

3. Toward a More Equitable and Sustainable Brazil

The equity and sustainability pillars of the country strategy primarily address the quality of growth. They reinforce each other and interact through many channels. Poverty and inequality can threaten the sustainability of exhaustible resources, whereas sustainable use of exhaustible resources can affect poverty reduction in many contexts. This is particularly relevant in a rural economy, where water and forests are key resources. Interventions to reduce poverty in the short term may be critical to help human capital formation, which is vital for sustainable long-term growth.

This chapter first examines the relevance and effectiveness of Bank Group assistance on inclusiveness and equity, with an emphasis on social protection, education, and health. It then discusses the achievement of sustainability objectives through the management of exhaustible resources, in particular forests, land, and water. It also discusses the sustained access of poor local communities to land and housing and to services such as electricity, water supply, and sanitation. In rural communities, all these activities are closely linked and are related to the management of natural and human resources for overall community development.

Toward a More Equitable Brazil

The equity-related activities of the Bank Group focused on three subobjectives: reduce extreme poverty and social exclusion, enhance skills formation, and improve health care for all communities. These objectives were maintained throughout the period, though the details and specifics for achieving them changed.

REDUCE EXTREME POVERTY

The most important and successful intervention in this area was the Bank's support to *Bolsa Familia*, a program that provided income support to poor families contingent on some actions by the family to improve the education and health status of their children (see Box 3.1). *Bolsa Familia* started in 2004 and expanded quickly. By 2010, it had provided income transfers to 11.8 million families and more than 50 million beneficiaries – 22 percent of the Brazilian population.

Box 3.1. Conditions for *Bolsa Familia* Assistance

“The program also helps keep the kids in school because they know how important it is for us to get the money and that this depends on them attending school.” – Ms. Dinalva Pereira de Moura, *Bolsa Familia* beneficiary, Vila Varjão (slum), Brasília

The conditions of the *Bolsa Familia* program are intended to break the intergenerational transmission of poverty by promoting human capital investment among children born in poor households. These conditions also constitute an implicit pact between society and poor households: society transfers cash to poor households, which ensure that they invest in their children. By monitoring compliance with the conditions, providers of social services such as education and health can verify whether *availability* of services has transformed into *real and equitable access* to those services.

Benefits are targeted to families that are extremely or moderately poor. The benefits are set according to the number of children (capped at three) and to whether the mother is pregnant or lactating. Monthly transfer amounts range from R\$29–218 (\$16–118) per family per month; the average was R\$75 in 2011^a (Soares 2012). Transfers can be temporarily or permanently suspended if targeting requirements are not satisfied or there is repeated noncompliance. The table below describes the conditions associated with various beneficiary types.

***Bolsa Familia*: Menu of Conditions for Assistance**

Sector and beneficiary type	Conditions for assistance
Health: Pregnant or lactating women***	<ul style="list-style-type: none"> • Prenatal and postnatal checkups • Participate in educational health and nutrition seminars offered by local health teams
Health: Children 0–7 years old	<ul style="list-style-type: none"> • Vaccine schedules • Regular health checkups and growth monitoring of children
Education: Children 6–15 years olds Adolescents 16–17 years old	<ul style="list-style-type: none"> • Enroll in school and attend daily (minimum 85 percent attendance)* • Enroll in school and attend daily (minimum 75 percent attendance)**

*Parents must explain reasons for missing school and must inform the *Bolsa Familia* program coordinator when the child changes schools.

**Benefit started in 2008.

***Benefit started in November 2011.

Sources: Lindert and others 2007; World Bank 2010a.

a. The Secretaria Nacional de Renda da Cidadania (the National Secretariat for Citizens’ Income) in the Ministry of Social Development and Fight Against Hunger reports that the cash transfer could vary from R\$32 to R\$306, and the average benefit awarded, starting April 2011, was R\$115.

The Bank was strongly associated with the program from its inception. During the initial phase of the Lula administration, the Brazilian authorities tried to develop a program that simultaneously addressed economic growth and income distribution in a practical manner. In this context, the Bank helped organize a seminar where there was focused discussion about global experience with social assistance

programs. The meeting was attended by President Lula, most of his cabinet members, the World Bank President and Chief Economist, and international experts on conditional cash transfers. The idea of *Bolsa Familia* gained momentum in this seminar and in associated dialogue.

The Bank's sustained support through close dialogue with the relevant counterparts in all the phases of *Bolsa Familia's* evolution is acknowledged by a wide range of Brazilian counterparts—it may be the most valued contribution of the Bank across all its assistance strategy. The Bank helped in the efforts to consolidate existing social programs,¹ establish a unique register of beneficiaries (*Cadastro Único*), improve targeting, and enhance monitoring and evaluation systems. This was done through two Adaptable Program Lending (APL) operations in FY04 and FY11.

The Bank's most significant contribution was its technical and knowledge assistance, as its financial support was marginal to the overall scope of the program.² The APLs were complemented by a technical assistance loan aimed to strengthen government capacity to monitor the progress, impact, and targeting of social policies. An extensive AAA program also provided flexible means for analytical support. The multiyear BRASA³ provided support to improve the design and implementation of the *Bolsa Familia's* targeting as well as the monitoring and evaluation system. The BRAVA helped strengthen technical capacity for monitoring and impact evaluation at the Ministry of Social Development.⁴ As a result, lessons from global experiences with conditional cash transfers, both in Brazil (*Bolsa Escola*) and in other countries (such as Colombia and Mexico), were incorporated into *Bolsa Familia's* design, implementation, and operation.

