the poor. However, the situation may be improving; a 2003 report by the World Bank finds that there was a very modest, but statistical significant improvement in equality.[3]

The historical challenge of improving income distribution has been pointed out as a key determinant for the high levels of poverty in Brazil. The extensive literature on poverty suggests that the persistence of poverty is not related to lack of resources: rather, it is linked to unequal income distribution (Barros, Henriques and Mendonça 2001, Rocha 2000). Improvement in distribution is considered fundamental not only from social and moral perspectives, but also because in the absence of redistributive mechanisms the opportunities for economic growth in Brazil could actually increase concentration.

Income concentration is considered the main barrier to eradicating poverty, yet the income concentration index has shown an astonishing stability throughout the two last decades. From 1980 to 2003, the gini coefficient has only varied from 0.58 to 0.62 (see Table 1 for gini statistics). The richest quintile of the population receives an average income between 24 and 35 times higher than the poorest quintile and the average income of the richest 10% varies from 22 to 31 times higher than the income received by the poorest 40% of the population. In other words, the poorest 10% of the population receives 0.7% of total income, whereas the richest 10% receives 48% and the richest 20% receive 64.1%.[4] Such a heavy concentration of income in the upper echelons explains why the poverty reduction experienced right after the Real Plan is not reflected in income distribution

[2] Inequality matters as studies show that in countries with Gini coeffients in the upper ranges—such as in Latin America—average consumption needs to be raised twice as much as in regions of low inequality in order to achieve the same level of poverty reduction. See Chen 2000.
[3] See Inequality in Latin America and The Caribbean: Breaking with History? 2003 World Bank
[4] A breakdown of various statistics on Brazil is at http://www.nationmaster.com/country/br/Economy

Table 1 Indicators of Income Distribution in Brazil 1977-1999

Year	Gini Coefficient	Theil Index	Gap between the richest 20% and the poorest 20%	Gap between the richest 40% and the poorest 40%
1977	0.62	0.91	27.5	26.8
1982	0.59	0.71	25.6	23.0
1987	0.60	0.75	27.6	24.2
1992	0.58.	0.70	26.7	21.8
1997	0.60	0.74	29.2	24.5
1999	0.60	0.72	27.2	23.3

Source: Amann (2003) from Ricardo Paes de Barros. ' A estabidade inaceitavel; desigualdade e pobreza no Brasil,' in Ricardo Henriques (ed.), *Desigualdade e pobreza no Brasil* (Rio de Janero, 2000), p. 24, p.39.

In Brazil, since inequality is so vast, economic growth results in relatively little poverty alleviation: considering the link between inequality and development, the *Human Development Report* (2001) reasons that: 'there is an arithmetic reality. Even if there is growth and poor people gain proportionately from that growth, the same growth rate buys less poverty reduction where inequality is high to start with.' This view is echoed by Oxfam's (2002) findings which assert that based on the current Brazilian income distribution pattern, Brazil would have to grow at three times the rate of Vietnam to achieve the same average increase in the poorest quintile of the population. As a result, the direct gains accrued to the poor through a modest expansion of exports and economic growth is restricted: thus, negating the strategy of total reliance on trade to ameliorate the condition of the poor.

Inequality also restricts the rate of economic growth as it can exacerbate the effects of market and policy failures on growth; thereby, frustrating poverty alleviation as weak capital markets prevent poor people, who lack collateral, to borrow. This limits the ability of poor people to open a business and so reduces overall growth and opportunity (Human Development Report 2001). Consequently, it is vital that policies are formed which enable the poor to participate in the new economic opportunities created by liberalisation sectors.

Another problem associated with a high concentration of assets is a reduced incentive for productive investment. In Brazil, incentives for innovation have been restrained due to lack of domestic competition; privatisation has exacerbated the concentration of Brazilian industrial assets. Brazil's industrial sector, for instance, is currently dominated by four to ten large firms: in 1998 the top four firms in the automotive sector accounted for 94 per cent of the sectors net receipts, similarly in the cement industry the top seven firms were responsible for 60 per cent of total sectoral receipts (Amann 2002, 957). Privatisation has deepened this concentration by transferring the assets of public enterprises to a select group of long established domestic and foreign investors. One positive effect of trade liberalisation could be to increase expenditure on productive investment due to international competition.

However, social spending thus far has produced mixed results (Faria 2000). Brazil devotes approximately 16% of GDP to social spending, but the allocation has been very inefficient as it does not sufficiently target the poor. Pensions, for instance, absorb two-thirds of social spending, while health and education—two programs which are for general benefit – account for much of the rest. Education in Brazil has

traditionally benefited the middle and upper classes as it is skewed toward universities. Only 30% of Brazil's spending goes to primary education; whereas, universities are generously funded. They receive 25% of all public spending on education for only 2% of all students: funding per student is three-and-a-half times Brazil's GDP per head—according to the World Bank this is the world's highest ratio.[5]

Therefore, scarcity of resources does not explain Brazil's rampant poverty. Based on the Human Development Report of 1999, in relation to per capita income, Barros, Henriques and Mendonça (2001) note that Brazil belongs to a group of one-third of the richest countries in the world. Among countries with a similar per capita income, the level of Brazilian poverty is much higher than the average of those countries (which is less than 10%). Targeted spending could ameliorate poverty levels: the authors estimate that annual transfers of 6 billion Reais would be enough to address indigence, while 33 billion Reais would be sufficient to eradicate poverty.[6]

Recent available estimates on poverty and indigence levels in Latin America indicate that Brazil is part of a larger trend of regional poverty. As a whole, the region has made little progress in diminishing poverty: according to the Economic Commission of Latin American and the Caribbean (ECLAC) between 1999-2002 regional poverty diminished by only four tenths of a percentage point moving from 43.8% to 43.4% (220 million people): extreme poverty increased by three tenths of a percentage point to reach 18.8% (95 million) of the population.[7]

One factor that has contributed to the increase in poverty levels is the region's poor economic performance: in 2001 Latin America grew by only 0.3% and contracted by -0.7% in 2002. In terms of meeting the Millennium Development Goal (MDG) of halving extreme poverty by 2015, by 2000 Latin America had already achieved 40% of the progress toward this goal; however, economic decline in 2001 and 2002 reduced this figure to only 33.2% (ECLAC Social Panorama 2003).

Based on data from the annual national household surveys ('PNADs'), Barros, Henriques and Mendonça (2001) measured the poverty level and its evolution during the eighties and nineties in Brazil. They found that in 1999, approximately 14% (22 million people) of Brazilian families were below the indigence line, with 34% (53 million people) classified below the poverty line.[8] In terms of distribution, the average income of the poor was about 55% below the poverty line.

In the period analysed, by Barros, Henriques and Mendonça, the two main declines in poverty levels occurred after the implementation of the economic stabilisation plans - the Cruzado Plan (1986) and the Real Plan (1994).

[5] See The Economist 22 February 2002 Start at the Beginning.
[6] These estimates do not include administrative costs.
[7] Although the statistical significance of these figures is minute, as such small variation could be a result of smapling technique, they do illustrate that poverty alleviation is stagnant.
[8] The indigence line was based on the costs of acquisition of a food basket, as regionally defined. The poverty line includes the minimum costs incorporated in the indigence line plus expenditures with housing, transportation and clothing. However, it is important to note that there is no official poverty line in Brazil, thus estimates can vary depending on the variables one uses to calculate poverty.

Rocha (2000) estimated that in the period immediately following the implementation of the Real Plan, there was a one-third decline in the proportion of poor in Brazil. Table 2 illustrates the affects of the Cruzado and the Real Plan on poverty. It is clear from Table 2 that poverty levels increased during the economic recession in the early 1980s but were sharply reduced in 1986 due to the implementation of the Cruzado Plan which decreased poverty by controlling inflation. However, the plan's success was short lived – poverty levels eventually returned to the pre-plan level. The next major drop in poverty was a result of the Real Plan. This stabilisation program significantly decreased prices: the International Price Consumer Index (INPC) measured a decrease from 2,489.1% in 1993 to 9.1% in 1996; thus, diminishing poverty levels by enabling the poor to gain access to a variety of consumer goods.[9] However, since the plan's inception poverty levels have stabilised.

The inability to decrease poverty levels illustrates the difficulties associated with poverty alleviation. A multidimensional analysis – in the second section—will illuminate why poverty levels have stabilised: poverty reduction requires the analysis of access to non-market output, such as education, health care and sanitation services and a range of other significant life quality-enhancing services.

Table 2 Poverty Levels as a Percentage of the Population 1977-1999

Year	Poor as a percentage of the population*
1977	39.6 (40.7)
	42.6 (45.2)
	38.8 (42.0)
	n.a.
	43.2 (50.7)
1982	43.2 (52.0)
	51.1 (62.8)
	50.5 (63.6)
	43.6 (56.9)
	28.2 (37.6)
1987	40.9 (55.4)
	45.3 (62.6)
	42.9 (60.7)
	43.8 (63.2)
	n.a.
1992	40.8 (57.3)
	41.7 (59.4)
	n.a.
	33.9 (50.2)
	33.5 (50.1)
1997	33.9 (51.5)
1998	32.8 (50.3)
1999	34.1 (53.1)

*Figures in parentheses are absolute numbers of poor in millions
Source: Amann quoted from: Ricardo Paes de Barros, 'A estabilidade inaceitavel: desigualdade e pobreza no Brasil,' in Ricardo Henriques (ed.), Desigualdade e pobreza no Brasil (Rio de Janeiro), p. 23, p.39.

[9] See MICs and Inequalities Brazil Section ODI paper.

However, overall stability in poverty levels masks very different local situations. Since the mid-nineties, poverty in rural areas has shown a consistent decrease, which can be related to agricultural dynamism and modernisation in the centre-west and in the south.[10] However, table 1 indicates that proportion of poverty in rural areas is systematically higher than in urban areas, but there are more urban poor than rural.[11] In addition, the proportion of poor differs across various rural areas. Ferreira and Lanjouw (2001), for instance, estimate that 49% of the rural population in Brazil's Northeast has incomes below the extreme poverty line, but only 25% of the rural population in the Southeast falls below this poverty line. They find that rural poverty is deeper as these poverty rates are significantly higher than in urban area: they estimate that 36% of the urban population in the Northeast and 8% in the Southeast lives in extreme poverty.[12]

Although poverty is a national problem, it is highly concentrated in the northeast. Figure A1 in the annex and table 3 reveal the regional dichotomy plaguing Brazil: more than half the poor and even more of the indigent live in Brazil's northeast.

However, poverty has also increased in metropolitan areas, particularly in Sao Paulo, where the productive restructuring in the manufacturing sector resulted in severe dislocations (Rocha 2000). Marcio Pochmann, of the São Paulo city government, for example, speaks of a 'new poverty' of educated whites who have been made redundant due to freer trade, privatisation, and economic change. In greater São Paulo, unemployment has risen from 180,000 in 1989 to 1.3m today.[13] Data from DIEESE (a trade union sponsored research institute) found that total unemployment in metropolitan Sao Paolo rose from 9.4 per cent at the end of 1990 to 16.2 per cent at the end of 2000 (Amann 2002).

Mass migration from the northeast in the last half-century has fuelled metropolitan poverty: lack of available and cheap housing forced migrants to erect makeshift homes in 'favelas': although measures to improve favelas are in progress, some still lack basic amenities, such as transportation networks, a sewage system and electricity

[10] The export-oriented agribusiness is concentrated in the center-west, south and southeast. However, there are some important production areas in the northeast (e.g. sugar, cocoa and fruits, among others).
[11] The bulk of the rural poor are located between 50% of the poverty line and the line itself and the urban poor usually have higher incomes.
[12] To calculate poverty level Ferreira and Lanjouw (2001) combine information on expenditures from the 1996 living standards measurement survey (PPV) with the national household survey (PNAD). They use a poverty threshold of R$131.97 household income per capita, and an extreme poverty line of R$65.07, equal to the estimated cost of a minimum food basket containing 2,288 calories per day. See Ferreira and Lanjouw 2001.
[13] See The Economist 14 August 2003.

Table 3 Number and proportion of the poor in Brazil by region/category

	1997		
Regions and categories	**Number (1,000)**	**Proportion (%)**	**Contribution (%)**
Urban north	2,856.3	39.61	5.51
Northeast	23,314.4	52.86	44.98
Minas Gerais/Espirito Santo (southeast)	5,350.7	27.50	10.32
Rio de Janeiro (southeast)	3,829.9	28.86	7.39
São Paulo (southeast)	8,553.6	25.21	16.50
South	4,248.7	18.11	8.20
Center-West	3,682.5	34.62	7.10
Metropolitan areas	15,435.9	33.18	29.78
Urban	23,896.1	31.30	46.10
Rural	12,504.0	42.84	24.12
Brazil	**51,836.0**	**34.09**	**100**

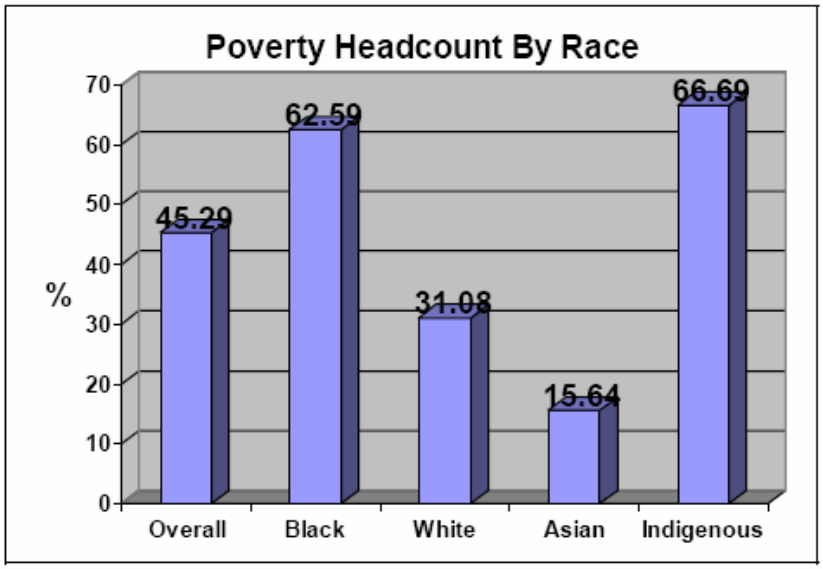
Notes: Poverty line based on the Family Budget Surveys.
Source: National Household Survey 1997 (Rocha 2000)

The ranks of Brazil's poor are dominated by blacks, women and the young. The Brazilian Institute of Geography and Statistics calculates that out of Brazil's 172 million inhabitants 45% are black. A recent survey carried out by the Institute of Applied Economic Research (2000), revealed the disparity between black and white populations regarding economic conditions. The study claimed that black workers earn an average of less than half of the wages paid to white workers: for example, the average monthly income of the white population is US$ 160; whereas, the black population's is US$ 68.[14] Graph 1 indicates that 62% of black households live below the poverty line. The level of black poverty is more severe in the north: in this area poor blacks represent 78% of poor families (Patel, Raj 2003).[15] The chart demonstrates that poverty rates of Black people is approximately double that of whites. It is also important to note the high level of poverty among indigenous people: despite only comprising a small portion of the population they account for the highest poverty rate (66.9%).

[14] The World Bank's study *Inequality in Latin America and The Caribbean: Breaking with History* confirms these results. The report asserts that men and women of African descent in Brazil earn about 45% of the wages of their white counterparts.

[15] In examining these figures one must recognize the difficulty of categorizing Brazilians by race. The country is extremely diverse; moreover, the subjectivity of self-identification among races is questionable as in Brazil whiteness continues to be greatly privileged.

Graph 1 Poverty Headcount By Race



Source: Ferreira, et al. A Robust Poverty Profile for Brazil

As shown in Table 4, the living conditions of the black and mulatto population in Brazil are substantially worse than that of the white population. If the negative impact of labour reallocation more adversely affects these groups then the historical social challenge of improving equality of opportunity among Brazilians could be aggravated. This kind of distinction tends to disappear when investigations using aggregated data are conducted, but from a development perspective, they must be highlighted.

Table 4 Selected socioeconomic characteristics by colour – Men

	Colour		
Socioeconomic characteristics	**White**	**Black**	**Mulatto**
Years of schooling	6.25	3.81	3.96
Age of first employment	12.66	12.20	12.01
Per capita family income (R$)	376,57	166,87	163,61
Size of family	3.70	4.05	4.18
Urban residence (%)	83.17	77.79	73.19
Father´s years of schooling	2.96	1.33	1.57

Source: National Household Survey 2000 (Guimaraes 2000)

Trade agreements' impact on poverty and employment

Some argue that trade liberalisation will result in expanded opportunities for Brazil's poor due to the structure of the country's economy (Bussolo 2003; Harrison 2003). They argue that once protection for capital intensive industries is removed, capital will flow to labour intensive sectors; the expansion of labour intensive activities has the potential to decrease poverty as it absorbs a greater percentage of the unskilled population in formal wage labour. Thus, Harrison (2003) asserts that all forms of liberalisation will result in progressive gains to the poorest households: he finds that as a percent of household income, the incomes of the poorest households increase the most relative to the aggregate gains for the economy.

Although the impact on a given economic sector is contingent on the specific trade agreement, there are some general patterns that result from liberalisation (Harrison

2003). In general some form of liberalisation will result in oil seeds, agriculture, processed food and leather sectors to expand production and exports, while several manufacturing sectors, including motor vehicles, and metal products will contract. This change reflects relative protection in Brazil which favours manufacturing at the expense of agriculture and processed food products.

Liberalisation in these import competing sectors could exacerbate poverty as the manufacturing sector is a major employer of both skilled and unskilled labour (Bussolo 2003). Brazil's average tariff level against its trading partners indicates that large dislocations could occur after further liberalisation of the manufacturing sector: for example, Brazil's average rate of protection against Latin America exports is 3%, but its rates against North America are 12% and its protection vis-à-vis the rest of the world is 13% (Bussolo 2003 19).

It is important to note that Brazil has only recently begun to liberalise its economy[16] and that after it began its process of economic reform the rate of imports dramatically increased: for instance, in 1990 and 1999 the import of goods to GDP ratio increased from 4.4 per cent to 8.9 per cent respectively. However, during this period, GDP significantly declined: despite its economic reforms, performance in the 1990s was dismal: the average yearly growth rate of GDP in the 1990s was 1.82 per cent: whereas, during the 'lost decade' of the 1980s it was 3.03 per cent (Amann 2002).

One contributory factor to the decline in GDP was increased import competition which adversely affected Brazil's industrial sector. Import penetration resulted in domestic enterprises losing market share to foreign producers. Between 1990-1995 the import total supply ratio increased from 4.7 per cent to 9.8 per cent in metallurgy; 12.6 per cent to 21.4 per cent in machines and tractors; 18.4 per cent to 33.2 per cent in electrical equipment; 0.5 per cent to 16.8 per cent in transport equipment; 2.4 per cent to 10 per cent in textiles (Amann 2002, 950). Increases in imports in these goods caused domestic industries to contract; thereby, increasing unemployment. (See Annex, Table A1.)