The target performance indicators for the first APL were either achieved or surpassed for coverage of the poor, targeting accuracy, and school attendance (Table 3.1). Targeting accuracy was exceptional: 68 percent of benefits were received by those in the bottom quintile; the outcome target was set at 40 percent.

Table 3.1. Outcome Achievement during the *Bolsa Familia* APL 1

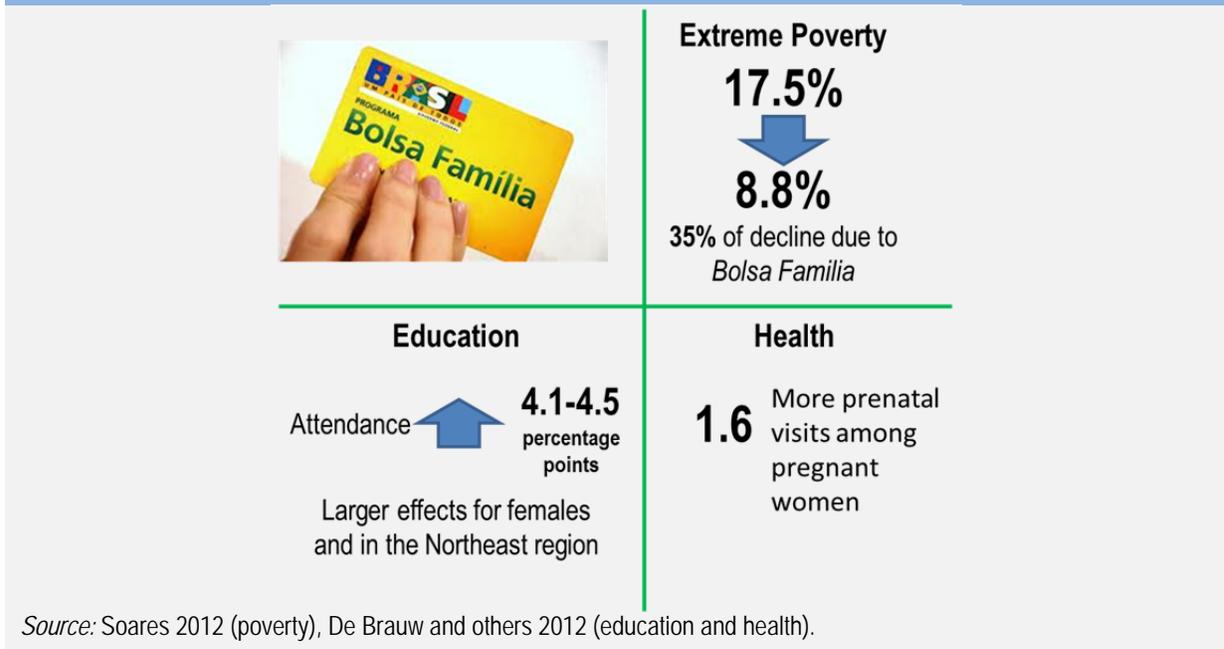
Outcome indicator	Status
At least 2/3 of extreme poor families receiving <i>Bolsa Familia</i> transfers	Achieved—11.1 million families receiving benefits (100 percent of target)
At least 40 percent of total transfers going to bottom quintile	Surpassed—68 percent of <i>Bolsa Familia</i> benefits were received by those in the poorest quintile (and 90 percent by those in the poorest two quintiles)
At least 80 percent of primary-age school-age children in extremely poor beneficiary families attending school	Surpassed—87.4 percent attending school had a monthly attendance rate above 85 percent (2009)
At least 95 percent of beneficiary children with health cards	Partially achieved—reporting of compliance improved in recent years, although information is only available for about 64.48 percent of families; 67.7 percent of children of beneficiary families have their vaccinations monitored.

Source: World Bank 2010a.

Intermediate outcome indicators were achieved as well: the four federal programs that preceded *Bolsa Familia* had been integrated and included in the *Cadastro Único*, targeting instruments had been strengthened, and *Cadastro Único* had been updated and purged of duplicates. By 2009, nearly all municipalities had online access to the *Cadastro Único* database.⁵ The economic analysis and simulations undertaken to quantify the expected impact of *Bolsa Familia* on poverty, inequality, and educational attainment helped enhance the credibility and robustness of the results framework.⁶

Several studies document the positive impact of the program (Figure 3.1). Extreme poverty declined, and an attribution analysis finds that about 35 percent of that reduction is due to the program (Soares 2012). A study finds that school attendance was raised with much larger effects for females and in the poorer northeast region.⁷ On health, the evidence indicates that pregnant women have more prenatal visits with health care professionals (De Brauw and others 2012).

Figure 3.1. Impacts of *Bolsa Família*



The Bank is starting to assist a second-generation program that evolved from *Bolsa Família* – the *Brasil Sem Miséria* program, which focuses on extreme poor families. The second *Bolsa Família* APL, the implementation of which started in 2012, includes support for creating the secretariat responsible for coordinating the *Brasil Sem Miséria* Program.