Amann finds that one source of inequality and poverty arises from the dramatically reduced employment opportunities in the industrial sector. The 1990s witnessed a significant increase in industrial real wages, but this was coupled with decreases in total industrial employment every year in the 1990s (see Annex, Table A1). Decreases in employment levels occurred even during periods of positive growth in industrial production.

Lack of opportunity in the industrial sector may also be a result of privatisation and the application of more advanced technological equipment. The privatisation process resulted in substantial lay-offs, for instance, in the federal railroad system (RFFSA) around half of the staff were made redundant prior to privatisation; after the industry was privatised a further 11, 5000 employees were dismissed.[17] Economic opening

[16] Brazil began to liberalize its economy in the 1980s, however, major liberalization only began in the early 1990s.

[17] Other examples of privatization also illustrate how privatization reduced industrial employment opportunity: The Companhia Siderurgica Nacional: the workforce was reduced from 24,263 in 1989 to 9,829 in 1998; Cosipa reduced its staff from 14,445 in 1989 to 6,983 in 1998 and Usiminas from 14,600 in 1989 to 8,338 in 1998. See Amann 2002.

enabled companies to access more technologically advanced equipment which also reduced the need for labour.

The contraction of industrial sector employment exacerbated poverty as it was not offset by a corresponding expansion in employment in the service sector. The service sector only absorbed labour at an average of 1.3 per cent between 1991 and 2001 (Amann 2002). The inability of other economic sectors to absorb the surplus labour resulted in Brazil's aggregate unemployment figure to increase from 5.1 per cent in 1994 to 7.6 per cent in 1999.

In sum, unilateral, regional, and multilateral trade initiatives may eventually provide increased opportunity for the poor through the reallocation of domestic resources from inefficient capital intensive activities to more labour intensive activities; however, the 1990s have illustrated that there will be significant short-term costs. In the short-run the dislocation caused by the contraction of manufacturing may exacerbate urban poverty; thus, emphasising the importance of effective safety nets to cushion the transition.

Trade openness and labour markets

Analyses of labour market transformations provide useful indications of the potential impacts of trade liberalisation on poverty. Since salaries continue to be the main source of income in Brazil, the way individuals are incorporated into the labour market and the trends in labour-related income can directly affect poverty rates.

Rocha (2000) analyses the evolution of Brazilian labour markets from 1994 to 1999, in six capital cities of Brazil. On average, she notes an improvement in the labour market relative to the period immediately following the implementation of the Real Plan in 1994.

However, when data is disaggregated according to workers' level of education, a rapid movement towards the specialisation of the market in workers with high qualification is observed. There was a reduction of 1.3 million job positions for the least qualified workers (less than four years of education); the employment level for workers with qualification between 4-8 years of education remained stable; and there was an increase in the demand for workers with more than 8 years of schooling. These changes weighed negatively on the income evolution of the least qualified group. The total labour-related income for that group had an accumulated loss of 22% in two years. [18]

Since more qualified workers obtain more opportunity from liberalisation, making trade free is not always pro-poor: in fact, at times, the poor disproportionately suffer from the consequences of liberalisation. Thus, increasing access to education and levels of education is vital as it ensures that trade liberalisation does not adversely

[18] Rocha's work contradicts findings by Harrison (2003) and Bussolo which state that liberalization causes resources to shift from capital (highly skilled) activities toward labour intensive (low skilled) ones. However, Harrison and Bussolo both assume that liberalization will occur in labour intensive sectors thus enabling labour to be absorbed by these sectors. However, if there is little to no liberalization in labour intensive sectors, such as agriculture and light manufacturing then it is unlikely that opportunity will expand for low skilled workers.

affect the poor: Menezes-Filho (2003), for instance, asserts that more education is needed before Brazil can reap the full benefits of further liberalisation.

Investigating the effects of trade liberalisation on the employment structure and wages in the manufacturing sector, Arbache and Corseuil (2001) found that the intensification of trade flows affects skilled and unskilled workers in different ways. The results suggest that in the industries most affected by imports, the need for productivity gains and modernisation led to an increase in the relative wages of skilled workers. On the other hand, in the export-oriented industries, the relative premium paid to skilled labour was reduced, as part of a cost reduction strategy to increase their competitiveness in the international market. The latter could also indicate that the most competitive export sectors are those of low value added products, with less demand for skilled labour.

The results of both investigations therefore suggest that though trade liberalisation can increase labour-intensive activities, it does not automatically imply a rising demand for unskilled labour. One of the reasons that have limited this demand is the persistence of trade barriers in agriculture. These barriers have restricted the expansion of Brazilian exports in its most competitive sector (Harrison et al. 2003, UNCTAD 2003). As a result, instead of labour reallocation, the outcome has been persistent unemployment.

Further trade liberalisation requires adjustments to the labour market so that in the end there will be net gains for the poor. However, the social costs of the transition are high and affect different groups to varying degrees. Some disaggregated analyses have pointed out that in Brazil, gender and race are factors associated to such differentiation. As illustrated above, women and blacks tend to be the groups most susceptible to unemployment or fragile labour relations, such as occupation in the informal sector. In the case of black women, despite their larger participation in the work force relative to white women, they continue to occupy less stable positions and suffer from salary discrimination more frequently. (Guimaraes 2000, Guimaraes 2003)

As mentioned above, the high dependency of Brazil on agricultural exports implies that the benefits of further liberalisation will necessarily depend on more market opportunities for such products. The expansion of the agricultural sector can stimulate a large chain of related economic activities, raising the demand for unskilled and semi-skilled workers.

In regards to poverty in Brazil, a more refined analysis would be required to assess whether the dynamics of the agricultural sector, in a scenario of total liberalisation, would be enough to compensate losses in the manufacturing sector. Nevertheless, the experience of the nineties indicates that without international liberalisation of agriculture, the net balance for less skilled workers will be highly negative.

Human development in Brazil

The evolution of the Human Development Index (HDI) in Brazil provides some indication on its development performance over the last few decades. Based on the 2003 Human Development Report (HDR), the Brazilian HDI rose from 0.772 to

0.777, giving the country the 65th position in the world ranking. From 1975 – when the Brazilian HDI was 0.644 – to 2003, Brazil gained sixteen positions, an advance comparable only to Malaysia. If only countries with a population larger than 100 million people were considered, Brazil would occupy the fourth position in the ranking, behind only from the United States, Japan and Russia[19].

An increase in Brazil's performance occurred despite only modest improvement in per capita income. Between 1975 and 2001, while the annual average growth of per capita income in developing countries was 2.1%, and 2.3% for developed countries, the Brazilian annual average was 1.2%.

The HDI is based on a simple mean of the components education, life expectancy, and income; thus, a low income indicator can be compensated with improvements in education and life expectancy. Whereas in 1975, life expectancy was 59.5 years, by 2001 the rate was 67.8 years. In regard to education, from 1990 to 2001, adult literacy rates rose from 82% to 87.3%, and the net enrolment rates for primary education of children aged 7-14 year old, increased from 86% to 97%. Net enrolment rates for secondary education rose from 15% to 71% in one decade.

Brazil also benefited from the methodological modification for the estimation of the education indicator in the 2003 HDR. In the latest report, the UNESCO accepted the official numbers provided by countries, instead of using its own estimates for enrolment rates.

In fact, the Institute of Applied Economic Research (IPEA 2002) criticised the criteria prevailing until 2002 for ignoring recent advances in education and affecting the final index. According to the Institute, if the corrected values of the HDI components were used, the final results would be:

Table 5 Corrected values for the HDI components

	Values used in the HDR				Corrected values (1)			
Components	**1997**	**1998**	**1999**	**2000**	**1997**	**1998**	**1999**	**2000**
Life expectancy at birth	66.8	67.0	67.5	67.7	67.78	68.04	68.40	68.55
Literacy rate	84.0	84.5	84.9	85.2	85.3	86.2	86.7	86.3
Combined enrolment rate	80.0	84.0	80.0	80.0	78.9	83.0	84.6	84.6
Real GDP per capita (US$ PPP) (2)	6,480	6,625	7,037	7,625	6,480	6,625	7,037	7,625

Notes:

1) Corrected values obtained from the INEP/Ministry of Education (combined enrollment rate), National Household Surveys/IBGE (literacy rates and life expectancy at birth for 1997, 1998 and 1999) and the 2000 demographic census.
2) Calculated by the World Bank.

The outstanding improvement of the HDI in Brazil contrasts with its position among the most unequal countries in the world. In a ranking of 175 countries, Brazil's gini coefficient is the fifth worst in the world, behind only of four sub-Saharan countries. When poverty is considered, the pace of reduction in Brazil seems to be insufficient

[19] According to the US census Bureau in 2003 there are 11 countries with populations of or over 100 million: in order of largest to smallest, there are: China, India, United States, Indonesia, Brazil, Pakistan, Russia, Bangladesh, Nigeria, Japan, Mexico. See http://www.census.gov/cgi-bin/ipc/idbrank.pl

for allowing the country to reach the 2015 goal of reducing to 4.95% the rate of Brazilians living with a dollar a day (HDR 2003, CEPAL 2003).

Regional inequality is mentioned as a persistent challenge. In fact, the report projects that under the current circumstances, only the south of the country would be able to reach the millennium goal. Though there has been a substantial reduction of poverty in the northeast, it is still very high: in addition, poverty is severe in the urban areas of the north[20] where it rose from 36% (1990) to 44% (2001).

In order to capture local variations in the components of the HDI, the Institute of Applied Economic Research (IPEA), the Joao Pinheiro Foundation, and the UNDP developed a pioneer project that estimated the HDI for all the Brazilian municipalities. The first report came out in 1998, using census data from 1991. The most recent report was published in 2003, covering 5,507 municipalities existing in Brazil and updating the information according to the 2000 census.[21]

The results confirm that the human development index at a municipal level, has been improving in all the states of the federation and in almost all the municipalities. In 2000, 23 municipalities were classified in the low development category, 4,910 as of medium development, and 574 as highly developed municipalities. Education accounted for 60.78% of the improvement in the HDI-municipal level, income contributed 25.78% and life expectancy 13.44%. The HDI-municipal level illustrates regional inequalities more clearly. From the 100 top municipalities, only four are located outside the south/southeast: the archipelago of Fernando de Noronha (a natural resort), Brasilia (the capital), and two municipalities located in agricultural frontiers in the centre-west. On the other hand, all the 100 municipalities with lower HDI-municipal level are located either in the northeast or in the north.

Another important result refers to the ranking of states, based on the aggregate HDI-municipal level evolution during the nineties. Three northern states emerge as the worst performers; this is compatible with studies that have detected an increase in poverty in that region. Among the best performers were two northeastern states (Ceará and Bahia), and three states in the centre-west (Mato Grosso, Tocantins and Goiás). The results therefore confirm the improvement in the centre-west, one of the regions which most benefited from the export of agricultural products in the nineties.

The sections below address three areas in which policy planning (or its absence) has had a major impact on education, health and basic sanitation.

a) Education. The evolution of Brazilian indicators related to the education millennium goals has been very positive. The net enrolment rate for primary education has reached 97%, which is quite close to the goal of universalisation by 2015. In terms of equality of educational opportunity for boys and girls, the country

[20] Data based on the national household surveys, which in the case of the northern cover only the urban areas.

[21] The methodology used to estimate the HDI-municipal level differs from that used in the calculation of the HDI. The education component results from 2 indicators, the literacy rate of individuals above 15 years old (weight 2) and the school frequency rate (weight 1). For the component income, the per capita municipal average income was adopted. See IPEA, 'Entenda o cálculo do IDH Municipal (IDH-M)': www.ipea.gov.br

indicators show that the goal of equal proportion has already been reached. In fact, the proportion of women to men is already above 1 for the secondary and tertiary levels (see Table 6 p 18).

Adult literacy rates have improved from 82% in 1990 to 87.3% in 2001. Nevertheless, there still exists a large gap between the most developed regions and the least developed, as shown in Table 7:

Table 7 Illiteracy rate (15 years old and above) and regional inequality

	Year		
Region	**1996**	**1998**	**2001**
North	12.4	12.6	11.2
Northeast	**28.7**	**27.5**	**24.3**
Southeast	8.7	8.1	7.5
South	8.9	8.1	7.1
Centre-West	11.6	11.1	10.2
Brazil	**14.7**	**13.8**	**12.4**

Source: National Household Surveys 1996, 1998 and 2001 (Ministry of Education)

According to the standard adopted by the IBGE in national household surveys, literate individuals are defined as those who are able to read and write a simple message in Portuguese. However, this concept is limited and inadequate in measuring improvements in human capital. If the standard were changed to a minimum of four years of schooling completed, the number of illiterates in Brazil would grow from approximately 16 million to more than 30 million people (INEP 2003).

A key policy that has been associated with increasing enrolment rates is the Scholarship Program ('Programa Bolsa-Escola'). The initiative, first implemented by some municipal governments, was adopted into a federal program which is coordinated by the Ministry of Education. Its main function is to transfer cash to parents who ensure their children attend school, with a frequency rate of at least 85%. The target consists of families with per capita income of up to $ 90 Reais who have children between the ages of 6 and 15 years old that are enrolled in primary schools.

As the MDG targets are oriented to quantitative measures, they have to be combined with qualitative analyses in order to provide a more accurate picture of education in Brazil. In the Brazilian case, when quality is included in the discussion the initial enthusiasm is not sustained.

Various studies have identified the importance of high quality education as a tool to promote economic growth and income distribution.[22] Observing the evolution of education in Latin America, Birdsall, Londoño and O´Connell (1998) concluded that despite the increase in average years of schooling, the region continues to suffer from low and unequal accumulation of human capital.

Brazil's performance in the last OECD Program for International Student Assessment seems to confirm the notion that Brazil suffers from a low level of educational quality. In a ranking of 41 countries, Brazil placed 37th in terms of reading skills, and stayed

[22] Investigating the linkage between wages and education, Oliveira (2001) observed increasing returns in wages associated with higher levels of education.

ahead only of Peru in the math and sciences tests. A report from the Brazilian education ministry in 2003 identified that 59% of students in the 4th grade of primary education had not developed basic reading skills. High drop out and school evasion rates coupled with unequal income distribution and low and inefficient allocation of investment in primary education are some of the main determinants of the current crisis.[23] Therefore, despite improvements in access the quality of available education must be improved to give the poor the opportunity to work in highly skilled positions.

Though it may be necessary to increase overall investment in the educational sector, large gains could result from redistributing current levels of expenditure. Compared to other Latin American countries, Brazil spends a high proportion of its budget on education. However, as mentioned above the distribution of benefits tend to be regressive as public universities receive a relatively larger share of the educational budget.[24]

As in most Latin American countries, educational reforms tend to be politically complex, involving negotiations with powerful stakeholders. Despite these difficulties, improving quality in all levels of the educational system is an urgent matter. Human capital investment is the top requirement for any development policy aimed at providing the poor with opportunities for real social inclusion.

(b) Health The Brazilian performance on the MDG targets related to health exemplifies how public policies have been crucial. In a detailed analysis of the evolution of infant mortality in Brazil, McGuire (LASA, 2001) concluded that policy failures were the main determinants of Brazil's poor performance in basic health care from 1960 to 1995. During this period, Brazil outperformed all other Latin American countries, with rapid GDP per capita growth, accompanied by a steady decline in fertility rates. Infant mortality rates, though showing a steady decline, did not decrease as fast as it would be expected if economic performance were to be considered.

In the nineties and particularly after 1994, the Brazilian government implemented various policies which focused on preventive health care instead of curative health. The health system was decentralised and reforms were implemented which were guided by the principles of universalisation, free access and equity.

In addition to the programs – which had been successfully implemented by local governments – that focus upon the delivery of primary health care through health community agents, these programs were disseminated across the nation through the Family Health Program ('programa da saúde da família') and the Health Community Agents Program ('programa de agentes comunitários de saúde') by the federal government.[25] By the year 2001, the Health Community Agents Program had been

[23] News from the Brazilian Ministry of Education, 'Avaliação Internacional mostra desempenho de alunos em 41 países,'01.07.2003.

[24] The impressive growth of the tertiary education sector in Brazil in the last years has raised the discussion on the possibility of foreign investment in the sector. Though participation of foreign capital in the sector is not prohibited by the current legislation, the Brazilian government has rejected the possibility of including education as part of the WTO services negotiations. (O Estado de São Paulo, 21.08.2003, A-14).

[25] A pioneer local experience with health community agents occurred in the state of Ceará, where the program was launched in 1987. For a detailed review of the Ceara´s experience, see Tendler (1997).

implemented in 86% of the municipalities, with a larger presence in the poorer regions of the country: 90% in the north and 95% in the northeast.

The results of the transformation of the health system during the last decade were reflected in the overall improvement of health indicators, thereby, indicating that Brazil is on track to achieve the health-related millennium development goals by 2015 (see Table 6).

Despite these positive outcomes, Brazil is cited in the 2003 HDR as an example of a growing economy that leaves masses of excluded people behind. For instance, despite gains in decreasing the national incidence of infant mortality, the gap between rich and poor children mortality increased during the eighties and nineties. Measures must be taken to ensure that development is inclusive.

Regional discrepancies continue to mar Brazilian performance. In 1999 the overall infant mortality rate was 31.8%, but for the northeast the rate reached 52.4%. Overall, mortality caused by infectious and parasitic diseases have also declined. However, among the infectious diseases, intestinal infection continues to be particularly relevant in the northeast: in this region intestinal infection accounts for 34.6% cases of mortality in comparison to only 7.3% in the southeast. Scholars assert that inadequate basic sanitation is identified as an important contributing factor to these high levels of disease (Mello Jorge, Gotlieb and Laurenti 2001).

Since the mid-nineties, concerns with urban yellow fever and the dengue epidemics has risen. In 2000, 239,000 cases of dengue were registered, with the most affected regions being the north and the northeast. Data from 1995-1999 also indicates a rise in malaria cases,[26] however, this period also registers a decline in malaria related mortality rates due to the use of modern anti-malaria medicines.

Government promotion of vaccination has also shown positive results. By the year 2000, vaccination against measles, polio and tuberculosis (BCG) of children under 1 year old reached universal coverage in all regions.

(c) Basic Sanitation. Sanitation and access to safe water emerge as the indicators in which Brazil's performance has been quite poor: in these areas it risks not achieving the millennium targets. Inadequate coverage in the operation of the basic sanitation system has direct negative implications on the country's human development index. As mentioned above, the rate of death by infectious diseases increases in areas where the sanitation system is inexistent or of low quality. Moreover, inefficiencies in the sanitation system represent considerable economic losses.

A recent national survey coordinated by the Brazilian Institute of Geography and Statistics (IBGE 2003) evaluated the level of basic sanitation in the country. The study identifies 98% of Brazilian municipalities have access to water distribution; however, if the criteria adopted is household access, the percentage would drop to 64%. Approximately 92.8% of distributed water is treated. Nevertheless, the tendency in the nineties was toward an increase in the volume of non-treated water: untreated water increased from 4% in 1989 to 7.2% in 2003. In the northern region, the

[26] Abel and Lloyd-Sherlock (2000) call attention for the global re-emergence of infectious diseases and the negligible progress in diseases such as malaria and Chagas.

percentage of non-treated water reaches 32.4% of the distributed volume. Also, while 70.5% of the households in the southeast are connected to the water distribution network, in the northeast and the north, access rates decline to 53% and 44.3% respectively (See Table 6).