In sum, *Bolsa Família* has been successful to the extent that it expanded quickly and reached a high percentage of the extreme poor and a large share of the moderate poor in Brazil. It also helped alleviate poverty and inequality of those families at a moderate fiscal cost, while promoting human capital investment in children and youth. The Bank helped the government achieve these results primarily through technical and analytical support, as its financing of cash transfers was limited, relative to the total size of the program. The Bank effectively leveraged its analytical strengths, particularly its ability to consolidate and package global knowledge on relevant issues to be applied in the Brazilian context, to generate a large-scale impact.

The FY04–07 CAS also included other subobjectives, such as reducing youth unemployment and decreasing wage and service gaps for indigenous populations. These objectives were ambitious and complex, and the issues they addressed were influenced by many factors beyond the control of instruments available to the Bank. The CAS Completion Report (CASCR), a self-evaluation by Bank staff,

acknowledges that the Bank did not have a comparative advantage in these areas. In consequence, it achieved very little on these objectives.

IMPROVE KNOWLEDGE AND SKILLS

The Bank's main activities in this area were in the education sector. Brazil made progress in expanding access to education and improving the quality of education during the evaluation period. As already noted, *Bolsa Familia* helped expand access to education for children in poor families. The Index of Development of Basic Education shows improvement in both primary and secondary education. This is consistent with sustained progress in Brazil's score in the Program for International Student Assessment of the Organisation for Economic Co-operation and Development.

An important part of education operations during the FY04–07 CAS period was continuation of projects approved in the preceding CAS period. The Bahia Education Project and *Fundescola* series (II and IIIa) helped expand access to basic education and reduce some of the disparity of resources and performance in project schools in the north and Northeast Brazil. They also contributed to establishing pedagogical models used in subsequent lending operations. Schools were encouraged to develop their own development plans as a way to strengthen their autonomy and to improve management efficiency in the *Fundescola* series, the Bahia education project, and the Ceará basic education project. They were given grants to implement the activities included in their development plans. An evaluation of *Fundescola*'s school planning and grants found that schools that received more grant funding from *Fundescola* performed better in student learning, although there was no clear effect on achievement from schools' development planning (Carnoy and others 2008).

Early work toward developing learning assessment systems began with *Fundescola* and informed the subsequent refinement by the Ministry of Education. IEG rated the outcomes of these education projects – except for *Fundescola II* – less than satisfactory because of limited evidence of the impact on student learning. A considerable population of the newly enrolled students came from poorer backgrounds, which may have affected how quickly the learning outcomes improved. In addition, students who in the past had dropped out were staying in school (World Bank 2007c), putting more pressure on schools and teachers.

The Bank's approach during the FY04–07 CAS seems to have been more sporadic in comparison. Many of the lending and AAA tasks foreseen in the CAS were dropped, including activities in early child development (ECD), a topic that could be highly complementary to the assistance to *Bolsa Familia*.⁸ Most of the AAA addressed broad

aggregative issues of human development, innovation, and growth, with less policy relevance for educational reform at the micro level. Despite the ambitious CAS objectives for improvements in the quality of ECD and primary education, and enhancing access and quality of secondary education, few instruments were deployed to help the authorities reach these objectives.

One notable knowledge contribution of the Bank was its provision of advice to the National Institute for Education regarding reforms to a funding mechanism that equalized primary education resources across states. The Bank analysis helped show the positive impact of this policy and of its expansion to include ECD (Box 3.2). This policy has provided incentive to expand enrollment, particularly in states with low tax revenues, such as those in the north and northeast.

Box 3.2. Impact and Evolution of the FUNDEF

Prior to the FUNDEF, education spending varied across regions, with schools in the northeast having the lowest level. Under the reform, a minimum per student funding was guaranteed, which created an incentive for school systems to expand enrollment. Funding was equalized by sharing resources across municipalities within a state, as well as redistributing federal funds to those states that could not reach the minimum threshold with their own revenues. Six of 26 states have typically received the additional federal resources.

In 2007, this reform was expanded (and renamed FUNDEB) to provide resources to municipalities for ECD (infancy to six years old) and secondary education, based partly on Bank advice. This is one reason for the rapid increase in access, with gross secondary enrollment rates in 2008 exceeding 100 percent and in 2009 preschool (age four to six) and crèche (infancy to three years) enrollments reaching 81 percent and 18 percent, respectively. The Bank has suggested that reallocating resources for ECD nationally, rather than within states, would facilitate further enrollment increases, considering the varying abilities of municipalities to make additional investment.

Source: Evans and Kosec 2012; Bruns, Evans, and Luque 2012.

The Bank activities in education gained renewed impetus under the FY08–11 CPS. The Bank made a major contribution to knowledge in the sector toward the end of the evaluation period, when it shifted emphasis to the quality of learning on the basis of observing the interaction between students and teachers in the classroom. This provided the basis for a significant amount of analytical work and dialogue that also took into account international experiences. The contribution of the Bank in this area has been recognized by several key stakeholders in Brazil.

One example of this analytical work was the study *Different Paths to Student Learning* (World Bank 2008a). The study was requested by the Ministry of Education to identify policies that would enable some municipalities and schools to obtain higher

scores on standardized tests despite low student socioeconomic status. It led the ministry to provide municipalities with additional resources to adopt particular practices.