The sewage systems in Brazil are inadequate. Almost half of Brazil's municipalities and 67% of Brazilian households are not connected to a sewerage system. Between 1989 and 2000, despite an increase of 24% in the number of municipalities, sewerage services expanded only 10.5%. In 2000, only 52.2% of municipalities had sewerage collection services.[27] Since the problems are so immense, it seems unlikely that vast improvements will be made – in the near future – to ensure adequate sewerage facilities. From the 14.5 billion litres of sewage daily collected, only 5.1 billion litres benefit from some form of treatment. It is estimated that only 20.2% of all Brazilian municipalities have both collection and treatment systems.

According to the World Bank Group, up to 40% of the country's solid waste – around 40,000 tons a day – is not collected and of the waste that is collected, only 27% is disposed of or treated with environmentally sound methods.

In the nineties, the federal government implemented a program to expand the coverage and to modernise the sanitation system: measures included policy evaluation, performance measurement, and improvement to the national sanitation information system. During this period privatisation of the system began: this was part of the de-regulation process that was implemented throughout the country. However, survey data reveals that sanitation services continue to be provided predominantly by the public sector.

Partnerships with the private sector are a viable strategy to obtain the necessary investment to improve the sanitation system. However, the benefits of future privatisations are contingent on the prior definition of a transparent and adequate legal framework for the sector (Turolla 2003). In order to protect users and to assure the expansion of coverage to poorer regions an effective regulatory framework must be implemented.

Brazil's poor performance in sanitation has been attributed to the lack of government commitment to that sector during the nineties: this period was marked by insufficient funding, lack of institutional and regulatory frameworks, uncertainty regarding public-private partnerships, and fiscal constraints.

However, on January 8th 2004 the Minister of Cities, Olivio Dutra, announced R$12,1 billion to be invested in housing and sewage disposal in 2004: R$7.4 b and R$4.6 b respectively. The decision was part of the aims set by President Lula to generate employment by doubling the amount spent last year for those purposes. The government predicts that 1,47 million jobs will be created. However, the government's ability to put all that money towards housing and sewage is contingent on authorisation from IMF to enlarge Brazil's debt capacity now limited to R$2,9 billion.

[27] Brazil has a total of 5,507 municipalities.

However, in 2003 the government announced that it is working on regulatory proposals for basic sanitation. Under the Brazilian Constitution, municipal governments have the right to provide sanitation services directly or through concessions. Though state and federal institutions can provide the services, municipal governments hold concessional power. The main difficulty has been the definition of responsibility for each level of government: constitutional clarification is necessary to understand better the various provisions.[28] Regulatory bodies will also establish rules for government procurement; thereby, fulfilling an important prerequisite for the future participation of the private sector in delivering sanitation services.

Table 6 The Millennium Development Goals: Brazil

Goals	Targets	Indicators	1990/1991 (1)	Most Recent Year	Possible effects of liberalisation at Doha: + positive - negative	Prospects 2015
1) Eradicate extreme poverty and hunger	1.	1. 5 of population below US$ 1 per day (PPP)		9.9 (1998)	+ agricultural liberalisation will increase incomes and expand employment opportunities	Poverty reduction: risk Hunger: on track
		2. Poverty gap ratio: mean% distance below $ 1 per day (PPP)		3.2 (1998)		
		3. share of poorest quintile in national income or consumption		2.0 (1998)		
	2.	4. prevalence of underweight children (<5) %		6 (199)	- some dislocations will be caused, labour absorption depends on liberalisation in labour intensive sectors	
		5. proportion of population below minimum level of dietary energy consumption	13	10 (1999)		
2) Achieve universal primary education	3.	6. Net enrolment rate in primary school	86.4	97 (2000)	+ importance of skilled workforce will improve education levels	On track
		7. proportion of population below minimum level of dietary energy consumption	71.1 (2)			
		8. literacy rate of 15-24 year olds	91.8	95.8 (2003		
3)Promote gender equality and empower women	4.	9a. ratio of girls to boys in primary education		0.93 (2000)	N/A	Access to education: achieved
		9b. ratio of girls to boys in secondary education		1.07 (2000)		
		9c. ratio of girls to boys in tertiary education		1.28 (2000)		
		10. ratio of literate females to males 15-24 year olds.	1.03	1.03 (2000)		
		11. share of women in wage employment in the non agricultural sector	40.20	45.68 (2001)		
		12. proportion of seats held by women in national parliament (%)	5	9 (2003)		

[28] O Estado de São Paulo, 20/08/2003, p.A-6.

4) Reduce child mortality	5	13. under five mortality rate per 1,000 live births	60	36 (2001)	N/A	On track
		14. infant mortality rate per 1,000 live births	50	32 (2000)		
		15. proportion of 1 year old children immunised against measles	78	99 (1999)		
5) Improve maternal health	6	16. maternal mortality ratio per 100,000 live births		260 (1995)	N/A	
		17. proportion of births attended by skilled health personnel (5)		92 (3)		
6) Combat HIV/AIDS, malaria and other diseases	7	18. HIV prevalence among 15-24 year old pregnant women			+ TRIPs agreement improves access and ensures sustainability of Aids program	On track, very positive results on HIV/AIDS
		19. contraception prevalence rate; condom use, men aged 15-24 at last high-risk sex (%)		59 (1996)		
		20. number of children orphaned by HIV		130,000 (2001)		
	8.	21a. malaria prevalence, notified cases of per 100,000		344 (2000)		
		21b. malaria death rate per 100,000, ages 0-4		2 (2000)		
		22. proportion of population in malaria risk area using effective malaria prevention and treatment measures				
		23a. tuberculosis prevalence rate per 100,000		46 (2000)		
		23b. tuberculosis death rate per 100,000		10		
		24a. % of TB DOTS detection rate		8.3 (2001)		
		24b. % TB DOTS cure		73 (2000)		
7) Ensure environmental sustainability	9.	25. proportion of land area covered by forest	67	64.3 (2000)	Possible future inclusion of environment in trade will hinder ability to decrease poverty	High risk on basic sanitation and safe water
		26. protected area ratio to surface area		0.06 (1997)		
		27. energy supply (apparent consumption, kg oil equivalent) per $1,000 GDP	169.47	148.48		
		28a. carbon dioxide emissions, metric tons of CO2 per capita	1,362	1,774 (1999)	+ manufacturing liberalisation makes environmentally friendly technology available	
		28b. ozone-depleting CFCs consumption in ODP metric tons	8,539	6,231 (2001		
	10.	29. % of population with access to improved drinking water sources	83	87 (2000)	+ Liberalisation can encourage private sector investment in infrastructure	
	11.	30. % of people with access to secure tenure	n/a	n/a		

8) Develop a global partnership for development	16	45. share of youth unemployed to youth population, both sexes (%)	4.3 (4)	11.1 (2001) (5)		
	17.	45. access to essential drugs		Between 50% and 80% (1997)	+ TRIPs and services liberalisation will improve access	
	18.	47. telephone lines and cellular subscribers per 100 pop.	6.5	42.38 (2002)		
		48. personal computer per 100 pop	0.31	7.48		

(1) Most recent year available.
(2) Data from the UNDP-Brazil web site. Use of UNDP-Brazil web site data when information was not available from the UNDP web site.
(3) Most recent year available for the period 1995-2003
(4) Excluding rural population from the states of Rondonia, Acre, Amazonas, Roraima, Pará and Amapá.
(5) April-November 2001. Remarks: methodology revised.
Source: United Nations Statistics Division/Millennium Development Goals

3.2 Agriculture

Brazil's position as a highly competitive country in agriculture coupled with the importance of this sector for the country's exports and its goal of reducing poverty explains why agriculture is the key sector under negotiation for Brazil.

Nevertheless, the slow progress in agricultural liberalisation in the developed world, and the current state of affairs in trade negotiations indicates that a good dose of caution is necessary in assessing the likely outcomes of the Doha Development Round.

In the case of the EU, although the Common Agricultural Policy (CAP) reform was considered an important advance, it has focused essentially on export subsidies. With the accession of Eastern European countries in the EU, it is unlikely that further reforms of the CAP will happen in the near future. This fact, combined with an international economic slowdown, may result in agricultural liberalisation not occurring as fast and as broadly as it is demanded by competitive agricultural exporting countries.

The EC-US jointly presented text to the WTO[29] only increased concerns, leading to the formation of the G20 group and its proposal. Examination of the three main agricultural drafts circulated by WTO representatives since the beginning of the Doha Round illustrates that the overall level of ambition has dramatically declined (see section 1) (Jank 2003).[30] Nevertheless, if one examines the several country and coalition proposals in the modalities and frameworks phases, it is clear that the distance separating them has become significantly smaller in the second phase of negotiations.

However, the inclusion of the new category of 'net food exporting countries' in the EC-US text as subject to a different set of rules and disciplines with relation to the

[29] EC-US Joint Text, Agriculture, 13 August 2003.
[30] The three main agricultural drafts circulated by WTO representatives are the Stuart Harbinson, Carlos Perez del Castillo and Luis Ernesto Derbez Bautista drafts.

special and differential treatment could, in practice, generate an odd situation. The paradox would be that developing countries which have adjusted to the liberalisation of the trade system by becoming highly competitive in the areas in which they possess a comparative advantage, such as agriculture, and which do not benefit from non-bilateral preferential schemes, would be 'punished.'

As the Doha Development Agenda clearly expresses, WTO Members agreed upon the promotion of mechanisms that could help the developing world to benefit from trade liberalisation. However, in building the eventual S&D system care should be taken to avoid the use of development discourse as a tool for solidifying unfair protectionism in the developed world. Some developing countries, such as Mercosur members, do not benefit from preferential schemes with the US or the EU. Nevertheless, they too are developing countries, for which the benefits of international trade liberalisation are directly related to greater access to international agricultural markets. The design of the S&D system should therefore seek to balance the interests of all developing countries and avoid double standards.

The first section of this chapter explores Brazilian agricultural exports: data are given on the country's main agricultural export products. The next section refers to the trade barriers faced by Brazil on such products and evaluates the possible impact on agricultural exports vis-à-vis the draft proposal presented by the chairman of the WTO Committee on Agriculture, Stuart Harbinson and the revised Draft Ministerial Text authored by the chairman of the Cancún conference, Mexican Secretary of External Relations Luis Ernesto Derbez Bautista.[31] The conclusion highlights the potential effects of agricultural liberalisation on the poor: it explores how important domestic policies are necessary to ensure that external liberalisation is pro-poor.

Agricultural exports: leading products.

The period between 1995 and 2002 witnessed a reversal in Brazil's balance of payments: in 2001 and 2002, due to agribusiness exports, Brazil experienced a trade surplus. In 2002, agribusiness products represented about 41% of Brazilian total exports, as shown in Table 8. For the same year, while GDP grew only 1.52%, the agricultural sector had an estimated growth of 5.79%**.**[32]

[31] WTO 13 September 2003

[32] Brazilian Institute of Geography and Statistics (IBGE) homepage: www.ibge.gov.br. From a methodological point of view, it is important to note that Table 1 uses estimates from the Ministry of Agriculture, whose classification of categories included in the agribusiness is broader than the WTO classification. The Brazilian agribusiness includes categories such as leather/leather shoes, wood and wood products, timber and paper among others. A complete list of the categories is available in Portuguese at: www.agricultura.gov.br/spc/balanca/agronegocio2003.pdf All other tables presented in this section, however, follow the WTO international definition.

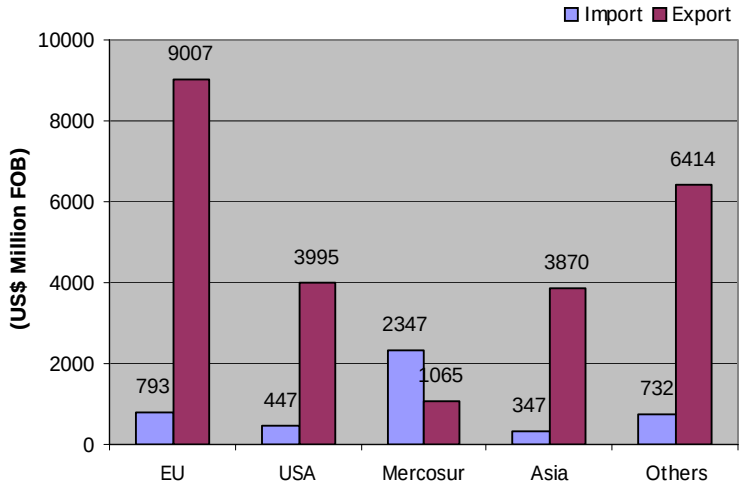
Table 8: Brazilian agribusiness and the trade balance (US$ million), according to the Ministry of Agriculture classification

Balance	2002			2001			Relative variation		
	Exp	Imp	Balance	Exp	Imp	Balance	Exp	Imp	Balance
Total trade	60,362	47,232	13,130	58,223	55,572	2,651	3,67	-15,01	395,28
Other products	35,523	42,740	-7,217	34,360	50,725	-16,365	3,38	-15,74	-55,90
Agribusiness	24,839	4,492	20,347	23,863	4,847	19,016	4,09	-7,32	7,00
Participation (%)	41.15	9.51		40.99	8.72		0.40	9.04	

Source: Ministry of Agriculture (2002).

In relation to agricultural export destinations and import origins, the main trade partners are the EU and the US, with Asia assuming a growing importance in the last years (see Graph 2 and **Annex, Table A2**). Thus, highly protectionist policies in these export markets deny the expansion of Brazil's agricultural sector; thereby, limiting employment opportunities.

Graph 2 Export destination/Import origin (Average 2001-2002)



Note: Data based on the Ministry of Agriculture classification, which includes more categories than the WTO classification.
Source: The Brazilian Ministry of Agriculture (2002)

As shown in Table 9, 88% of Brazilian agribusiness exports refer to a bundle of 12 groups of products: soybean complex, sugar, coffee, poultry, beef, orange juice, tobacco, pork, fruits, cocoa, corn, and cotton. Considering the performance of each of these groups since 1995 (see **Annex, Table A3**), it is possible to identify that:

- Soybean products are the main agricultural export. There has been great growth in exports of soybean grain: from 1995 to 2001 grain exports have increased by 349%. However, the export level of soybean meal and oil has largely remained stagnant.
- Though coffee continues to occupy a high ranking in Brazil's agricultural exports and the volume of coffee exports have increased since 1995, the international coffee market has suffered from a trend of price depreciation paid to producers during the 1990s.

- Meat exports (beef, poultry, and pork) have shown a continuous expansion since 1995.
- Brazil has a comparative advantage in the fruits and nuts market (Gasques and Conceição 2000), it is likely that Brazil can expand its exports in this sector.

Table 9 Main agricultural exports

Group	N.	MCN-8	DESCRIPTION	Brazilian Exports(Average 2000-02)	
				US$ Million	%
Soybean	1	1201.00.90	Grains	2,642	17.2%
	2	2304.00.90	Meal	1,969	12.9%
	3	1507.10.00	Oil	462	3.0%
Sugar	4	1701.11.00	Raw	1,089	7.1%
	5	1701.99.00	Other	765	5.0%
	6	2207.10.00	Ethyl alcohol	98	0.6%
Coffee	7	0901.11.10	Not roasted	1,314	8.6%
	8	2101.11.10	Instant coffee	185	1.2%
Poultry	9	0207.12.00	Chicken uncuts (frozen)	705	4.6%
	10	0207.14.00	Chicken cuts (frozen)	438	2.9%
	11	0207.27.00	Turkey cuts (frozen)	90	0.6%
Beef	12	0202.30.00	Boneless (frozen)	447	2.9%
	13	1602.50.00	Preparation	267	1.7%
	14	0201.30.00	Boneless (chilled)	225	1.5%
Juices	15	2009.11.00	Orange juice (frozen, not fermented)	900	5.9%
Tobacco	16	2401.20.00	Non-manufactured	809	5.3%
Pork	17	0203.29.00	Others (frozen)	219	1.4%
	18	0203.21.00	Carcasses (frozen)	82	0.5%
	19	0203.11.00	Carcasses (chilled)	19	0.1%
Fruits	20	0801.32.00	Cashew nuts	127	0.8%
	21	0807.19.00	Melons	46	0.3%
	22	0807.20.00	Papayas	34	0.2%
	23	0804.50.00	Guava and mangoes	23	0.2%
	24	0806.10.00	Grapes	21	0.1%
	25	0803.00.00	Bananas	19	0.1%
	26	0805.10.00	Oranges	17	0.1%
Corn	27	1005.90.10	Grains	242	1.6%
Cocoa	28	1804.00.00	Butter, fat and oil	63	0.4%
	29	1806.90.00	Chocolate, and other prep.	54	0.4%
	30	1805.00.00	Powder (sugar free)	21	0.1%
Cotton	31	5201.00.00	Not carded or combed	89	0.6%
TOTAL			**Listed products**	**13,482**	**88.0%**
			Brazilian agribusiness (1)	**15,321**	**100.0%**

(1) Classification of the agribusiness according to the WTO.
Elaborated by: ICONE

To estimate the international competitiveness for selected agricultural products, Gasques and Conceição (2002) use data from the International Trade Statistics Yearbook for the period between 1994 and 1997/98. Their analysis includes twenty-three products and comprises of countries that represent more than 90% of world exports of the product under consideration.[33] The results confirm the competitiveness of Brazil in the world market. They find that Brazil is endowed with a comparative advantage in sugar, coffee, fruits and tobacco; in addition to these products, it leads the world market in vegetable oil, and oil seeds (soybean mainly).

Applying a similar exercise on the main Brazilian export products, but extending it to the period between 1996 and 2001, the authors detect that Brazil has lost ground in the world market for products such as coffee, cocoa, and orange juice, but they find improved performance in soybean (grains), sugar, and meat.

However, the analysis by Gasques and Conceição also exposes the risks related to export dependency on agricultural products as the international agricultural market has been characterised by slow growth, adverse price trends, and high protectionism (Oxfam 2002). Therefore, Brazilian domestic strategies could involve agricultural diversification and commercialisation of products with higher added value. However, the ability to diversify its agricultural sector is contingent on a more open international agricultural market.

Agricultural negotiations

This section provides an assessment of the main barriers faced by the products listed in Table 8 and it considers the possible effects of proposals presented in the negotiations. In relation to the initial goals of the Doha Development Round, Harbinson's paper can be seen as satisfactory: in comparison to the joint EC-US text it is ambitious, it registers a similar level of ambition as the G-22 proposal, but it falls short in relation to the goals of the Cairns group (Jank 2003).[34] A summary of the protectionist policies in the US, EU, and Japan on the main products exported by Brazil is presented in the Annex, Table A4.

Market access

The prospect of increasing market access for agricultural goods is quite low. Harbinson proposes that developed countries reduce their tariffs as follows: an average reduction of 60% for tariffs higher than 90%, with a minimum cut per tariff line of 45%, an average reduction of 50% and a minimum of 35% per tariff line for tariffs ranging from 15% to 90%, and an average reduction of 40% and a minimum of 25% per tariff line for tariffs of up to 15%.[35]

[33] Argentina, Australia, Belgium, Brazil, Canada, Chile, China, Colombia, Denmark, France, Germany, Greece, Hong Kong, India, Indonesia, Italy, Japan, Malaysia, Mexico, Norway, New Zealand, Netherlands, Paraguay, Peru, Poland, Portugal, Russia, Spain, Sweden, Thailand, United Kingdom, United States, and Uruguay.

[34] The Cairns group consists of 17 agricultural exporting countries that support trade liberalization in agriculture. The group was created in 1986 in the city of Cairns (Australia), and is made up of Argentina, Australia, Bolivia, Brazil, Canada, Chile, Columbia, Costa Rica, Guatemala, Indonesia, Malaysia, New Zealand, Paraguay, the Philippines, South Africa, Thailand and Uruguay. The total of these countries agricultural exports account for one-third of world agricultural exports. See Jank 2003

[35] Different percentages and tariff levels are proposed for developing countries. Due to the possibility of S&D treatment, however, it is difficult to estimate the likely outcomes.

The Institute for International Trade Negotiations (ICONE) examined the potential impact of Harbinson´s proposal on Brazil. Considering the flexibility of the proposed mechanism and the expectation that developed countries would adopt the minimum cut option, the study concludes that the proposed tariff cuts would not be sufficient to eliminate the tariff peaks affecting strategic Brazilian products[36] (*see* the **Annex, Table A5**). The study classifies tariff peaks as tariffs remaining above 25% post-Harbinson, and finds that more than 80% of the current tariff peaks will continue to exist.

Although, the Derbez Text created a minimum level of overall tariff reductions across all agriculture products, it did not effectively deal with tariff peaks: it provided developed countries with the additional flexibility to exclude, on the basis of non trade concerns, a limited number of products from the tariff capping requirement. In effect this negates the efficacy of a tariff cap as it would permit developed countries to avoid capping their highest tariff rates.

Orange juice, soybean grains, un-roasted coffee, and cocoa powder already face low tariffs, but the scenario changes considerably for processed products as these are subject to higher tariff rates. Sugar would remain the 'symbol' of protectionism in agriculture: despite the tariff cuts sugar will remain heavily protected. Brazil wants negotiations to commence on the tariff rate quota system.[37] In Harbinson´s proposal the problems related to the administration of the tariff rate quota system and the use of preferential agreements to fulfil the quotas remain unsolved. However, Derbez's text includes the ideas of in-quota tariff reduction, and elimination of tariffs for all tropical and other products referred to in the preamble of the Uruguay Round Agreement on Agriculture.

Domestic support

Domestic support mechanisms in developed and developing countries affect eight of the twelve groups of agricultural products that are important for Brazil's agricultural sector: soybean, sugar, beef, tobacco, pork, fruits, corn, and cotton. Harbinson proposes a global reduction of 60% of the final bound total aggregate measure of support (AMS) over five years for developed countries, and a 40% reduction over a ten-year period for developing countries.

Based on this proposal, countries could maintain high levels of support for selected products; this could be achieved by compensating cuts with reallocation of subsidies and increasing expenditure on non-specific products. Derbez's text attempted to deal with these issues by: calling for a cap for product specific AMS; ordering an initial cut in the sum of total AMS and de minimis payments in the first year of implementation; and a requirement to review Green Box criteria in order to ensure that measures that fit in this box have no, or minimal, trade distorting effects or effects on production. Derbez's text also echoed Perez del Castillo's Draft Ministerial Text as it provided developing countries with additional S&D treatment, including longer reduction rates, longer implementation periods and no requirement to reduce de minimis payments.
The provision in Derbez's Text that dealt with Green Box criteria was seen as important as Harbinson's proposal risked the intensification of green box subsidies.

[36] The estimates do not incorporate the 1.3 factor proposed in item 8 of the Harbinson proposal.
[37] Brazilian Mission in Geneva, 'Carta de Genebra,' Year 2, N.5 (May/June 2003)

The manifestation of this is the Production Flexibility Contract of the US FAIR Act of 1996, The Farm Bill of 2002 and the CAP Reform (e.g. Single Farm Payments). These developments could exacerbate international price distortions as domestic subsidies skew market prices.[38]

Export competition

Export competition seems to be the only pillar for which advances towards an agreement seem to be close. The recent CAP reform focuses mainly on the reduction of export subsidies; this is an important step as the EU relies heavily on such subsidies.

EU export subsidies affect sugar and alcohol, meat (beef, poultry and pork), fruits and corn. US subsidies do not affect exports of these products as it adapted its policies to the terms of the Agreement on Agriculture (AoA)[39]: as a result, the United States has decreased its export subsidies. According to Jank and Arashiro (2001), between 1990 and 1995, the United States spent US$ 5.2 billion on direct export subsidies; however, by 2000 the US had almost completely eliminated its use of subsidies.

Although export subsidies have decreased, the US has maintained high expenditures on export credit guarantees as these are beyond the scope of the AoA. For example, in 2000, export credit guarantee expenditures reached US$ 3,082 million. The OECD (2001) estimated that the impact of US credit export mechanisms are at least twice as high as export credit guarantees of other OECD countries. Contrary to the argument that export credits benefit Least Developed Countries (LDC) and Net Food Importing Developing Countries (NFIDCs), the same study asserted that more than 50% of the benefits were given to intra-OECD country exports. In the United States, between 1995 and 1998, only 17.3% of credit guarantees were related to NFIDC exports and no LDC participated in the scheme. Despite their distorting affects, negotiations on export credits ended in 2000, without an agreement.

However, Zoellick (2004) has recently indicated a willingness in the US to dismantle the subsidy component of export credit programs. This commitment is part of Zoellick's overall effort to remove export subsidies as he feels this is the only way to overcome the deadlock at Doha; thus, he asserted that the US stands by its 2002 proposal to eliminate all trade distorting subsidies and barriers to market access. Progress in eliminating subsidies may be close as the EU has also shown a willingness to phase out all forms of export subsidies on sensitive products to developing countries, including Brazil.

Derbez's text called for the need for reforms of export subsidies and export credit programs to proceed in tandem: it also called for the establishment of a list with the purpose of tabling comprehensive draft schedules of products for which export subsidies should be eliminated. For export credits, discussions concentrate on interest rate, repayment terms, and the adoption of S&D rules. The Cairns Group shares

[38] Marcos Jank, presentation during the Symposium 'Estado Atual das Negociações Comerciais na OMC e ALCA,' August 5, 2003, Campinas, Brazil.

[39] The Agreement on Agriculture was signed at the conclusion of the Uruguay Round: this was the first step toward disciplining agricultural trade protectionism. For a further explanation of how liberalization in agriculture has and may occur, see Jank 2003.

Harbinson´s proposal of limiting the repayment term to 180 days, and a rules-based approach. A set of more transparent disciplines is also defended for food aid.

Special and differential treatment

Discussions on S&D treatment have recently intensified. The content of many proposals, plus the recent EC-US statement creating the category of 'net food exporting countries,' raises fears in agricultural exporting developing countries that the S&D treatment could become an instrument for justifying protectionism and increasing the use of preferences in international agricultural markets.

It is fundamental to provide rules regulating the use of S&D mechanisms and proposing a schedule for the gradual elimination of protectionist mechanisms. However, it is vital to assess whether the adoption of further protection is actually beneficial for developing countries: greater economic benefits could be achieved through the removal of trade barriers in the developed world.

As Michalopoulos (2003) points out, the experience with preferences under the Generalized System of Preferences, which essentially addressed manufacturing, indicates that while preferences have been helpful to some countries within limited periods of time, they are not efficient as a means to improve generalised access to developed country markets. In terms of the strategy for agriculture negotiations, the author stresses that instead of concentrating efforts on strengthening the S&D treatment there should be a 'generalized effort by developing countries to push for substantial reduction of developed country protection on an MFN basis and total elimination of export subsidies at the earliest possible time.'

Poverty effects

Agricultural liberalisation has been heralded as an important tool in the alleviation of poverty as it can lead to economic growth; however, poverty alleviation in Brazil requires economic growth and specific anti-poverty policies (World Bank 2003). To ensure liberalisation positively affects the poor, fundamental domestic measures must be implemented.

Agricultural liberalisation could alleviate poverty in Brazil as the country has a comparative advantage in several agricultural goods. Liberalisation of this sector would result in increased world demand; thereby, expanding production and employment opportunities. Benefits to the poor derive from an increase in wages for agricultural labour, regional development, such as improvements to infrastructure, employment opportunities for low-skilled workers and a new demand for workers in activities associated with agricultural exports and production. In addition, liberalisation would decrease poverty by creating a more productive commercial agricultural sector by making important productivity enhancing imports more accessible.

Although agricultural intensification of the small farm sector is not an agricultural growth strategy per se, it is an essential component of a rural poverty alleviation strategy (World Bank 2003); accordingly, the structure of agriculture in Brazil could hinder success of this strategy in alleviating poverty. Brazil's agrarian structure derives from its colonial roots. During colonial rule large plots of land were tended by slaves and landownership was concentrated in the hands of a few landowners. This

archaic structure has remained intact until the mid 1990s. In part, agrarian conflicts and the absence of any rural reform to modify the traditional agrarian structure resulted in Fernando Cardoso, in 1995, implementing a land-reform program to settle landless peasants. The need to redistribute land is illustrated by Bryant's (1998) findings: he claims that 40% of Brazil's farmers share 1% of all farmable land; whereas, the richest 20% own 88% of all land.

Currently, Brazil's agricultural sector is divided into two sectors: the first sector is linked to exports; its success derives from an intensive process of modernisation, and its reliance on modern technology. Ownership in this sector is highly concentrated.[40] Agricultural liberalisation thus far benefited large scale, technologically advanced, export oriented agriculture rather than small scale farmers (Patel 2003). The second sector is refereed to as family-based agriculture; this sector farms on small properties and provides goods for local consumption—its survival is precarious.

In terms of poverty alleviation, it is important to encourage the intensification of the small scale farm sector as the expansion of commercial farming exports, 'latifundios', has resulted in the concentration of benefits to industrial farmers. Although latifundios generate large outputs, their capital intensive nature may translate into limited employment opportunities.

Brazil's explosion of soybean exports, for instance, has not been matched by commensurate advances in rural poverty reduction (Oxfam 2002, 54) as it is capital intensive. Although earnings have jumped from US$393 million in 1980 to US$2.7 billion in 2001, profits have disproportionately benefited a few large producers: thirty-five exporters are responsible for 95% of Brazil's soy exports (Patel 2003, 26).[41] Tangible benefits to the poor from the expansion of soy exports remain restricted as the soy industry generates little employment: a 1000 hectare soybean farm, for example, employs only three people.

Land reform is important as it will generate increased opportunity in the agricultural sector: Patel (2003) highlights a study from 1993 which illustrated that small scale farming is more productive per hectare as large estates on average farm only 2% of their land; whereas, small farms cultivate 90% of their land. In addition, Patel highlights that small scale farming could increase employment opportunities as large farms occupy 45% of all land and employ only 4% of the rural workforce; conversely, small scale farms cover only 20% of land but employ 79% of the workforce.[42] Moreover, small scale farming generates more jobs: large farms require 100 hectares to generate a job, whereas small farms only need 9.

Nevertheless, a dynamic commercial agriculture sector could increase employment and reduce rural poverty directly. For example, efficient, market-driven expansion of irrigated areas in the Northeast can create new opportunities. To ensure that growth

[40] According to IBGE data from 1995, farms larger than a thousand acres represented 1.02% of the total number of farm units but 45.20% of the total area. In contrast, small units of less than fifty acres represented 52.55% of the total number of units, but only 12.20% of the total area.

[41] For an evolution on the Soy Bean industry and how Brazil developed a comparative advantage in this sector, see Patel, Raj 2003.

[42] Large farms are defined as ones greater than 1000 hectares and small farms are those which are smaller than 100 hectares.

and increased employment is achieved improvements in the workings of the factor markets, labour, water, land, and capital is essential. To enable the poor to benefit from agricultural dynamism, it is necessary to improve education levels and reform the labour code as this will increase the chances of one obtaining employment in the commercial agriculture sector (World Bank 2003).

Improving access is essential as Oxfam asserts that the poor have not been able to gain from agricultural liberalisation thus far as 'the rural poor lack access to the land and marketing infrastructure that they need in order to participate in markets.' The Oxfam report concluded that a highly concentrated systems of land ownership and gender inequalities distort the link between poverty alleviation and agricultural trade (2002, 54).

Some of the policy deficiencies that hinder the ability of the poor to benefit from liberalisation are a result of austerity plans that Brazil implemented in the 1980s. These measures contributed to the plight of small scale farmers: to reduce the fiscal deficit Brazil removed programs that ensured farmers had access to low interest rural credit, producer price supports, and marketing services. Interest rates, for instance, were very high by the end of the 1990s: in 1998 the lending interest rate was 86% and in 2001 it was 58%. Small scale farmers were particularly hit hard as many lacked sufficient disposable income to invest in seeds, fertiliser, and other important agricultural inputs.

It is important to increase farmers' access to resources as a key factor contributing to agricultural productivity is that returns to farmland are highly dependent on the levels of complimentary productive inputs (purchased inputs and machinery) and demographic factors (like age of operator and level of education) (World Bank 2003). Therefore, for land to have large productivity and revenue increasing impact in farming, the government must improve other factors.

Expansion of large scale farming will yield benefits to the poor: agriculture liberalisation will create jobs and other income generating activities related to the growth of the agribusiness. Gains to the poor will be in the form of infrastructural development, such as improved transportation systems: to ensure the poor gain, the government must ensure that roads are extended into poor communities. Improving small scale farmers' access to roads can help farmers obtain higher prices for their goods. Moreover, to make agricultural trade work for the poor, the government must not only improve access to land and marketing infrastructure, it must also improve access to credit schemes (by enabling the poor to use their land as collateral), develop cooperative marketing schemes, and improve access to information so that poor farmers have the ability to export their goods.

Although agricultural liberalisation can play an important role in rural poverty alleviation, it is important to note that the majority of the poor live in urban areas, but poverty in rural areas is a major problem as the proportion of poor relative to population is concentrated in rural regions (see poverty section above). For example, Rocha's (2000) analysis of poverty levels relative to the total population in rural, urban and metropolitan areas, estimates that the proportion of poor is 42.84% in rural areas, 31.30% in urban areas, and 33.18% in metropolitan areas.

This analysis illustrates the importance of caution when estimating the effects that agricultural liberalisation can have on the poor. Although it is not conclusive that the distribution of gains will be progressive, liberalisation of agriculture coupled with effective domestic policies will generate opportunity and equip the poor with the chance to work their way out of poverty.

Various authors have identified structural problems of unequal income distribution and regional inequalities as strictly related to the persistence of poverty in Brazil (Barros, Henriques and Mendonça 2001, Rocha 2000, among others). For instance, the Northeast/North regions continue to hold unfavourable social indicators when contrasted to the Centre/South and the agribusiness is primarily located in the latter. Accordingly, a more detailed analysis would have to be made, incorporating regional allocation of the potential gains, and changes in labour market structure, in order to better assess the impact of agricultural liberalisation on the poor in Brazil.

In sum, the best option for Brazil would be a massive removal of agricultural tariff and non-tariff barriers in developed countries. However, political realities dictate that Brazil might have to adopt a 'second best' strategy; this involves insisting on a partial liberalisation of tariffs and tariff quotas, and establishing stricter disciplines on subsidies reduction on a product-specific basis; thus, helping to curb the many exceptions allowed by the AoA. If this option becomes unviable a third alternative would be to focus on negotiating down trade distorting domestic support measures (amber and blue boxes), and to negotiate market access issues through regional and/or bilateral agreements (Jank & Araugo 2003). The third option may become the only 'possible' option for developing countries that are competitive in agriculture; however, the proliferation of regional and bilateral agreements could further distort international (agricultural) trade and create an even more complex negotiating environment.

3.3 Services

This chapter offers an overview of the services sector in Brazil and of its role in foreign direct investment flows. It also examines the challenges of implementing adequate regulatory frameworks after privatisations and how liberalisation of services could affect levels of poverty.

Despite the slow progress in liberalisation in services, liberalisation of this sector could result in large economic gains for Brazil. The GATS can play an important role in developing the Brazilian economy as it has the ability to promote economic development, competitiveness and productivity. The liberalisation of services can increase competition, lower prices, generate innovation, transfer technology, create employment and facilitate greater transparency and predictability in trade and investment flows (Gillson 2003). Despite these gains, liberalisation in services must contribute to other legitimate goals, such as social development and equity objectives. It is important that the Brazilian state implement public policies to address market failures and regulatory agencies to ensure that the goals of efficiency and social development are obtainable.

Brazil committed in GATS: services provided to companies, communications, construction, distribution, financial services, tourism, and transport. The Brazilian list included seven of the eleven sectors used as a reference, with the exclusion of some sub-groups (Marconini 2003).

However, the Doha Round[43] has witnessed negotiations on market access for services advancing faster than other negotiating areas and so Brazil has adopted a more reserved position, using services as a bargaining tool for obtaining concessions in areas where the country holds major interests, such as protecting capital intensive industries and agriculture.

In June 2002, Brazil participated in the process of initial offers/requests for market access, making requests to eighteen countries and receiving nineteen requests. Apart from that, however, it has advanced little in terms of concrete proposals. It has not presented an official list of initial offers, due on March 31, 2003, and it has emphasised the importance of linking the discussions on services with other areas under negotiation.[44]

It is clear that at least in the short-run, Brazil will insist on achieving some gains in agriculture before any further concession are made in other areas. It is worth noting that in terms of strategy, the Doha negotiations are particularly relevant to Brazil due to their potential effects on parallel regional negotiations, such as Mercosur commitments, and EU-Mercosur and FTAA negotiations.

At the regional level, Brazil signed the Montevideo Protocol (1997), which is still pending implementation. The Protocol sets the guidelines for services liberalisation within Mercosur that are more ambitious than the GATS. Its scope is to completely eliminate restrictions affecting trade in services, in a period of ten years from its implementation (Stephenson 2001).

Services sector profile

The service sector contributes approximately 60% of Brazilian GDP (see Annex, Table A6). In a ranking of the twenty top companies, based on the aggregated value generated to the national economy, eleven belong to the service sector (Marconini 2003).

Services also employ the largest share of the economically occupied population.[45] Based on the National Household Survey conducted by the Brazilian Institute of

[43] Under the terms of the GATS, negotiation rounds should occur every five years: the goal of these is to expand and deepen the international liberalisation of the service sector.