Analysis of observations of classrooms and teacher practices, summarized in *Achieving World Class Education* (Bruns, Evans and Luque 2012), has provided policy makers with a way to benchmark how teachers in Brazil use instructional time in comparison with other countries. The Bank also evaluated teacher and school performance bonuses linked to improved student learning in the Pernambuco Education Quality Improvement Project.⁹ This work offered new insights about the conditions under which bonus schemes can improve student outcomes – bonus systems have now been established in 20 states and municipalities. These findings have helped shift the policy dialogue toward teachers and their effectiveness. Policy makers are now examining issues such as how to recruit, support, and motivate teachers.

Also during this period, the Bank reestablished interest in ECD. By the end of the FY08–11 CPS period, the Bank focused its support for ECD with analytic work and lending. The study *Early Childhood Education: Making Programs Work for Brazil's Most Important Generation* (Evans and Kosec 2012) showed that there were stark disparities in coverage and quality across states. It stressed that future investment in ECD need to be adaptable and creative and to reach and benefit the poorest children. One example where this knowledge was incorporated was a large DPL to the Municipality of Rio de Janeiro to help improve the delivery of services in poor areas. It helped improve ECD interventions for the disadvantaged in slum areas in the city. The Acre Social Economic Inclusion Project also employed new models for ECD, including nonformal services and home-based visits.

On the lending side, most of the activity was concentrated during the FY08–11 CPS period. The instrument of choice was multisector SWAp operations to subnationals, with education as one of the sectors. These operations typically focused on early literacy, accelerated learning programs for over-aged students, early childhood development, school and teacher performance bonuses, and spending efficiency.

Progress in the sector is often measured by a few indicators, such as reduction in the illiterate population 15 years and older, improved learning achievement, improved score on the Index of Development of Basic Education, reduction in age-grade distortion, increase in completion rate, and increase early childhood enrollment. Most of the operations approved during this period have not been completed,¹⁰ so it is too early to assess their impact. But experience points to the growing importance

of strong analytic and policy dialogue that would deepen understanding of each state's education sector with these types of operations.

Brazil was IFC's largest education sector portfolio at the end of FY11, with \$135.6 million in commitments. During the review period, IFC invested in six projects in the education sector for a total net commitment of \$189 million. The major counterpart in these investments is Anhanguera Educacional S.A (AES), a major vocational training company in Brazil. Since FY06, IFC has been supporting AES through various instruments. With the growing middle class in Brazil, AES increased its student enrollments from 10,800 in 2005 to 435,000 in 2012, with a compound annual growth rate of 64 percent by implementing its aggressive acquisition strategy. However, given that AES has raised over \$1.6 billion from the capital market from 2007 to 2012 and that IFC's financing to AES was \$40.6 million, IFC's financial contribution to this expansion is small.¹¹

INCREASE ACCESSIBILITY TO QUALITY HEALTH CARE FOR ALL COMMUNITIES

Over the past 20 years health outcomes in Brazil have improved significantly. Data indicate early or imminent achievement of such Millennium Development Goal indicators as halving the number of underweight children and attaining a two-thirds reduction in mortality rate of children younger than five. These improvements have been underpinned by such factors as economic growth, reduction in income disparities, improved education of women, and decreased fertility rates. Several interventions outside the health sector – conditional cash transfer programs and improvements in water and sanitation – have likely helped, too. Success has also been facilitated by Brazilian authorities' efforts in health systems development, spearheaded by the 1990 establishment of a constitutionally mandated, tax-funded unified national health service (*Sistema Único de Saúde*).¹²

During the evaluation period and the preceding decade, the Bank Group was active in the majority of key reforms in health in Brazil. It has also been involved in many of the interventions outside the health sector that contributed to improved health outcomes. Feedback from interviews points to the particular value of the Bank's involvement for discipline in planning, monitoring, evaluation, and performance review.

A number of projects approved in the FY99–02 CAS period (Family Health Extension Project [PSF], HIV/AIDS Control Project II, and Vigisus) continued their implementation during the evaluation period.¹³ The PSF, a flagship project that pioneered the sectorwide pooled lending approach in Brazil, was perhaps most significant. It emphasized the reorganization of primary care so that primary health

care clinics and teams focused not just on maternal and child health, but on families and communities more broadly. It integrated medical care with health promotion and public health actions and provided incentives to municipalities – the main players in the organization and delivery of a highly decentralized system – to adopt relevant reforms and practices.

Through this project, the Bank contributed to the development of systems for monitoring and evaluation as well as performance management. The pooled lending approach, which disbursed against qualified expenditures in the program, brought the Bank to the heart of this major policy initiative. The main FY08–11 CPS outcome measure for investment in health was the proportion of people covered by the PSF. The target of 55 percent was almost reached (52.7 percent), meriting a rating of substantial progress in the CASCR.

During the period evaluated, the Bank’s engagement shifted through various issues that span the breadth of the health system in Brazil. Between FY04 and FY11, 17 operations containing health-related components were approved, totaling about \$1.3 billion dollars,¹⁴ with most of the activity concentrated in FY08–11. Five operations, accounting for half of the financing, were freestanding federal-level operations. They sought to address systemic and countrywide issues, such as communicable diseases, disease surveillance, reforms involving federal-subnational coordination, and reforms at the tertiary level, with particular reference to medical education and research.¹⁵

The remaining 12 operations were subnational multisector DPLs or SWAs that addressed resource allocation, efficiency, and management practices across a number of sectors, including health.¹⁶ This emphasis on multisectoral lending was designed to help subnational entities build their own fiduciary and public sector management systems and to help build synergies across sectors. Health sector issues in these operations varied, depending on local factors. In some poorer and more rural states, projects focused on infant and maternal mortality by targeting improvements in maternal and neonatal services and access to clean water. In wealthier states, projects focused on consolidating emergency care and transfer systems between municipalities and the state, implanting standardized costing systems in hospitals, and encouraging PPPs.

AAA activities during the period evaluated appear to have matched evolving country priorities and pointed the way to a new generation of challenges. These challenges include noncommunicable diseases (World Bank 2005), achieving efficiencies in the health system, and better management of resources (World Bank 2007a). A major report, *Hospital Performance in Brazil* (La Forgia and Couttolenc

2008), analyzes Brazilian hospital performance on several policy dimensions, including regulatory issues, resource allocation, and payment mechanisms. The report was sponsored by the Ministry of Planning. It supported much of the policy dialogue in this area and also in relation to specific operations.

Hospital do Subúrbio – a PPP project structured by the Brazil Private Sector Partnership Program among BNDES, IFC, and IDB – offers an interesting model for efficient hospital management. The hospital serves the poor community of Salvador in Bahia, providing health care services using performance standards that apply to a private hospital operator. IFC’s involvement was critical in structuring this first PPP hospital transaction in Brazil. IFC provided global experience in the health sector PPPs, played “honest broker,” and mobilized private sector funding. This project served as a model for hospital projects in seven other states and municipalities in Brazil.

RATING OF THE EQUITY PILLAR

In the three areas discussed above, the Bank Group seems to have made important contributions when know-how, dialogue, and financial support were combined to create synergies. The best examples are the support to *Bolsa Família* and the analytical work and dialogue that improved understanding of the classroom dynamics. The advisory work to improve education funding for poorer municipalities and their capacity to finance ECD programs is also a notable achievement.

In health, the Bank has made valuable contributions through sustained efforts to support progress in eliminating communicable diseases, reducing transmission of HIV/AIDS, and expansion of the PSF. The PSF project also pioneered the sectorwide pooled lending approach in Brazil. In addition, IFC was instrumental in structuring an innovative hospital project in Bahia. Although challenges in further improving the effectiveness of public services remain, the Bank’s sustained support for the *Bolsa Família* has led to an exceptionally strong partnership with the government counterpart – a practice that should be examined further for replication elsewhere in the Bank. Based on this evidence, this pillar of Bank Group assistance during the period evaluated is rated satisfactory.

Toward a More Sustainable Brazil

The Bank Group strategies for sustainability had three major objectives: better water quality and water resource management; more sustainable land management, forestry, and biodiversity (including improved land access and protection of

indigenous communities); and more equitable and integrated access to local services, particularly in poor urban and rural communities. These objectives are closely linked, and many of the Bank Group interventions address more than one of them. They are also highly relevant to the objective of reducing extreme poverty.

BETTER WATER QUALITY AND WATER RESOURCE MANAGEMENT

The Bank has had a sustained engagement with water resource management and water supply and sanitation in Brazil at both the federal and subnational levels. During the FY04–07 CAS period, the emphasis was on the regulatory and management aspects of water systems at the national, regional, state, and municipal levels, with continuing support for investments in relevant infrastructure. Projects at the federal level, such as the Federal Water Resources Management Project, focused on priority water resource management investments as well as on improving the planning, regulation, and management of water systems at the state and river basin levels. Similarly, the Water Sector Modernization Project and the earlier Low-Income Sanitation Technical Assistance Project focused on improving the efficiency of water and sanitation utilities; strengthening the weak institutional and regulatory framework for water supply and sanitation; increasing private sector participation; and providing technical assistance for slum upgrading and water supply services to the urban poor.

In the FY08–11 period, state and municipal projects were the main vehicle to enhance the water management system and to reach underserved communities. State-level integrated water resource management projects that address systemic water management issues were extended to Rio Grande do Norte, Pernambuco, Espírito Santo, and Ceará. Two operations in São Paulo addressed these issues in a densely populated metropolitan region. Of particular interest were the multisector operations, which provided considerable additional support for water, especially the SWAp series in Ceará – a state with severe scarcity of water resources. These SWAps focused on key water sector issues in addition to financing major investments, which led to increased coverage and efficiency.

One feature of the Bank water portfolio in Brazil is its close integration with both sanitation objectives and urban development projects and slum upgrading. A number of city-based operations approved in FY04–11 included considerable support for water investments and related issues. In fact, projects containing important water components were targeted to municipalities in both rural and urban areas, while some activities are part of community-driven development (CDD) projects addressing many cross-sectoral challenges. The CDD projects have special features and will be discussed separately.

In the water sector, IFC and the Bank demonstrated an interesting model of collaboration. Under the Subnational Financing Program, IFC extended loans to water utility companies in Sergipe and Santa Catarina to improve their operational efficiency. This involved close collaboration with a Bank specialist, who was instrumental in linking the IFC team with potential subnational clients, supporting coordination with the federal government, and contributing to analyses on sector-specific technical issues during the project development phase as the coleader of the joint IFC-Bank team. Sector expertise from the Bank proved to be particularly valuable, given IFC's relative unfamiliarity with the water sector in Brazil.