[44] Brazilian Mission in Geneva, 'Carta de Genebra' 2.5 (May/June) 2003

[45] The economically active population (PEA) includes all individuals of 10 years old or more: it includes people who are 'occupied and not occupied' during the reference period of the survey. The economically occupied population is the share of the PEA who had a remunerated activity during the reference period: the not occupied is the share of the PEA who was not employed but had searched for a job during the reference period. Ministry of Labour: 'A População Economicamente Ativa (PEA) corresponde ao conjunto das pessoas com idade igual ou superior a 10 anos, ocupadas e desocupadas no período de referência de sete dias. As pessoas ocupadas são aquelas que tinham trabalho durante todo ou parte do período de referência assim como aquelas que, embora tivessem trabalho remunerado, não o exerceram no período de referência por motivo de férias, licença, greve, etc. As pessoas

Geography and Statistics (IBGE), in 2001, 66% of the occupied population was in the services sector, 20.6% in agriculture, and 13.4% in the manufacturing (see **Annex, Table A7**).

Considering the potential of this sector to generate economic growth and alleviate poverty, it is surprising that attempts to analyse the sector continue to face the problem of poor data. The absence of disaggregated statistics on trade in services has been pointed out as one of the main difficulties in developing a detailed assessment of the potential impact of services liberalisation (Marconini 2003, Sally 2000). Lack of high quality information has had serious implications not only for private sector analyses, but also for the elaboration of public policies related to services that were privatised (Marconini 2003).

In response to this demand, an inter-ministerial group has recently been created:[46] its objective is to develop a statistical system on trade in services. The new system could become an important tool for more refined analyses of the potential impact of the WTO, FTAA and EU-MERCOSUR negotiations on services.

Despite existing constraints, Hees (2002) identifies some sectors where service exports have increased:

- Exports of cross border services rose from US$ 3.7 billion in 1990 to US$ 8.7 billion in 2000;
- Business, professional and technical services represented US$ 3.9 billion (44.6%), followed by travel (20,8%) and transportation (14,8%);
- Engineering services increased from US$ 235 million in 1995 to US$ 1.5 billion in 2000; construction increased from US$ 7 million in 1996 to US$ 121 million in 2000; and software services increased from US$ 34 million in 1995 to US$ 63 million in 2001;
- Audiovisual revenues also increased, due to exports of films and soap operas to Europe, Latin America, and the US: the expanding Latino population in these regions could continue to fuel audiovisual exports. Between 1999 and the first semester of 2001, these exports generated revenues of US$ 324 million, including royalties, copyrights, patents, and licenses.

The banking sector is another area in which there seems to be a potential for export. According to Roberto Luis Troster,[47] chief economist of the Brazilian Federation of Banks (Febraban), the Brazilian banking sector is technically very competitive, with sophisticated technological systems that could be exported to other developing countries. Liberalisation of financial services could therefore offer opportunities for the national institutions to reach new markets, particularly in Latin America. As an importer of financial services, however, Brazil should be cautious. The experience

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desocupadas correspondem às que, no período de referência, não tinham trabalho mas tomaram alguma providência efetiva de procura por trabalho.'

[46] Central Bank (BACEN), Ministry of Development, Industry and Trade (MDIC), Ministry of Foreign Affairs (MRE) and the Institute of Applied Economics Research (IPEA)

[47] Panelist, Symposium 'Estado atual das negociações comerciais na OMC e Alca,' August 5, 2003, Campinas.

during the nineties, when the financial sector was *de facto* open, shows that competition can intensify in the market niches that are already highly profitable, with little benefits in expansion of coverage and a risk of increasing concentration in the sector.

The regulatory agencies

The intense debate on the role and performance of the regulatory agencies in Brazil demonstrates the profound transformations occurring in the country since the early 1990s. The process of privatisation and liberalisation in the trade of goods and services has increased the importance of developing an improved institutional framework to respond to the new challenges faced by the state.

The regulatory agencies emerged[48] with the purpose of balancing the private interests of investors with the interests of the public. Lack of previous experience coupled with a short-time period to implement the agencies, resulted in the creation of a variety of institutions in which unclear mandates, legal conflicts, and problems of capacity building are a frequent challenge. Between 1996 and 2001, nine new agencies were created, with five established between 2000/2001. At the sub-national level, fourteen regulatory agencies were created from 1997-2001 (Pinheiro 2003). Salgado (2003), suggests that Brazilian regulatory agencies are marred by a complex legal framework: the institutions have a mix of executive (concession and monitoring), legislative (rules and procedures with normative power within their jurisdiction) and judiciary (penalties, interpretation of contracts) functions, which can negatively affect their performance.

The process of de-regulation and re-regulation in the infrastructure sector is aimed at attracting private investment, expanding production capacity, improving efficiency and reducing public debt. However, the country's experience illustrates that while there has been improvements in productivity and a contribution to the fiscal balance, the additional expected investment – not including telecommunications – has not been significant.

The process of building institutions is expensive, requires a high degree of technical capacity, and should be implemented gradually. The Brazilian experience has been a mix of regulatory agencies quickly created after privatisation, federal regulatory frameworks that conflict with local level structures, and inter-bureaucratic disputes.

As a result, the ability of these regulatory agencies to ensure the delivery of effective private services has proved contentious. For example, in Brazil, the privatisation of public utilities has detrimentally affected the real incomes of the poorest. Regulators felt it necessary to provide incentives to the new private owners of public utilities: this contributed to price increases rather than expected decreases. In Rio de Janeiro, for example, the prices of public services rose by 169 per cent while the general consumer price index rose by 90 per cent between August 1994 and November 2000 (Amann 2000). Thus, measures must be taken to ensure that liberalisation is pro-poor and sees the expansion of access rather than its constraint.

[48] There are regulatory agencies for telecommunications, electric energy, oil and natural gas, sanitary surveillance, supplementary health and water, among others. Proposals for the creation of regulatory agencies for transportation and anti-trust are currently under analysis.

Brazil demonstrates the risks of rapid service liberalisation of activities involving services that have traditionally been provided by the public sector and the inability to define negotiating goals due to inadequate institutional capacity. These limitations hinder the potential benefits of services liberalisation as they restrict the country's negotiating position.

The impact of the liberalisation of services on the poor

To summarise, liberalisation of Brazilian services will expand employment opportunities in highly skilled labour activities, such as banking, audiovisual and engineering services; thus, it appears that the direct impact on the poor from service liberalisation will be minimal. To increase the ability of the poor to participate and directly benefit in new employment opportunities, measures must be taken to increase their access to education.

However, the poor will benefit from the liberalisation of services as it will improve their access to various goods. By implementing effective regulation, services liberalisation can dramatically improve the ability of the poor to access essential services, such as health, telecommunications, and education. Effective regulations can encourage competition; thereby, decreasing prices and ensuring that services are extended to historically neglected regions. However, as mentioned above, this is contingent on the ability of the government to implement effective regulatory agencies.

Protection in services makes domestic prices uncompetitive in terms of world prices and skews the allocation of resources. Liberalisation will help align domestic prices with world prices; hence, allocating national resources more efficiently. Furthermore, liberalisation could offset decreasing trends of FDI by providing investors with greater opportunity; thereby, encouraging investment in infrastructure and supplementing domestic savings. Consequently, FDI in services could free scarce domestic resources and give policy makers more flexibility to implement pro-poor spending.

Service liberalisation will also increase employment opportunities in other economic sectors which have been stimulated through the expansion of efficient services. Services have economy-wide implications as they constitute critical elements of infrastructure and provide vital inputs. One potential area in which Brazil's poor could gain from service liberalisation is through the temporary movement across borders both for semi-skilled and unskilled workers. However, political-security concerns and lack of progress regarding the movement of workers dictate that liberalisation in this potentially beneficial sector is highly unlikely in the near future.

Despite the economic advantages associated with service liberalisation, it is important to note that employment generated from services liberalisation was insufficient to absorb the excess labour generated by industrial liberalisation. The service sector only absorbed labour at an average of 1.3 per cent between 1991 and 2001 (Amann 2002 see Annex 2 page 11). The inability of other economic sectors to absorb the surplus labour resulted in Brazil's aggregate unemployment figure to increase from 5.1 per cent in 1994 to 7.6 per cent in 1999.

Measures must be taken within the WTO to recognise the disadvantage of developing countries in regard to institutional analytical capacity. In the transition to the new system, the government's performance has depended on variables such as technical capacity, financial resources, and ability to negotiate power with stakeholders. Recent discussions, over increases in telephone fees, between the government and the private providers demonstrate that protecting contracts may involve some trade-offs in relation to public interests. As Michalopoulos (2003) asserts: 'countries facing fiscal constraints often have few resources to direct towards the areas of public administration responsible for overseeing and coordinating the implementation of WTO agreements, which are quite costly. These difficulties are supposed to be overcome through technical assistance and longer transition periods.'

However, the biggest challenge for Brazil will be to prepare its population for opportunities in the service sector. This sector will eventually occupy the largest proportion of the working population, and as Amann (2002) points out human capital in this sector is essential. Thus, significant improvements, as explored below, need to be made in Brazil's administration of education.

3.4 Brazil and the TRIPS negotiations

The economic argument for intellectual property as a tool to stimulate investment and innovation needs to be empirically assessed in relation to the needs of developing countries. The case of vaccines classically exposes how private sector allocation alone cannot satisfy all relevant public needs. It is estimated that pharmaceutical and biotechnology industries spend almost US$ 300 billion a year in new health technologies, but less than US$ 1 billion in the development of vaccines for tropical diseases that continue to affect masses of people in the developing world (German Marshall Fund of the United States 2003).

Brazil was one of the first countries to adjust its national legislation to the TRIPs Agreement. In 1996, Brazil passed the Law of Industrial Property (Law N. 9,279/96), which came into force early in 1997: this law extends patent protection to sectors formerly excluded, such as chemical, pharmaceutical products, and transgenic microorganisms.

The definition of international minimum standards for intellectual property was seen as an important tool to foster investment in innovation through a stable system of protection. Moreover, the adoption of multilateral mechanisms for dispute resolution was considered to be more equitable for developing countries in comparison to bilateral dispute mechanisms.

The attempt by the United States to install a WTO panel to investigate the Brazilian production of generic antiretroviral drugs, combined with legal dispute initiated by pharmaceutical companies against parallel importing in South Africa, inaugurated important precedents for what later became the Doha Declaration on the TRIPs Agreement and Public Health.

In documents submitted to the TRIPs Council together with other countries,[49] Brazil has sustained that each Member should have its right to determine whether it lacks or it has insufficient pharmaceutical manufacturing capacity preserved, due to great variations among countries and domestic circumstances. Also, it has defended an authoritative interpretation of Article 30, so that Members are allowed to manufacture, sell, and export patented public health-related products without prior consent of the patent holder, to a country in need. Based on Article 31(f) of the TRIPs Agreement, compulsory licensing could be allowed, predominantly for the supply of the domestic market. Brazil interpreted the word 'predominantly' as an indication that under special circumstances, the export of drugs produced under compulsory licensing could also be permitted

In addition to health, the development agenda enhanced discussions on the compatibility of the TRIPs Agreement, with the Convention of Biological Diversity and the protection of traditional knowledge.

This chapter briefly illustrates how these issues have been addressed in Brazil: it then offers a summary of the Brazilian negotiating positions, and some expectations for Doha. The last section draws on Brazilian data to point out the need for more disaggregated analyses to assess the actual benefits of intellectual property protection.

TRIPS and public health

Marques (2000) notes that until the 1990s the discussion on intellectual property rights over pharmaceutical products in Brazil had been conducted separately from the debate on the right to access medicines. However, since 2001, Brazil has been an important actor in raising awareness of the limitations of intellectual property rights in dealing with health concerns.

In 2001, the United States requested the establishment of a WTO dispute panel as it asserted that Brazilian Industrial Law (Law N. 9,279/96) violated the TRIPs Agreement. The accusation was based upon Brazilian legislation (Article 68) which permits licensing for the production of generic drugs. This article permits, under specific circumstances, such as abuse of economic power or failure to produce the patented drug locally, for compulsory licensing to be granted after a patent has been registered for three years (Ministry of Health 2001).

The US attempt to block the use of compulsory licensing in Brazil, combined with the previous attempt, by pharmaceutical companies to block parallel importing in South Africa, helped mobilise the international community around the potential conflicts that emerged between the TRIPs Agreement and public health.[50]

In 1996 Brazil launched the 'Free Distribution of AIDS Drugs for All' Program. This program provides HIV/AIDS patients with free and universal access to treatment in the public health system. The long-run sustainability of the program is contingent on access of antiretroviral drugs at a lower price and domestic production of generic drugs.

[49] WTO IPC/C/W/355, submitted by Bolivia, Brazil, China, Cuba, Dominican Republic, Ecuador, India, Indonesia, Pakistan, Peru, Sri Lanka, Thailand and Venezuela (26/04/2002).

[50] The action by pharmaceutical companies and the US request were withdrawn after intense opposition by international advocates.

An evaluation of the program offers positive indications of what can be achieved if access to medicines in developing countries is expanded.

In 1992, the World Bank projected that by 2000 1.2 million people would be infected by HIV in Brazil: however, actual contraction figures were about 536,000. Distribution of AIDS drugs dramatically reduced mortality, morbidity, and hospitalisation rates. Between 1995 and 1999, the mortality rate in São Paulo and Rio de Janeiro, which together make up 32% of all AIDS cases in the country, fell by 54% and 48% respectively. HIV-related opportunistic infections had a decline of about 60%-80% and there was a four fold reduction in hospitalisation rates: from 1997-2000 this resulted in an estimated US$ 472 million in governmental savings (DST/AIDS Program, Teixeira 2001).

Since drugs used for the treatment usually represent a large portion of the total budget, the government has pursued various strategies to acquire drugs at a more accessible price while not compromising the sustainability of the program. One strategy includes investment in public national laboratories and price negotiations with exclusive manufacturers. Currently, Brazilian manufacturers produce 7 of the 12 antiretroviral drugs that comprise the 'anti-HIV cocktail' and 40% of all production comes from the public-owned Farmanguinhos-Fiocruz Pharmaceuticals (Teixeira 2001).

Domestic production coupled with intense bargaining with pharmaceutical companies has reduced the annual costs of treatment from US$ 7,341 in 1997 to US$ 4,716 in 2000 to US$1,200 in 2004. Between 1996 and 2000, domestically produced antiretroviral drugs had an average price reduction of 72.5%; whereas, the average decline for imported drugs was only 9.6%. The imbalance between the costs of domestic and imported drugs is further revealed by the fact that in 2000 about 56% of the US$ 319 million spent on the acquisition of antiretroviral drugs was on imported drugs. Two imported drugs, Efavirenz and Nelfinavir, represented 36% of total expenditures (Ministry of Health 2000).

The Brazilian experience also indicates the possibility of price differentiation according to a country's socio-economic conditions. In 2001, Brazil negotiated an agreement with Merck-Sharp & Dohme Laboratories in which the company agreed to reduce the price of Efavirenz and Indinavir by 59% and 64.8% respectively. The government has recently concluded negotiations with Roche Holding AG, Gilead Sciences Inc and Abbott Laboratories to reduce the price of HIV/Aids anti-retroviral drugs by around a third.

In attempt to improve levels of health, in 1998 the government created the National Agency for Sanitary Surveillance (ANVISA) and enacted Law 9,787/99 to establish generic drugs,[51] as part of a national policy designed to increase safe and universal access to medicines. The incentive to expand the generic drug market has mainly

[51] A generic drug is defined as 'drug product similar to a reference or innovative product, expected to be interchangeable with the latter, usually produced after the expiration or waiver of patent protection or of other exclusiveness rights, its effectiveness, safety and quality being proven, and designated by DCB [Brazilian common denomination] or, in its absence, by INN.' The full text of Law 9,787/99 is available in English at:
http://www.anvisa.gov.br/hotsite/generics/legis/leis/9787_e.htm

resulted from steep increases in health care costs (private and public) due to higher life expectancy, an aging population, and the adoption of new therapeutic procedures and technologies that depend on high levels of investment.

A recent study from ANVISA (2003) reveals that prices of generic drugs are on average 40%[52] lower than the prices of reference drugs. The table below illustrates the evolution of the generics drugs market:

Table 10 Evolution of the generic drugs market in Brazil

	June 2000	**April 2003**
Monthly production (million units)	2.7	11
Monthly sales (million units)	2.0	9.4
Monthly sales (million Reais)	7.7	59
Market Share (%)*	1.5	7.6

Note: (*) Based on unit sales.
Source: ANVISA

From the total of 1,033 registered generics by January 2004, 67.54% were from national manufacturers. Of 32.46% imported registered generic drugs, the main suppliers are India (14.34%), Canada (7.46%) and Germany (3.49%).

Brazil has been criticised by some developed countries on the grounds that its negotiating position derives from its interest in exporting generic drugs. In the case of the HIV/AIDS drug debate, the official position of the Brazilian government has been to emphasise the production for domestic supply only;[53] however, the government has asserted that it will share technology and export small quantities of drugs.

Biodiversity and traditional knowledge

Brazil hosts the largest biodiversity in the world. It is estimated that between 10% to 20% of the total of species in the world, and 22% of the plant species, are located in Brazil (Santos and Sampaio 1998). Due to the high economic value of these resources, the design of a proper legal framework has faced the challenge of overcoming disputes among different groups within the country.

The negative consequences of inadequate regulation was illustrated in 2000, when Provisional Measure N. 2,052/2000 sought to legitimise the economic exploitation of traditional knowledge without making any compensation to those who had already developed specialised knowledge in these goods prior to June 2000. The measure was highly criticised as unconstitutional and it was eventually revoked. As Santilli (2002) recalls, the provisional measure, enacted on June 30, 2000, ultimately sought to legitimise an agreement signed on May 29, 2000, by Bioamazônica and the multinational Novartis Pharma. Under the terms of the agreement, ten thousand

[52] A full comparative list can be downloaded from ANVISA's web page: http://www.anvisa.gov.br/hotsite/genericos/cidadao/redu%E7aodecusto.pdf

[53] According to the Brazilian delegate for the TRIPs Council and WIPO, Francisco Cannabrava, unlike India, 'the actual situation is that we only manage to meet the needs of our population. Occasionally, we do provide drugs on a non-commercial basis and in limited amounts to a number of African countries.' (Cannabrava 2002).

bacteria and fungi would be shipped from the Amazon region to Novartis laboratories in Switzerland.

The protection of biodiversity and traditional knowledge is currently regulated by Provisional Measure N. 2,186/2001. However, provisional measures are temporary; thus, this does not constitute an adequate legal instrument to provide a stable environment for these issues. In addition, the text of the Provisional Measure has been highly criticised by both researchers and environmentalists. To make the legislation more effective these groups demand that laws are implemented to prevent biopiracy and that regulations are established to govern economic exploration of biodiversity and bioprospection; they also assert that a mechanism is needed which ensures that communities, who have developed this traditional knowledge, are consulted and that their territorial rights are not infringed. The goal of this policy is to ensure equitable treatment of traditional knowledge relative to non-traditional knowledge.[54]

With regard to the patent of life-forms, the Brazilian Industrial Property Law (Law 9,279/96) excludes plants and animals from patent; however, transgenic microorganisms are covered if they satisfy the criteria of novelty, inventive step, and industrial application.[55]

The protection of plant varieties and plant-breeders rights is regulated by the Cultivar Protection Law of 1997 (Law n. 9,456/97). The law was inspired by the 1978 version of the Convention of the International Union for the Protection of Plant Products (UPOV), but it added the protection of essentially derived varieties, a concept adopted in the 1991 version of the UPOV. The Brazilian law guarantees intellectual property rights for the individuals or entities responsible for developing new genetic plant materials.