These engagements in the water sector have made significant contributions in some areas. According to IEG's reviews of completed projects, Bank support helped enhance water resource management in priority river basins – in the northeast in particular – and strengthen the National Water Agency. It also helped expand access to water supply and improve the efficiency of service delivery by encouraging a more competitive and better regulated environment. However, the impact of operations in states varied. There was limited progress on implementing bulk water supply cost recovery systems and enhancing water quality, though there was significant improvement in the provision of water supply to households.¹⁷

Government counterparts view the Bank as a key partner helping tackle diverse challenges, ranging from environmentally sensitive river basins to deteriorating water quality, sewerage coverage and treatment, utility management, and financial sustainability. The Bank's convening power was recognized as useful in promoting and providing a platform for a multidisciplinary deliberation across different levels of government – an essential component for water resource management in the federal system. More recently, the Bank approved the Federal Integrated Water Sector Project (FY11, \$107 million) – a large technical assistance loan to help address the persistent challenges in Brazil's complex water resource management system, including interagency coordination, weak planning and portfolio of projects, and limited institutional capacity. Though the project has just gotten started, a senior official observed that the preparation process has had positive effects by strengthening links between different federal entities and subnational levels.

MORE SUSTAINABLE LAND MANAGEMENT, FOREST, AND BIODIVERSITY

A prominent component of the sustainability pillar of the FY04–07 CAS and FY08–11 CPS addresses the “paradigmatic” challenge of reconciling growth, poverty reduction, and conservation of forest environmental values. Forests have been cut down mostly to create large, low-productivity ranches, but also small plots of subsistence farming, highly profitable soy plantations, and hydropower reservoirs.

Against these gains is the widespread damage caused by deforestation: biodiversity loss, global climate change as a result of forest burning, hydrological and local climate impacts, and loss of land and livelihoods by forest dwellers.

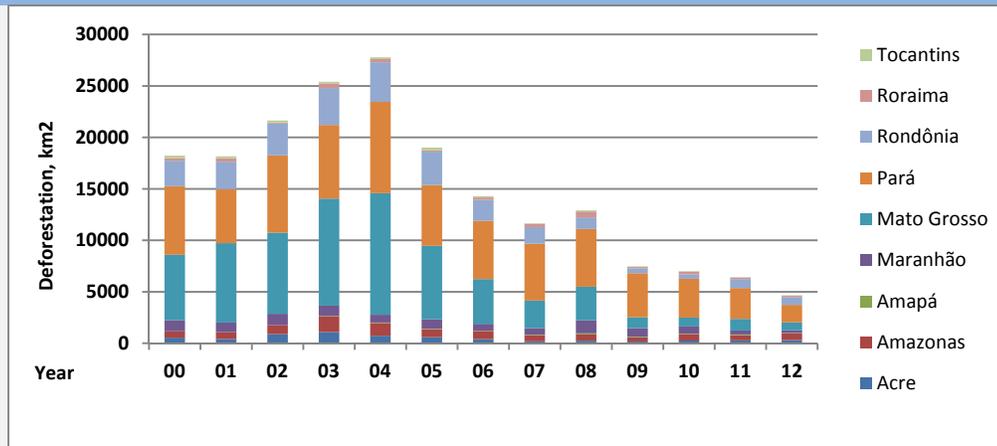
The Bank has long struggled with optimizing these trade-offs, shifting from a problematic development emphasis in the 1980s to a conservation emphasis in the 1990s. The first CAS reemphasized the need for a sustainable balance. It set “more sustainable land management, forests and biodiversity” as a priority goal to be achieved through land use zoning, promotion of certified logging, and increased forest protection. This CAS coincided with the initiation of the Brazilian government’s vigorous Action Plan for the Prevention and Control of Deforestation in the Legal Amazon, also known as PPCDAm.

The FY08–11 CPS treated forests more prominently than its predecessor, signaling increased attention to conservation/development balance. It outlines an approach that supports forest protection, indigenous lands, “the power network and logistical corridors in sensitive biomes” (meaning hydropower and roads in the Amazon),¹⁸ payment for environmental services, certification of “sustainable agribusiness and forestry,” and “improving the environmental and social quality of infrastructure lending.” It also promised to boost income, health, and educational outcomes in the Amazon region. Appendix Table F.1 summarizes the relevant indicators of the FY08–11 CPS.

Outcomes at the National Level

Amazônian deforestation declined dramatically over 2004–12 (Figure 3.2), surpassing the most optimistic views at the beginning of the period. This reduction, *if maintained*, could be considered one of the great turnarounds of environmental destruction in the modern era. Deforestation also declined in the Atlantic Forest and in the *cerrado*. Although general economic factors played some role, deforestation decline is strongly related to Brazilian policy interventions, including some supported by the Bank.

Figure 3.2. Amazonian Deforestation by Year and State, 2000–12



Source: http://www.obt.inpe.br/prodes/prodes_1988_2012.htm

Note: 2012 is a preliminary estimate.

Although the goal of *improving* relative household incomes in the Amazon was not met, the deforestation crackdown at least did not *reduce* incomes. It decelerated but did not halt the formerly rapid growth of the Amazônian cattle herd.

Tracing Channels of Bank Group Action

This section traces the links from Bank Group action to government policies and programs, and from those to impacts on the ground. First is regulating large infrastructure – dams and major roads – that carries the potential both for large gains and large damages. Second is promoting sustainable land use and poverty reduction through conservation, regulation, incentives, and technical assistance. Third is mainstreaming climate change in public and private sector investments.

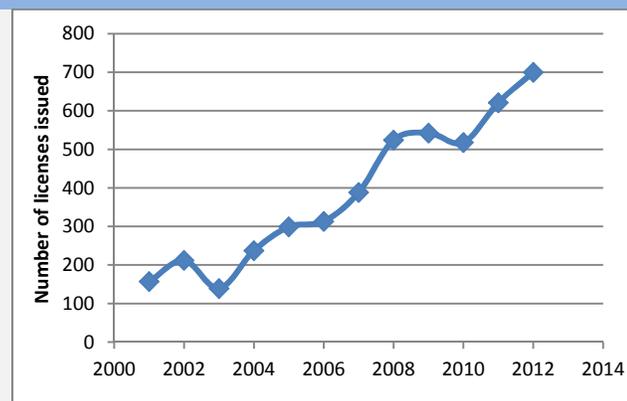
Infrastructure Licensing and Safeguards: Brazil’s environmental licensing system needs to grapple with complex and difficult trade-offs. Notably, the government plans a massive expansion of hydropower in the Amazon, offering a potentially large supply of nonfossil energy but requiring careful attention to the risks of social and environmental damage. The existing system of environmental impact assessment and licensing was diagnosed by the Bank as doubly inadequate. On one hand, a Bank study¹⁹ found that such assessments were often of poor quality and that the licensing authorities had limited capacity to evaluate them. On the other hand, the FY08–11 CPS characterized the licensing system as slow moving and an impediment to rapid implementation of needed infrastructure. Three strands of Bank involvement relate to this challenge.

First, the National Environment Project II focused on improved licensing. The first phase of this APL helped establish environmental licensing in 7 states and improved the licensing system in 12 more. It was credited by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), the federal environmental enforcement agency, with support for its public information system on licensing. The second phase of this project, however, has made little progress since its initiation in 2009.

With regard to hydropower licensing, a Bank-sponsored study called for better delineation of federal versus state licensing responsibilities, which was subsequently accomplished through a complementary law (World Bank 2008b). The study also called for more attention to river basin level planning of hydropower and systems-level power planning, as did a Bank-supported section of a key hydropower guidance manual (Ministry of Mines and Energy 2007). However, there is still no requirement for a comprehensive strategic environmental assessment of hydropower options at the river basin level.

The \$1.3 billion Sustainable Economic Management Development Policy Loan (SEM DPL, 2008) tried to encourage further actions in this area. A target outcome of the DPL and the CPS was for BNDES to adopt a new environmental and social policy and to use it to screen and monitor all projects. The program self-evaluation (World Bank 2011a) states that by June 2011, all projects submitted directly to BNDES were screened, approved, and monitored according to the new environmental and social institutional policy. However, the extent to which it improved the quality of projects approved for financing, enhanced BNDES's monitoring and supervision, and resulted in improved environmental and social compliance is not fully known at this time.²⁰

Figure 3.3. Licenses Issued by IBAMA, 2001–12



Source: Sistema Informatizado de Licenciamento Ambiental Federal, www.ibama.gov.br/licenciamento.

The SEM DPL also had as an outcome indicator the increased issuance of licenses by IBAMA. IBAMA added staff and improved systems during this period, and license issuance continued its post-2003 growth trend (Figure 3.3). However, effectiveness of the implementation of safeguards and license conditions has yet to be verified, as the increased number of licenses issued does not necessarily lead to improvement in

environmental outcomes. These issues merit continued attention, given the FY08–11 CPS emphasis on reconciling conservation with development in the Amazon, including reengagement in energy and transport infrastructure; the program’s goal of “improvement of the environmental management framework for infrastructure and natural resource-based productive chains”; and BNDES’s role in financing activities in environmentally sensitive sectors, including large-scale infrastructure in the Amazon. It is also highly relevant to the FY12–15 CPS focus on sustainable management of natural resources.

Forest Protection: The most obviously attributable contributions of the Bank to reduced deforestation were in forest protection. The Rain Forest Indigenous Lands Project (PPTAL) supported demarcation and recognition of 87 indigenous territories encompassing 37 million hectares of lands—a major advance in securing indigenous rights and in regularizing Amazônian land. It developed useful operational methodologies that have been incorporated into the procedures of FUNAI, a government body that establishes and carries out policies relating to indigenous peoples procedures. There was no Bank loan for a follow-up project to improve indigenous peoples’ livelihoods.²¹

The Amazon Region Protected Area Project (ARPA) created 24 million hectares of new conservation units, about equally divided between strict protection and those allowing sustainable use by forest dwellers. Overall, about 47 percent of protected areas in existence in 2010 were created under ARPA. The program helped create a strategic bulwark against the advance of the agricultural frontier, while also securing large tracts in more remote areas (Santos, Pereira, and Veríssimo 2013). It innovated by using FUNBIO, a quasi-official nongovernmental organization created by a prior Bank project to funnel grant funds directly to conservation unit managers. However, the program was less successful at setting up effective management plans for the conservation units. By 2012, 32 of 98 ARPA-supported areas had completed management plans;²² many are viewed as overly academic and lacking practical guidance. Forty-seven areas had management councils that incorporate local representatives.

Together, ARPA and PPTAL put 610,000 square kilometers under protection, roughly the size of Germany and the United Kingdom combined. A recent rigorous analysis of the impact of Brazilian protected areas looked at the overall impact of protected areas created in or before 2005 on deforestation over 2006–10 (Nolte and others 2013). It found that strict protected areas reduced deforestation by 1.8 percentage points, indigenous territories by 1.2, and sustainable use areas by 0.6 percentage points.