However, in order to protect small farm holders, the Cultivar Protection Law establishes some conditions under which the property rights of the cultivar is not applicable, such as the reservation and planting of seeds by the farmers for their own use, utilisation for scientific research, and reproduction of the cultivars by small landowners for donation, exchange, or subsistence farming.[56]

In order to assure the protection of biodiversity and traditional knowledge, Brazil has submitted various documents to the WTO proposing amendment to the TRIPs Agreement. In the most recent document,[57] Brazil, together with Bolivia, Cuba, Dominican Republic, Ecuador, India, Thailand, Peru and Venezuela, proposed that applicants for patents relating to biological materials or traditional knowledge shall provide:

[54] Comciencia, from 18/07/2003:http://www.comciencia.br/noticias/2003/18jul03/biodiversidade.htm
[55] Article 18, II, of Law 9.279/96: 'for the purposes of this Law, transgenic microorganisms are organisms, except for all or part of plants or animals, that express, by means of direct human intervention in their genetic composition, a characteristic normally not attainable by the species under natural conditions.'
[56] Brazilian Embassy in London: www.brazil.org.uk
[57] WTO IP/C/W/403, 23/05/2003.

- (i) disclosure of the source and country of origin of the biological resource and of the traditional knowledge used in the invention;
- (ii) evidence of prior informed consent through approval of authorities under the relevant national regime; and
- (iii) evidence of fair and equitable benefit sharing under the relevant national regime.

Disclosure is considered a fundamental step for the protection against biopiracy and misappropriation. Also, the disclosure procedure would allow a more realistic assessment of the 'inventorship' of the material subject to the patent request.

With regard to the harmonisation of the TRIPs Agreement with other international agreements, and in particular, with the Convention on Biological Diversity, the signatory countries noted that little progress has been achieved at the World Intellectual Property Organisation in this matter and that domestic regulations could be insufficient in preventing international biopiracy, due to the difficulties in monitoring mechanisms. In relation to the patentability of plants and animals, the signatory countries defend flexibility to exclude plants and animals from patentability and to define the most suitable *sui generis* system for the protection of plant varieties.

Geographical indications (GIs)

At Cancún, there was no advance on geographical indications. However, negotiations in this sector may improve as the EC has adopted a more flexible approach

Lack of precise information on GIs in Brazil makes it difficult to assess how such legislation could benefit poor people. Products such as coffee and cachaca could benefit from registration; however, it is unclear whether the potential beneficiaries in the private sector will be able or willing to contribute to the high costs involved in the implementation of the GI system. In addition, scarcity of resources makes it unlikely and perhaps inefficient for the government to fund such an expensive programme.

To date, Brazil has not submitted an official document to the TRIPs council specifically referring to GIs, either individually or as part of a group.

Final comments

A challenge that will be faced by developing and LDCs, regardless of possible amendments to the TRIPs Agreement, is their capacity to guarantee future registered patents. The costs of protecting a patent are high: to ensure proper registration and legal protection – on an international scale – countries need developed technical and institutional capacity and economic resources to afford expensive legal cost. Developed countries are better equipped to meet these challenges; thus, a major challenge is to make the benefits of the TRIPs Agreement accessible to the developing world.

Developing countries could gain from adapting domestic legislation to meet the requirements of the TRIPs agreement; for instance, it will improve the ability of developing countries to retain skilled researchers (Morris 2002). However, the problem of 'brain drain' in developing countries cannot be so simply addressed.

Minimal advances in domestic innovation may result from a combination of institutional inadequacy and low investment in R&D activities, rather than from a lack of intellectual property protection.

Brazil could also gain from exports of generic drugs. Increased exports will increase national income and expand opportunities for employment in industries associated with the distribution of generics. However, in lieu of stagnant levels of inequality it is important that the government takes steps to ensure that increased national income translates into poverty reduction.

Lack of resources has hindered Brazil's ability to take advantage of the TRIPs agreement. Insufficient staffing in the Brazilian National Institute for Intellectual Property (INPI) has hindered this institution's ability to adjust to an increased workload. Improvements require a budget increase, but this is difficult due to the necessity of fiscal constraint.

According to the National Association of Research, and Development and Engineering of Innovative Companies (ANPEI), between 1994 and 1999, private investment on R&D was around 1% of the total revenue of a company. Unlike the developed world, in Brazil R&D tends to be seen more as a cost than an investment: historically the public sector is forced to bear such 'costs.' About 80% of the Brazilian researchers work for universities and research institutes: there is a very low flow of researchers to the private sector.[58]

Recently, the public sector has reduced total investment in R&D. Data from the Ministry of Science and Technology reveal that while in 1994, the federal government invested R$ 2 billion (Reais) in R&D, the amount has decreased over the years and by 1999, it was less than R$ 1.5 billion. The main exception to this rule was investment in pharmacological research, which had been given priority by the federal government, as it is part of the government's policy to ensure universal access to medicine by producing generic drugs and HIV/AIDS treatment drugs. [59]

More refined research is required to assess the variables affecting investment, technological innovation and the importance of intellectual property protection in developing countries; however, available data indicates that the positive correlation between IP protection and innovation is not as explicit as one might think. The Doha Declaration on the TRIPs Agreement and Public Health was an important advance towards a more disaggregated review of which areas can and should be efficiently protected through the current terms of the Agreement. It also highlights which areas of intellectual property require a more flexible system if development concerns are to be set as priority.

[58] O Estado de São Paulo, A-14, July 13, 2003.
[59] Comciencia, 'A quebra de patente de medicamento anti-Aids: benefícios sociais e econômicos para países periféricos.' By Rodrigo Cunha, updated on June 25, 2001.

3.5 Regional and multilateral strategies

The aftermath of the Cancún Ministerial has given new impetus to regional trade agreements.[60] To maximise benefits, Brazil is pursuing trade agreements via regional and multilateral channels. In terms of economic growth, multilateral agreements are more advantageous as it is unlikely that any important reductions in agricultural barriers will occur from regional ones. Nevertheless, regional agreements could result in significant gains for Brazil; accordingly, Brazil is simultaneously pursuing multilateral liberalisation at Doha and free trade agreements (FTA) via MERCOSUR with the EU and the countries of the Free Trade Agreement of the Americas (FTAA). However, inability to agree upon a deep liberalisation programme at the Miami Ministerial indicates that even regional strategies may not bear fruit. This section briefly examines how regional trade agreements could encourage economic growth and what the prospects for a regional agreement are; the next section explores some of the implications of the North American Free Trade Agreement (NAFTA) on Mexican poverty and growth.

3.6 Regional trade agreements and economic growth

In terms of regional trade agreements, the potentially most economically rewarding agreement for Brazil and the countries of MERCOSUR would be one with the EU that liberalises agriculture. The major drawback of the FTAA and EU trade agreement is that they will probably exclude this sector; thus, denying Brazil the ability to exploit its comparative advantage and stripping the agreements of value. If agriculture is excluded, the FTAA is more beneficial to Brazil than the MERCOSUR-EU agreement (Harrison 2003).

Liberalisation of agriculture between the EU and MERCOSUR would greatly benefit Brazil: Harrison (2003), following Pereira (1997) asserts that an agreement with the EU is almost twice as valuable as the FTAA due to preferential access to highly protected agriculture markets in the EU.[61] The EU has several food products with very

[60] The difficulty in negotiating the Uruguay Round (UR) also encouraged the proliferation of regional trade agreements: the slow going of the UR marked an active policy shift in the US which culminated in the proliferation of regional trade agreements.

[61] Harrison employs a 16 region global computable general equilibrium model (CGE) to quantitatively examine how regional, unilateral and multilateral trade agreements could affect Brazil. The model includes the economies of Brazil, Argentina, Uruguay, Chile, Mexico, the United States, Canada, Central America, Venezuela, Columbia, Peru, Rest of the Andean Pact, Rest of South America, the EU, Japan and an aggregate Rest of the World. The 'GTAP5 dataset' from November 2001 is employed in the study. The study assumes that the countries of MERCOSUR apply a common external tariff and that there are no tariffs on imports between Argentina, Brazil and Uruguay (Paraguay is considered as part of South America). The study assumes that NAFTA operates as an effective free trade area with zero tariffs among the US, Canada, and Mexico. To measure the affects on the poor, the study incorporates 20 different types of Brazilian households: ten rural and ten urban, each household is classified according to income level. Measurement of household expenditure and income patterns were extracted from the Living Standards Measurement Survey (LSMS) for Brazil: the survey was designed by the Instituto Brasileiro de Geografia e Estatistica (IBGE). Harrison estimates that 13% of individuals in Brazil are below the poverty line and that 82% of the households in the poorest echelons of his study fall below the poverty line.

high tariffs: if Brazil gained preferential access to the EU, whist other countries still encountered high obstacles, the gains to Brazil's agricultural sector would be immense.

The reluctance of the European Union to negotiate tariff free access to its agricultural markets in its current free trade agreements suggests that it is highly unlikely that the MERCOSUR will be successful in gaining preferential treatment in agriculture.[62] The prospect of MERCOSUR obtaining preferential access is slim: accordingly, without the liberalisation of agriculture, the benefits accrued to Brazil are minimal.[63]

If the EU fails to improve access to its agricultural market then the FTAA becomes a more important agreement for Brazil. A FTAA in which all countries agree to offer tariff free access on all products reciprocally while their external tariffs remain unaffected by the FTAA would result in gains of about six-tenths of a percent of Brazilian personal income or around US $3 billion (Harrison 2003). In terms of poverty reduction, these gains would be progressive: in a sample survey of households by economic strata, Harrison (2003) calculates that the poorest urban and rural households would increase their welfare by about 2.5 percent of the value of household consumption.

Nevertheless, as explored below, the FTAA will involve several trade-offs: trade liberalisation would incur some serious costs in terms of domestic policy as the removal of tariff barriers entails a loss of tariff revenue of about six-tenths of one percent of GDP. This decrease in government revenues must be offset by measures to increase tax revenues to avoid exacerbating the fiscal deficit.[64]

However, it is highly unlikely that the FTAA will result in tariff free access for all products: the inability to forge an agreement on agriculture at the Cancún Ministerial has resulted in a fracticious and tense relationship between the two largest players of the FTAA: the US and Brazil.[65] A growing gulf between the Brazilian trade position and the American one may result in a very limited FTAA.

Traditionally America has argued for a comprehensive agreement that includes commitments on investment, competition, services, and intellectual property rights. Most importantly for Brazil – the US insists that the issue of farm subsidies is dealt with at the WTO: Brazil wants an FTAA that reduces farm subsidies.

Despite the differences in negotiating positions, between Brazil and the US, the FTAA negotiations are unlikely to collapse; instead agreements are likely to be of the

[62] The EU currently has several trade agreements with countries of strategic geopolitical interest, but has not liberalized trade in these agreements: agriculture is excluded from the Association Agreements with Central and Eastern European Countries, in its customs union agreement with Turkey and in its free trade agreements with various Mediterranean countries.

[63] According to Harrison (2003) the gains are reduced to only one-ninth of the value of full liberalization.

[64] Although improvements have been made to tax collection in Brazil, it is not a given that the Brazilian government will be able to raise taxes to cover tariff revenue losses. Rich Brazilians have historically been reluctant to pay taxes; this coupled with the expansion of the informal sector (and the state's inability to tax it) makes tax collection a complicated task.

[65] The Economist Nov 22, 2003. However, since Cancún's collapse a flurry of diplomatic exchanges have occurred between Brazil and the US in the hope of forging an agreement.

lowest common denominator. This was manifest at the Ministerial Meeting in Miami in November 2003 which was referred to as 'FTAA-lite' as a provision was established that members did not have to sign up to an all encompassing agreement, instead they can pick and choose which agreements they will implement. In addition, to avoid collapse, the Ministerial avoided serious discussion of contentious issues, such as intellectual property, rules protecting foreign investment and government procurement. Although the agreement reached at Miami is very broad based, it will result in only very modest liberalisation in each sector. The ability of the countries of the FTAA to negotiate a deal indicates a willingness to avoid the collapse of the FTAA and shows that there is motivation to meet the January 2005 deadline.

US dissatisfaction with such an impotent agreement is encouraging a policy shift from multilateral and regional talks toward bilateral trade agreements.[66] At Miami U.S. officials unveiled plans to hold talks with four Andean countries – Colombia, Peru, Ecuador and Bolivia – and with Panama and the Dominican Republic. Washington also said it would start talks with Uruguay over a bilateral investment treaty early next year.

Imminent US elections could also be a major factor in stalling regional talks: elections translate into protectionist impulses in Congress and could damage President Bush's chances for re-election. It would be highly convenient for the current administration to avoid any substantial agreements until 2005.

The US move toward bilateral agreements threatens Brazil's strategy of increasing its clout via the US by integrating the economies of South America so it can be the leader of this group in trade negotiations. Despite Peru and Bolivia's status as associate members to MERCOSUR and commitments by the remaining three Andean countries to sign agreements with MERCOSUR, Andean countries, except Venezuela, have leapt at the chance of signing bilateral deals with the US. The Monterrey Summit of the Americas indicated that many South American countries reject the notion of Brazil leading them in regional discussions. Even MERCOSUR is not monolithically behind Brazil: Uruguay has publicly, and Argentina privately, defended a broad FTAA.[67]

The prospects for an FTAA that engenders deep liberalisation is slim as political realities at an international and regional level dictate that an agreement on the US's most sensitive products, such as agricultural liberalisation is unlikely to occur on a regional level.[68] The FTAA will likely exclude several potentially important products for Brazil, such as oil seeds, sugar, crops and dairy products.

Brazilian rural poverty could be adversely affected if the FTAA does not result in US commitments to abandon domestic subsidies. Without an agreement to remove US subsidies Brazil may be flooded with very cheap US agricultural imports. In addition,

[66] US moves toward bilateral agreements can be seen as negative in terms of development as it increases the US position vis-à-vis its trading partners and restricts the ability of the latter to work together to obtain a more favourable agreement.
[67] The Economist 'Much Wind and Little Light' October 16, 2003
[68] Due to EU agricultural support and US fear of losing market share vis-à-vis a heavy agricultural subsidiser – the EU – it is questionable whether the US would ever agree to liberalise agriculture at a regional level.

if the US employs antidumping measures to restrict Brazil's access to its market then Brazil's gains are reduced to two-thirds of what it would have gained from full market access in the FTAA (Harrison, 2003, 18).

In view of the EU's and US's reluctance to liberalise agriculture and decrease domestic subsidies in a regional agreement, multilateral liberalisation remains the most enticing and relevant option for Brazil. A broad based multilateral agreement, one that reduced tariffs, export subsidies, and taxes by 50% (by all WTO members) would yield impressive gains of around eight-tenths of a percent of personal consumption or around 4.5 billion for Brazil (Harrison 2003, 19). These gains exceed those of the FTAA and are larger than a restricted EU-MERCOSUR agreement.

As a result, Brazil will most likely continue to follow its current policy stance which is to push for a multilateral agreement that liberalises agriculture and to increase integration within MERCOSUR in order to obtain a better bargaining position in regional talks. Despite the difficulties, MERCOSUR provides a viable tool for Brazil to increase its clout with more economically advanced trading partners, such as the US and the EU. However, the feasibility of further MERCOSUR integration and expansion is contingent on economic security and the inability of the US to forge bilateral deals: Argentina's default in 2001 illustrates some of the limitations of MERCOSUR.

Lessons Learned From NAFTA

In terms of poverty alleviation, it is important to assess how a FTAA could affect Brazil's poor. Although it is beyond the scope of this paper to analyze the repercussions of NAFTA on Mexico's poor, it is important to highlight some significant implications of the agreement as NAFTA is the model for the FTAA.

NAFTA has not been able to meet the demand for jobs in Mexico; despite a large growth in trade and a surge in portfolio investment and FDI there has only been the creation of 500,000 jobs in manufacturing from 1994-2002. Since the inception of the NAFTA more jobs have been lost than created: the agricultural sector – which employees a fifth of Mexico's labour force – lost 1.3 million jobs since 1994 (Audley 2003).[1] US agricultural subsidies coupled with Mexican agricultural inefficiency have been responsible for the loss of Mexican agricultural jobs; US subsidies to farmers and their access to cheap energy sources, services, and infrastructure makes them highly productive in relation to their Mexican counterparts. Despite vast increases in productivity, Mexican farmers cannot compete with cheaper US products.

Another factor restricting the benefits accrued to Mexico is a result of multilateral liberalisation and US trade agreements with third countries. Investors are moving manufacturing to lower wage countries: Polaski (2003), for instance asserts that around 30% of jobs created in Mexican maquiladoras, since the inception of NAFTA, have moved to Asia, particularly China. In order to keep jobs, labour unions have been suppressed and wages paid to industrial workers have not correspondingly increased with increases in productivity: in fact, real wages are below their pre-NAFTA level.[1] Although, NAFTA has dramatically increased Mexico's exports, these have a high percentage of foreign input.

As discussed, inequality is a major problem in Brazil: thus, it is important to note that inequality has increased in Mexico since the inception of NAFTA: the top 10 percent of households have increased their share of national income, while the other 90 percent have lost income share or seen no change. Regional inequality within Mexico has also increased, reversing a long-term trend toward convergence in regional incomes.

Chapter 11 of NAFTA is also a serious concern for members of the FTAA as this provision enables investor to state challenges. NAFTA is the first trade agreement that allows private interests to directly challenge laws and practices of national governments. It enables corporations to sue for actions 'tantamount to expropriation;' in other words corporations can seek compensation for lost current and future profits.

However, NAFTA has also had tremendous benefits for the Mexican economy: trade agreements with the US have 'locked in' unilateral economic reforms and thus given international investors sufficient confidence in the sustainability of Mexico's economic reforms. International investors regard NAFTA as more secure than WTO commitments, as NAFTA goes deeper and few doubt the ability of Washington's lawyers to ensure that the trade agreements are upheld. In addition, Mexico quickly recovered from the 1994-95 peso crisis due to US loans: a US $50 billion loan was granted to Mexico in order to ease the country's liquidity crisis. NAFTA also prevented Mexico and any of its partners from implementing protectionist policies after the crisis; thus, Mexico's exports benefited from the depreciation of its currency.

However, Polaski (2003) asserts that an important contributory factor to the Peso crisis was Mexico's lack of capital controls: thus, the US's current stance that members of the FTAA remove all restrictions on capital flows deserves careful scrutiny. In addition, studies of NAFTA indicate that Mexico could have benefited from trade assistance and longer implementation periods for trade reforms. Decreasing agricultural tariffs more slowly would have enabled the government to cushion rural farmers' transition to a liberalised economy; consequently, any regional agreements should make an attempt to provide 'shock absorbers' to ease the dislocation effects (Polaski 2003). To avoid high foreign input content in exports, the FTAA should also allow members to encourage foreign and domestic investors to increase domestic content in order to encourage the development of a domestic industrial base.

Final comments

Although economic growth is an important tool in poverty alleviation, many studies have emphasised the importance of national and local level government in developing effective social policies to reduce poverty (Tendler 2002, McGuire 2001, LASA). The shift toward pro-poor policy planning is important as it means that development can be pursued in conjunction with policies designed to increase economic growth. Poverty alleviation is thus a result of economic growth and domestic policies designed to ameliorate the condition of the poor (Barros, Henriques and Mendonça 2001, Rocha 2000, O´Donnell 1998, McGuire 2001, World Development). Consequently, poverty reduction can occur despite poor economic growth.

Thus far the effects of economic reform and trade liberalisation have had a mixed impact on Brazil's poor; Brazil's experience in the 1990s indicated that it cannot be assumed that the corollary of trade liberalisation is poverty alleviation. However, trade liberalisation has potential to reduce poverty by raising national income and liberalising labour intensive sectors. These measures would help Brazil achieve the MDG (see table 6 p 18) by expanding employment opportunities in agriculture, services, and in associated downstream activities.

The ability of trade to decrease poverty levels is also contingent on the development target pursued. The section on education and health, for instance, suggested that adequate social policies were the main determinants of poverty reduction: this positive outcome was the result of domestic policies – not trade liberalisation. However, trade can act as a stimulus to improve social indicators as a reciprocal relationship exists between trade liberalisation and domestic policies: policies designed to improve one's condition, such as effective health and education reforms enables a larger proportion of the workforce to participate in a liberalised economy.

Increasing the ability of the poor to participate is important as the labour market analyses indicated, in the productive factors reallocation resulting from trade liberalisation, that liberalisation has generated the most opportunity for workers with a high level of education. The importance of high level skills in a liberalised economy encourages the government to improve education levels. Accordingly, in order to ensure that many benefit from liberalisation, it is important to identify which groups are affected by liberalisation and what can be done to facilitate their transition to a liberalised economy. Moreover 'behind the border' issues, such as developing regulatory frameworks to facilitate service liberalisation can play an important role in modernising Brazil's institutions so that they become more efficient and transparent.

If trade liberalisation is to appropriate a developmental agenda, then multilateral measures must be taken to liberalise trade in sectors that Brazil is competitive. Liberalisation of agriculture could directly affect the poor by generating economic growth in labour intensive activities. To ensure that liberalisation is pro-poor, the government must reform land distribution and improve the access of the poor to marketing infrastructure and credit. However, the difficulties associated with agricultural liberalisation make it imperative that Brazil improve its capacity to assess how liberalisation in other sectors, such as services could benefit the poor.

The persistence of Brazilian poverty is not a product of lack of resources; rather it is correlated with unequal income distribution and inefficient allocation of resources. Measures must be taken to redress inequality due to its nefarious effects on economic growth and poverty alleviation. In addition, social expenditure needs to be reformed to target the poor better. If liberalisation does not occur in low skill labour intensive then the government must be prepared to make the necessary investments in human capital to ensure that the poor can participate in other sectors.

The rapid pace of economic transformation has resulted in a gap between the necessary adjustments and the state's capacity to identify and implement solutions. One clear sign of this deficiency is the scarcity of detailed evaluations on the potential social impacts of the various trade negotiations in which the country is involved.

In sum, liberalisation has not yet produced the expected benefits as growth with equity has proved elusive. The current situation has led to criticism of neo-liberal policies: Duncan Green (1995, 2003), for instance, pointed out that in Latin America inadequate regulation and rapid liberalisation have hindered economic growth and hurt the poor: he asserted that liberalisation occurred too quickly as it did not give competitive domestic industries sufficient time to adapt to the new economic environment. As a result, many potentially viable enterprises collapsed; jobs were lost and the ranks of the poor expanded. However, although the short term effects have been an escalation in unemployment, it is still too early to judge whether liberalisation has been a failure. Increasing competition can boost economic efficiency and growth by providing various economic sectors with better inputs. The Brazilian economy is currently posed for growth and 2002-03 witnessed a reduction in the gini coefficient. It is possible that liberalisation and current foreign direct investment in productive capacity will yield benefits in the 21st century.

Annex 1 Tables and figures

Figure A1: Poverty by Region in Brazil

Table A1 Average yearly growth rate of industrial output and employment 1990-98

Year	(% change in production)	(%change in employment)
1986	10.9	11.0
1987	0.9	1.2
1988	-3.2	-4.2
1989	2.9	2.1
1990	-8.9	-5.4
1991	-2.6	-10.1
1992	-3.7	-7.7
1993	7.5	-1.9
1994	7.6	-2.2
1995	1.8	-1.9
1996	1.7	-11.2
1997	3.9	-.58
1998	-2.0	-9.1
1999	-0.7	-7.8
2000	6.5	0.6

Source: IBGE.

Table A2 Agribusiness: trade flow/region

	Exports (% of total)		Imports (% of total)	
	2002	**2001**	**2002**	**2001**
Mercosur	2.7%	6.1%	50.0%	50.6%
Aladi (2)	4.4%	4.4%	5.1%	5.4%
US (inc. Puerto Rico)	17.1%	15.7%	10.4%	8.8%
Americas (others)	2.6%	2.1%	3.0%	4.3%
EU	36.7%	37.3%	16.7%	17.3%
Other Western Europe	1.6%	1.6%	2.7%	3.8%
Eastern Europe	6.1%	6.2%	1.1%	0.5%
Asia	16.7%	15.0%	8.4%	6.5%
Middle East	6.2%	6.3%	0.3%	0.2%
Africa	5.4%	4.7%	1.3%	1.7%
Oceania	0.4%	0.6%	0.8%	0.9%
Special operations			0.1%	0.0%

Note: (1) Data based on the Ministry of Agriculture classification, which includes more categories than the WTO classification.

(2) Excluding Mercosur.

Source: Brazilian Ministry of Agriculture (2002/2001)

Table A3 Statistics for individual products by the Brazilian Ministry of Agriculture

Soybean Complex

	1995	1996	1997	1998	1999	2000	2001
Production (1 000 t)	25,934	23,190	26,160	31,370	30,765	31,887	37,683
Harvested Area (1 000 ha)	11,679	10,663	11,381	13,155	12,995	13,327	13,931
Yield (kg/ha)	2,221	2,175	2,299	2,385	2,367	2,393	2,705
Import (1 000 t)	1,079	1,106	1,151	1,051	741	913	922
Soybean	876	937	1,024	828	582	807	849
Soybean Oil	203	169	127	223	159	105	73
Export (1 000 t)	16,819	16,240	19,479	21,102	20,899	21,966	28,598
Soybean Grain	3,493	3,646	8,340	9,288	8,917	11,517	15,676
% increase, year-on-year		104%	229%	111%	96%	129%	136%
As % of '95		104%	239%	266%	255%	330%	449%
As % increase on '95		4%	139%	166%	155%	230%	349%
Soybean Meal	11,563	11,262	10,013	10,447	10,430	9,375	11,271
% increase, year-on-year		97%	89%	104%	100%	90%	120%
As % of '95		97%	87%	90%	90%	81%	97%
As % increase on '95		-3%	-13%	-10%	-10%	-19%	-3%
Soybean Oil	1,764	1,332	1,126	1,367	1,552	1,073	1,652
% increase, year-on-year		76%	85%	121%	114%	69%	154%
As % of '95		76%	64%	77%	88%	61%	94%
As % increase on '95		-24%	-36%	-23%	-12%	-39%	-6%
Soybean							
Netherlands	1,739	2,076	4,321	2,972	3,022	3,449	3,319
Germany	203	200	440	1,094	857	1,053	1,574
Spain	504	309	808	956	1,416	1,182	1,368
Soybean Meal							
Netherlands	4,594	4,177	3,155	2,422	2,617	2,383	3,153
France	958	824	1,152	1,942	1,992	2,350	2,718
Germany	420	332	605	758	374	483	840
Spain	1,286	1,097	610	658	993	477	337
Soybean Oil							
Iran	199	177	168	637	772	322	405
China	939	780	501	183	121	63	17

Sources: SECEX/MDIC; CONAB/MA.

Coffee

	1995	1996	1997	1998	1999	2000	2001
Production (1 000 t)	1,860	2,738	2,457	3,379	3,264	3,807	1,918
Harvested Area (1 000 ha)	1,870	1,920	1,988	2,070	2,223	2,268	2,354
Yield (kg/ha)	994.8	1,426.1	1,235.8	1,631.9	1,468.2	1,678.6	814.9
Export (1 000 t)	722.2	778.7	869.4	996.4	1,272.4	968.0	1,256.0
Main export destinations							
Coffee not roasted (1000 t)							
Germany	48.1	97.6	126.3	156.9	240.2	161.63	242.65
United States	123.4	120.6	133.7	171.2	281.9	138.37	167.80
Italy	88.8	82.1	84.4	99.0	99.5	99.85	121.04
Japan	62.5	73.3	73.1	83.7	93.6	85.97	94.39

Source: IBGE, SECEX/MDIC

Orange Juice

	1995	1996	1997	1998	1999	2000	2001
Orange Production (1 000 t)	16,671.1	18,585.2	19,516.8	17,622.1	19.356,4	18.453,8	15,843.6
Harvested Area (1 000 ha)	856.4	964.4	985.5	1.018,6	1,027.1	856.4	821.2
Yield (kg/ha)	19,466	19,272	19,804	17,301	18,846	21,548	19,294
Juice Import (1 000 t)	1.0	1.0	1.2	2.7	0.2	0.3	0.1
Juice Export (1 000 t)	968.9	1,189.1	1,186.5	1,236.2	1,176.8	1,276.8	1,348.2
Orange Export (1 000 t)	114.1	99.2	91.7	65.6	103,1	75.3	139.6
Main export destinations							
Frozen Juice (1000 t)							
South Korea	43.2	32.9	38.5	19.8	17.0	28.2	20.4
Belgium-Luxembourg	284.9	302.8	345.0	525.6	401.3	402.0	503.8
Netherlands	402.9	472.9	440.6	349.4	369.4	442.5	426.9
United States	111.7	231.5	209.6	186.3	214.0	252.3	177.9
Japan	68.0	72.0	75.4	6.8	73.9	81.0	87.3

Sources: IBGE, SECEX/MDIC

Sugar

	1995	1996	1997	1998	1999	2000	2001
Sugar Cane Production (1 000 t)	303,557	317,106	331,613	345,255	333,848	326,121	345,942
Harvested Area (1 000 ha)	4,559	4,750	4,814	4,986	4,899	4,805	4,973
Yield (kg/ha)	66,584	66,759	68,885	69,245	68,146	67,871	69,561
Sugar Import (1 000 t)	27.90	0.09	0.05	0.05	0.03	0.03	0.01
Sugar Export (1 000 t)	4,800.0	4,090.3	3,844.2	4,792.2	7,826.9	4,344.08	7,089.87
Main export destinations (1 000 t)							
Sugar	1,716.6	948.5	2,183.8	2,892.8	5,645.0	3,408.7	5,608.1
Russia	1,043.2	473.1	1,071.0	1,644.3	4,262.3	1,859.71	3,679.38
Iran	247.3	42.9	213.6	172.0	490.5	357.73	442.50
Morocco	394.0	235.7	384.5	469.8	241.8	300.08	441.00
Saudi Arabia	28.0	17.0	16.00	177.5	211.5	314.19	269.49
U. Arab Emirates	4.1	179.8	498.8	429.3	438.9	577.02	775.70

Sources: IBGE; SECEX/MDIC

Tobacco

	1995	1996	1997	1998	1999	2000	2001
Production (1 000 t)	456	473	597	505	630	580	565
Harvested Area (1 000 ha)	294	317	338	358	342	311	301
Yield (kg/ha)	1,551.0	1,492.1	1,766.3	1,410.6	1,842.1	1,865.0	1,874.0
Import (1 000 t)	16	17	19	15	4	8	9
Export (1 000 t)	256	282	319	301	343	341	435
Main export destinations							
Tobbaco leaves (1000 t)							
United States	54.3	93.7	73.4	50.7	59.3	53.3	82.2
Germany	34.8	36.3	37.6	43.9	54.3	43.2	46.7
Belgium-Luxembourg	13.5	11.1	22.4	9.2	17.3	17.9	33.4
Japan	15.5	17.6	20.6	19.4	18.5	17.4	17.8

Sources: IBGE, SECEX/MDIC

Cocoa

	1995	1996	1997	1998	1999	2000	2001
Production (1 000 t)	296	257	285	280	205	191	184
Harvested area (1 000 ha)	738	684	728	710	681	728	665
Yield (kg/ha)	402	376	391	395	301	262	277
Import (1 000 t)	5.3	6.3	14.8	11.9	75.3	70.7	33.9
Export (1 000 t)	19.1	33.3	4.9	5.6	3.9	1.9	3.3
Main export destinations (1000 t)							
Beans							
Japan	2.5	5.1	2.0	2.2	3.1	1.6	2.9
Argentina	2.4	1.0	0.3	0.2	0.1	0.2	0.2
Netherlands	3.8	10.0	0.0	0.7	0.3	0.2	0.0
United States	4.8	13.7	2.1	1.5	0.0	0.0	0.0
Paste							
Argentina	8.3	8.3	9.0	10.8	9.4	9.2	9.6
United States	8.3	9.0	3.6	7.5	1.6	3.7	4.2
Chile	1.6	1.6	1.4	1.3	1.2	1.1	1.2
Uruguay	0.8	0.5	0.5	0.2	0.2	0.2	0.5
Butter							
United States	5.4	10.0	5.0	5.7	5.1	14.3	9.8
Argentina	5.3	7.0	8.0	8.7	7.3	7.1	6.5
Canada	1.3	2.8	1.2	0.5	1.0	4.5	2.3
Netherlands	2.3	1.8	3.2	7.4	6.8	3.2	3.5
Chile	1.7	1.9	1.2	1.5	1.3	1.3	1.9

Sources: IBGE, SECEX/MDIC

Corn

	1995	1996	1997	1998	1999	2000	2001
Production (1 000 t)	37,442	32,405	35,716	30,188	32,417	31,641	41,439
Harvested Area (1000 ha)	14,283	13,757	13,799	11,391	12,513	12,679	12,355
Yield (kg/ha)	2,621.5	2,355.6	2,588.3	2,650.1	2,590.7	2,495.5	3,354.1
Import (1 000 t)	1,263.6	288.0	604.4	1,765.1	796.9	1,759.2	548.1
Export (1 000 t)	8.6	521.1	188.0	7.3	7.7	62.1	5 ,917.8
Import/Main Countries (1 000 t)							
Argentina	841	188	383	1.549	531	1.517	323
Paraguay	225	125	116	112	196	222	285
United States	222	9	4	24	95	16	16

Sources: SECEX/MDIC; CONAB/MA

Beef

	1995	1996	1997	1998	1999	2000	2001
Total Cattle Herd (1 000 head)	157,000	153,000	155,000	157,000	160,700	163,200	165,700
Total Slaughter (1 000 head)	27,000	31,000	29,100	30,200	31,300	32,500	33,500
Beef Production (1 000 t c.w.e)(1)	5,400	6,045	5,820	6,040	6,268	6,270	6,900
Beef Import (1 000 t)	262	196	177	135	83	100	49
Total Beef Export (1 000 t)	269	261	274	343	462	455	632
% increase, year-on-year		97%	105%	125%	135%	98%	139%
as % of '95		97%	102%	128%	172%	169%	235%
as % increase on '95		-3%	2%	28%	72%	69%	135%
Main export destinations							
(1000 t)							
United Kingdom	46	36	41	44	63	67	75
Chile	0	0	1	2	19	32	57
United States	15	19	22	31	47	37	38
Netherlands	14	16	16	22	33	30	32

Note (1): carcass weight equivalent.
Sources: IBGE; SECEX/MDIC; ABIEC.

Poultry

	1995	1996	1997	1998	1999	2000	2001
Poultry Herd (1 000 heads)	729,531	728,087	760,622	765,222	809,413	848,515	777,963
Total Poultry Meat Production (1 000 t)	4,051	4,052	4,461	4,498	5,526	5,977	6,736
Total Poultry Export (1000 t)	434	569	649	612	771	907	1,249
Main export destinations							
(1 000 t)							
Saudi Arabia	141.9	160.3	185.2	168.0	217.2	207.6	256.0
China,Hong Kong	46.0	55.1	72.4	72.4	101.5	112.6	131.7
Japan	97.3	120.3	93.7	73.4	100.5	109.3	100.6
Netherlands	1.4	2.4	12.6	10.9	20.0	40.8	70.4

Sources: IBGE; SECEX; CONAB; ABEF; UBA

Pork

	1995	1996	1997	1998	1999	2000	2001
Pork Herd (1 000 heads)	36,062	35,600	35,800	36,500	37,000	37,300	37,300
Total Slaughter (1 000 heads)	19.2	20.7	20	22.4	23.5	24.9	26.5
Pork Meat Total Production (1 000 t)	1,470	1,560	1,540	1,699	1,834	1,967	2,216
Pork Meat Total Export (1 000 t)	37.5	64.4	63.8	81.6	87.0	127.0	265.0
Pork Meat Total Import (1 000 t)	8.58	5.00	5.00	11.00	0.70	1.00	1.00

Source: IBGE; ABCS; ABIPECS

Table A4 Summary of protection to the main products exported by Brazil, post-Harbinson´s minimum tariff cuts.

GROUP	DESCRIPTION	Market Access									Domestic Support			Exp. Subs.
		EU			USA			JAPAN			EU	USA	JAPAN	EU
		Tariff	TRQ	Escal.	Tariff	TRQ	Escal.	Tariff	TRQ	Escal.				
Soybean	Grain										X	X	X	
	Oil-cake													
	Oil			X			X			X				
Sugar and Alcohol	Raw	X	X		X	X		X			X	X	X	X
	Other	X	X		X	X		X						
	Ethyl alcohol	X												
Coffee	Not roasted													
	Roasted			X						X				
	Instant coffee		X	X						X				
Poultry	Chicken uncut (frozen)	X	X											X
	Chicken cuts (frozen)		X											
	Turkey cuts (frozen)	X	X											
Beef	Boneless (frozen)	X	X			X		X			X		X	X
	Preparations							X						
	Boneless (fresh)	X	X			X		X						
Juice	Orange juice (frozen)		X											
Tobacco	Tobacco				X	X					X	X		
Pork	Other (frozen)		X					X					X	X
	Carcasses (frozen)	X	X					X						
	Carcasses (fresh)		X					X						
Fruits	Cashew nuts										x	x		x
	Guavas & mangoes													
	Melons													
	Grapes		X											
	Bananas	X	X											
	Papaws (papayas)													
	Oranges		X											
Corn	Grain	X	X					X			X	X		X
Cocoa	Butter and oil													
	Chocolate, other prep.	X				X			X					
	Powder													
Cotton						X					X	X		

Notes:

1. The "Tariff" column indicates the products with tariffs above 25% after the calculation of the "minimum reduction" proposed by Harbinson. The "TRQ" column indicates products with tariff rate quotas in each country.
2. Domestic Support and Export Subsidies: all the products with notifications at the WTO are indicated.

Sources: WTO Schedules, ERS/USDA Data Base, APEC Tariff (Japan), USITC (USA) and TARIC (European Union). Elaborated by ICONE

Table A5 Harbinson's Proposal (Minimum Cuts) Applied to Developed Countries

Australia (AUS), Canada (CAN), European Union (EU), Iceland (ICE), Japan (JAP), Norway (NOR), Switzerland (SWI) and the United States (USA)
TC=Consolidated tariff
HM = Harbinson (min. cut)

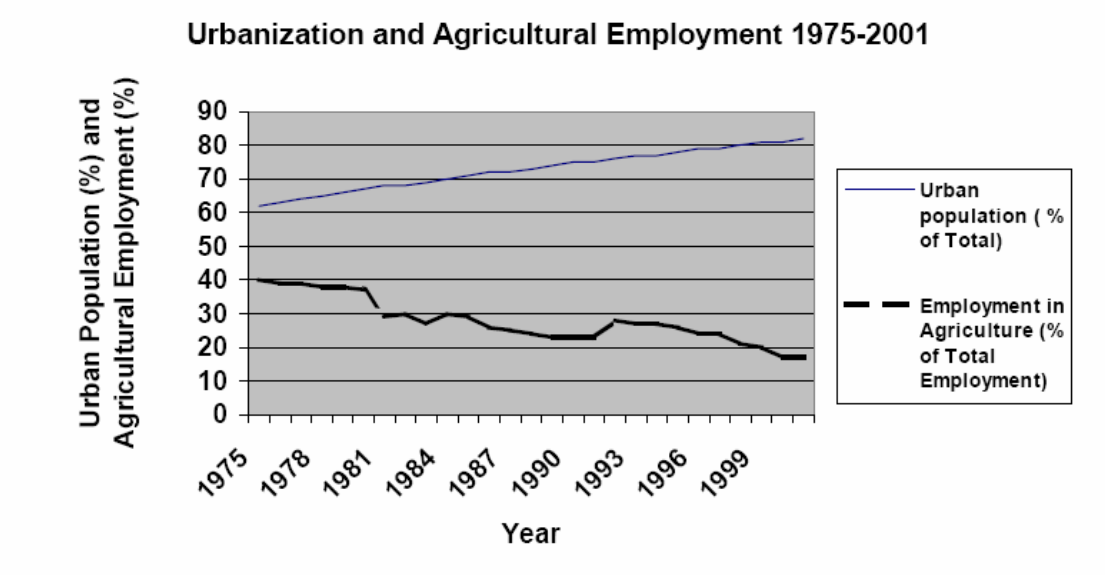
GROUP	NCM – 8	DESCRIPTION	COUNTRIES															
			EU		USA		JAP		CAN		AUS		SWI		NOR		ICE	
			TC	HM	TC	HM	TC	HM	TC	HM	TC	HM	TC	HM	TC	HM	TC	HM
SOYBEAN	12010090	Grain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.8	143.3	**78.8**	207.0	**113.9**	175.0	**96.3**
	23040090	Meal	0.0	0.0	2.3	1.7	46.1	**30.0**	0.0	0.0	0.0	0.0	121.8	**67.0**	172.0	**94.6**	175.0	**96.3**
	15071000	Oil	6.4	4.8	19.1	12.4	32.2	20.9	4.5	3.4	0.0	0.0	253.8	**139.6**	1.7	1.3	107.0	**58.9**
SUGAR AND ALCOHOL	17011100	Raw	124.8	**68.6**	135.4	**74.5**	119.4	**65.7**	6.7	5.0	15.3	9.9	148.2	**81.5**	82.0	**53.3**	175.0	**96.3**
	17019900	Others	106.4	**58.5**	98.5	**54.2**	247.7	**136.2**	5.5	4.2	10.5	7.9	102.2	**56.2**	82.0	**53.3**	175.0	**96.3**
	22071000	Ethyl alcohol >= 80%	62.1	**40.4**	52.6	**34.2**	27.2	17.7	11.3	8.4	10.0	7.5	74.7	**48.6**	497.2	**273.5**	7.0	5.3
COFFEE	09011110	Not roasted	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.8	1.3	1.0	0.0	0.0	12.7	9.5
	09012100	Roasted	7.5	5.6	0.0	0.0	12.0	9.0	0.0	0.0	2.9	2.2	9.5	7.1	1.2	0.9	0.0	0.0
	21011110	Instant	9.0	6.8	0.0	0.0	8.8	6.6	0.0	0.0	2.0	1.5	22.2	14.5	3.0	2.3	58.0	**37.7**
POULTRY	02071400	Chicken cuts (frozen)	73.1	**47.5**	13.6	10.2	11.9	8.9	340.5	**187.3**	0.0	0.0	916.6	**504.2**	601.8	**331.0**	397.0	**218.4**
	02071200	Chicken uncut (frozen)	27.1	17.6	8.0	6.0	11.9	8.9	238.0	**130.9**	0.0	0.0	311.0	**171.0**	508.9	**279.9**	397.0	**218.4**
	02072700	Trukey cuts (frozen)	56.5	**36.7**	12.7	9.5	3.0	2.3	226.3	**124.5**	0.0	0.0	823.4	**452.9**	659.1	**362.5**	422.0	**232.1**
BEEF	02023000	Boneless (frozen)	169.4	**93.2**	26.4	17.2	50.0	**32.5**	26.5	17.2	0.0	0.0	699.0	**384.5**	774.0	**425.7**	304.0	**167.2**
	16025000	Preparation	16.6	10.8	4.5	3.4	50.0	**32.5**	11.0	8.3	11.0	8.3	206.5	**113.6**	800.9	**440.5**	304.0	**167.2**
	02013000	Boneless (chilled)	87.3	**56.7**	26.4	17.2	50.0	**32.5**	26.5	17.2	0.0	0.0	358.3	**197.1**	368.9	**202.9**	304.0	**167.2**
JUICES	20091100	Orange juice (frozen, not fermented)	15.2	9.9	41.5	**26.9**	25.5	16.6	0.0	0.0	24.0	15.6	29.6	19.2	0.0	0.0	10.0	7.5
TOBACCO	240120XX	Not manufactured	25.5	16.6	350.0	**192.5**	0.0	0.0	8.0	6.0	25.0	16.3	9.7	7.3	0.0	0.0	15.0	11.3
PORK	02032900	Others (frozen)	31.7	20.6	0.6	0.4	161.5	**88.8**	0.0	0.0	0.0	0.0	79.2	**51.5**	363.0	**199.7**	457.0	**251.4**
	02032100	Carcasses (frozen)	46.1	**30.0**	0.0	0.0	285.6	**157.1**	0.0	0.0	0.0	0.0	201.7	**110.9**	363.0	**199.7**	457.0	**251.4**
	02031100	Carcasses (chilled)	28.9	18.8	0.0	0.0	179.0	**98.4**	0.0	0.0	0.0	0.0	123.6	**68.0**	363.0	**199.7**	457.0	**251.4**
FRUITS	08013200	Cashew nuts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	7.5
	08045000	Guavas and mangoes	0.0	0.0	10.4	7.8	3.0	2.3	0.0	0.0	0.0	0.0	1.0	0.7	0.7	0.6	20.0	13.0
	08071900	Melons	8.8	6.6	28.0	18.2	6.0	4.5	0.0	0.0	0.0	0.0	3.1	2.3	0.0	0.0	0.0	0.0
	08061000	Grapes	17.6	11.4	1.3	1.0	17.0	11.1	6.0	4.5	10.0	7.5	6.5	4.9	3.3	2.5	20.0	13.0
	08030000	Bananas	233.0	**128.1**	0.0	0.0	25.0	16.3	0.0	0.0	0.0	0.0	31.7	20.6	0.0	0.0	0.0	0.0
	08072000	Papayas	0.0	0.0	5.4	4.1	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.3	0.0	0.0
	08051000	Oranges	16.0	10.4	4.5	3.4	32.0	20.8	0.0	0.0	1.0	0.8	10.1	7.6	318.0	**174.9**	0.0	0.0

GROUP	NCM – 8	DESCRIPTION	COUNTRIES															
			EU		USA		JAP		CAN		AUS		SWI		NOR		ICE	
			TC	HM	TC	HM	TC	HM	TC	HM	TC	HM	TC	HM	TC	HM	TC	HM
CORN	10059010	Grain	75.2	**48.9**	2.2	1.6	88.3	**57.4**	0.0	0.0	1.0	0.8	242.5	**133.4**	343.0	**188.7**	175.0	**96.3**
COCOA	18040000	Buttter, fat and oil	7.7	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.0	0.0	0.0	0.0
	18069000	Chocolate and other prep.	71.6	**46.6**	17.5	11.4	10.0	7.5	6.0	4.5	17.0	11.1	28.3	18.4	50.0	**32.5**	39.0	**25.4**
	18050000	Powder (sugar free)	8.0	6.0	0.4	0.3	12.9	9.7	6.0	4.5	0.0	0.0	8.5	6.4	0.7	0.5	13.0	9.8
COTTON	520100XX	Not carded or combed	0.0	0.0%	24.1	15.6	0.0	0.0	8.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

NOTES:
1. All tariffs expressed in *ad valorem* equivalent, 8-digit SH. Consolidated tariffs in the WTO
2. Underlined tariffs are those submitted to the TRQ regime.
3. Grapes and oranges: Additional tariffs resulting from SSG were not considered

Sources: WTO Schedules. ERS/USDA. AMAD. APECTariff. Customs Tariff 2002. COMTRADE/UN. USITC. SECEX/MDIC and TARIC.
Methodology: ICONE, based on uniform 'reference external prices'
Elaborated by: ICONE

Figure A2 Urbanisation and Agricultural Employment 1975-2001



Source: Patel (2003)

Table A6 Composition of the GDP (1991 to 2002)

Description	**1991**	**1996**	**2002***
Agriculture	**7.8**	**8.3**	**8.2**
Manufacturing	**36.2**	**34.7**	**37.8**
Mineral extraction	1.6	1.0	3.4
Transformation	24.9	21.5	22.4
Civil construction	7.1	9.5	8.0
Public utility	2.6	2.7	4.0
Services	**56.0**	**62.3**	**60.4**
Trade-related	9.8	7.8	7.3
Transportation	3.8	3.0	2.2
Communications	1.2	1.9	3.2
Public Administrations	15.4	16.0	17.2
Others	25.9	33.6	30.4

(*)Preliminary results based on quarterly national accounts reports.
Source: IBGE/Department of National Accounts

Table A7 Composition of employment (individuals > 10 years old)

Activities	1999		2001	
	Occupation	(%)	Occupation	(%)
Agriculture	**17,715,057**	**24.2**	**15,534,227**	**20.6**
Manufacturing	**9,277,303**	**12.6**	**10,143,993**	**13.4**
Transformation	8,474,969	11.6	9,300,279	12.3
Others	802,334	1.1	843,714	1.1
Services	**46,353,171**	**63.2**	**49,779,952**	**66.0**
Construction	4,856,266	6.6	4,921,926	6.5
Trade-related	9,852,487	13.4	10,784,750	14.3
Services rendering	14,189,283	19.3	15,234,057	20.2
Support services to other econ. activities	2,851,531	3.9	3,268,970	4.3
Transportation and communication	2,884,902	3.9	3,167,813	4.2
Social	6,942,503	9.5	7,425,974	9.8
Public administration	3,398,953	4.6	3,635,324	4.8
Others	1,377,246	1.9	1,341,138	1.8
TOTAL	73,345,531	100.0	75,458,172	100.0

Source: IBGE/National Household Survey

Table A8 The Millennium Development Goals: Brazil

Goals	Targets	Indicators	1990/1991 (1)	Most Recent Year		Prospects 2015
1) Eradicate extreme poverty and hunger	1.	1. 5 of population below US$ 1 per day (PPP)		9.9 (1998)		Poverty reduction: risk Hunger:on track
		2. Poverty gap ratio: mean% distance below $ 1 per day (PPP)		3.2 (1998)		
		3. share of poorest quintile in national income or consumption		2.0 (1998)		
	2.	4. prevalence of underweight children (<5) %		6 (199)		
		5. proportion of population below minimum level of dietary energy consumption	13	10 (1999)		
2) Achieve universal primary education	3.	6. Net enrolment rate in primary school	86.4	97 (2000)		On track
		7. proportion of population below minimum level of dietary energy consumption	71.1 (2)			
		8. literacy rate of 15-24 year olds	91.8	95.8 (2003		
3) Promote gender quality and empower women	4.	9a. ratio of girls to boys in primary education		0.93 (2000)		Access to education: achieved
		9b. ratio of girls to boys in secondary education		1.07 (2000)		
		9c. ratio of girls to boys in tertiary education		1.28 (2000)		
		10. ratio of literate females to males 15-24 year olds.	1.03	1.03 (2000)		
		11. share of women in wage employment in the non agricultural sector	40.20	45.68 (2001)		
		12. proportion of seats held by women in national parliament (%)	5	9 (2003)		

4) Reduce child mortality	5	13. under five mortality rate per 1,000 live births	60	36 (2001)		On track
		14. infant mortality rate per 1,000 live births	50	32 (2000)		
		15. proportion of 1 year old children immunised against measles	78	99 (1999)		
5. Improve maternal health	6	16. maternal mortality ratio per 100,000 live births		260 (1995)		
		17. proportion of births attended by skilled health personnel (5)		92 (3)		
6. Combat HIV/AIDS, malaria and other diseases	7	18. HIV prevalence among 15-24 year old pregnant women				On track, very positive results on Hiv/AIDS
		19. contraception prevalence rate; condom use, men aged 15-24 at last high-risk sex (%)		59 (1996)		
		20. number of children orphaned by HIV		130,000 (2001)		
	8.	21a. malaria prevalence, notified cases of per 100,000		344 (2000)		
		21b. malaria death rate per 100,000, ages 0-4		2 (2000)		
		22. proportion of population in malaria risk area using effective malaria prevention and treatment measures				
		23a. tuberculosis prevalence rate per 100,000		46 (2000)		
		23b. tuberculosis death rate per 100,000		10		
		24a. % of TB DOTS detection rate		8.3 (2001)		
		24b. % TB DOTS cure		73 (2000)		
7) Ensure environmental sustainability	9.	25. proportion of land area covered by forest	67	64.3 (2000)		High risk on basic sanitation and safe water
		26. protected area ratio to surface area		0.06 (1997)		
		27. energy supply (apparent consumption, kg oil equivalent) per $1,000 GDP	169.47	148.48		
		28a. carbon dioxide emissions, metric tons of CO2 per capita	1,362	1,774 (1999)		
		28b. ozone-depleting CFCs consumption in ODP metric tons	8,539	6,231 (2001		
	10.	29. % of population with access to improved drinking water sources	83	87 (2000)		
	11.	30. % of people with access to secure tenure	n/a	n/a		
8) Develop a global partnership for development	16	45. share of youth unemployed to youth population, both sexes (%)	4.3 (4)	11.1 (2001) (5)		
	17.	45. access to essential drugs		Between 50 and 80% (1997)		
	18.	47. telephone lines and cellular subscribers per 100 pop.	6.5	42.38 (2002)		
		48. personal computer per 100 pop	0.31	7.48		

(6) Most recent year available.
(7) Data from the UNDP-Brazil web site. Use of UNDP-Brazil web site data when information was not available from the UNDP web site.
(8) Most recent year available for the period 1995-2003
(9) Excluding rural population from states of Rondonia, Acre, Amazonas, Roraima, Pará and Amapá.
(10) April-November 2001. Remarks: methodology revised.
Source: United Nations Statistics Division/Millennium Development Goals

Table A9 GDP Annual Variation (1960-2002)

Year	GDP annual variation (%)
1960	9.40
1961	8.60
1962	6.60
1963	0.60
1964	3.40
1965	2.40
1966	6.70
1967	4.20
1968	9.80
1969	9.50
1970	10.40
1971	11.34
1972	11.94
1973	13.97
1974	8.15
1975	5.17
1976	10.26
1977	4.93
1978	4.97
1979	6.76
1980	9.20
1981	-4.25
1982	0.83
1983	-2.93
1984	5.40
1985	7.85
1986	7.49
1987	3.53
1988	-0.06
1989	3.16
1990	-4.35
1991	1.03
1992	-0.54
1993	4.92
1994	5.85
1995	4.22
1996	2.66
1997	3.27
1998	0.13
1999	0.79
2000	4.36
2001	1.42
2002	1.52

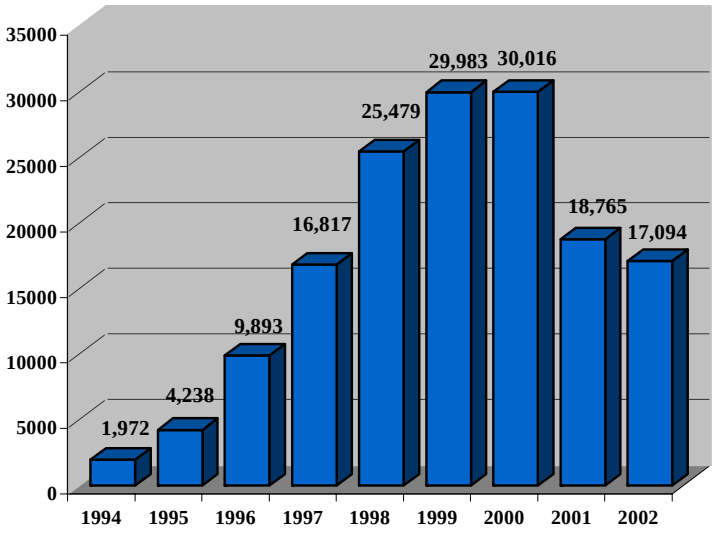
Source: IBGE (compiled by IPEA)

Annex 2 Foreign Direct Investment in Brazil

Contrary to the majority of Latin American countries, Brazil started the process of liberalisation of trade and services only in the early 1990s. It was only after the implementation of the economic adjustment plan in 1994 (Real Plan) that the country became a more stable and attractive environment for foreign direct investment.

In the years immediately following the Real Plan, Brazil received a high portion of all FDI heading to emerging markets: investors favoured Brazil due to its privatisation programs and mergers and acquisitions operations. However, Graph 4 demonstrates that once the boom was over that trend was reversed.

Graph 4 Net FDI* in US$ Million



Note: (*) It includes transactions with national currency, merchandise, conversions and reinvestment.
Source: Central Bank of Brazil

The service sector benefited most from the surge of FDI after 1995: it received 85% of total investment in 1998, 74% in 1999 and 69.6% in 2000. For the year 2000, the FDI stock distribution within the services sector was: services provided to companies (28%), post offices and telecommunications (23%), financial intermediation (17%), electricity, gas and water (13%), wholesales (6%), retailers (4%), informatics (2%) and others (7%). Although services provided to companies, such as legal and accounting services, engineering, and advertising, continue to hold the largest share, there was a steady decline of FDI in that sub-sector (Canuto, Lima and Alexandre 2003).

The surge in foreign investment from 1991-2000 was due to investment liberalisation, privatisation and the development of MERCOSUR. Of these direct investment flows, approximately 40% were tied to the privatisation process and the remainder was dominated by investment connected with bank take-overs and expansion and modernisation of production facilities (Amann 2002).