Attempts to mainstream protected area establishment into statewide road-planning in the *cerrado* states of Goiás and Tocantins have made less rapid progress. In Goiás, a project succeeded in mapping biologically sensitive areas and put 1 million hectares under a very weak form of protection (IEG 2009d). Overall, the project made more progress on roads than on environmental management. In Tocantins, a similar project began the preparation of 18 protected areas (more than was planned), but none has advanced to formal recognition.

Land and Forest Use Regulation and Enforcement: Brazil has deployed a set of approaches to prevent illegal seizure of public lands, regularize land tenure, and increase private landholders' compliance with land and forest law. These include a *policing-type approach to detection and punishment of illegal deforestation by IBAMA*. This activity became much more effective after 2004, because of a series of government policy actions.²³ According to an econometric analysis by Assunção, Gandour, and Rocha (2013), the result was a 75 percent reduction in deforestation, without a reduction in economic output. The Bank's contribution to this was indirect. The Programmatic Reform Loan for Environmental Sustainability (2004) has been credited with boosting the profile and capacity of the Environment Ministry and of IBAMA, arguably bolstering IBAMA's ability to carry out this program.

A parallel track has been to *assist state environmental agencies to monitor and enforce private landholders' compliance with the Forest Code*. The Code requires private landholders to maintain part of their property under forest as a "legal reserve," in addition to maintaining forest on streambanks and hillsides – requirements that have been widely flouted. In 2000, the Bank, via the Pilot Program to Conserve the Brazilian Rain Forest (PPG-7), supported what has turned out to be a catalytic approach to this: Mato Grosso's SLAPR licensing system. SLAPR required landholders to register property boundaries and conservation commitments in a state-run geographic information system. The state uses this information to license the landholder's logging and agriculture. Compliance is monitored via remote sensing, which drastically reduced monitoring costs. In practice, the system has worked imperfectly. After 9 years, just 30 percent of nonprotected areas had been enrolled, and deforestation continued on licensed properties (Rajão, Azevedo, and Stabile 2012; Bastos, Micol, and Andrade 2009).

Nonetheless, Mato Grosso's SLAPR system became a reference for a nationwide rural environmental cadaster (*Cadastro Ambiental Rural*, or CAR) program. This evolving program aims to become the first comprehensive, systematic, transparent registry of landholdings in the Amazon and nationwide. As such, it has been used as a tool for a variety of command and control and incentive mechanisms, including some that have been effective in reducing deforestation (see below). CAR

registration is mandatory under the new Forest Code and will serve as a first step in the states' environmental regularization and licensing procedures in rural areas. The CAR is explicitly not designated as a land titling mechanism,²⁴ but in practice the cadaster will serve as a kind of rough draft of an eventual universal land registry and will facilitate land titling efforts.

In addition, each of the 46 *municípios* "blacklisted" by the government for high deforestation rates needs to enroll 80 percent of its area in the CAR to be taken off the blacklist. This requires an intensive grassroots effort to enroll and georeference properties and a coordinated effort to assemble remote sensing imagery and maps. With a small PPG-7 grant, the Bank partially funded a Nature Conservancy-led effort to implement CARs in blacklisted *municípios*. These have been successful at the local level and are welcomed by local environmental authorities as a powerful tool for management. The CAR could also support the implementation of two important deforestation control measures developed by Brazil without direct Bank support: the cutoff of agricultural credit to noncompliant landholders (Assunção, Gandour, and Rocha 2013) and the requirement that meatpackers buy from compliant suppliers.

Complementing the licensing and cadaster efforts is a *long-standing effort to support ecological-economic zoning*, which continues under the ongoing CPS. There is a sound theoretical argument for zoning as a tool for optimizing conservation and development trade-offs. For example, some areas are favorable for sustainable agriculture, some contain irreplaceable endemic species, and some need large contiguous areas to ensure the survival of ecosystems. Yet in Brazil – and globally – zoning exercises have had little impact on the ground. That appears to be generally the case to date with the Bank-sponsored plans, with two exceptions and a caveat. First, zoning builds on Bank-supported efforts to identify and demarcate protected areas. These are enshrined in zoning and influence licensing and infrastructure decisions. Second, observers in and out of the government point to Acre's zoning plan as one that was developed in a participatory fashion and incorporated in policy processes and that has the best prospects for effective implementation.

Finally, the new Forest Code contains incentives for states to institute and apply zoning.²⁵ Ultimately the impact of zoning will depend on Brazil's political will and administrative ability to implement CAR and enforce the new Forest Code.

Support for Sustainable Private Sector Land Management: The Bank Group supported several avenues for making private sector actions more environmentally friendly. *Payment for environmental services* (PES) featured prominently in the FY08–

11 CPS. The idea is to reward those who conserve or plant forests for the environmental benefits that they provide.

Global Environment Facility–funded projects have supported two nascent PES systems, in Espírito Santo and São Paulo. Both have helped establish state-level regulations on PES, but actual implementation is only beginning. In Espírito Santo, Bank staff helped the state adopt an ambitious plan to reforest 320,000 hectares by 2025 by introducing to policy makers relevant programs from New York City and Costa Rica and by linking PES to the Bank’s longstanding dialogue with the state on water supply.²⁶ If it succeeds, it could advance biodiversity, carbon storage, poverty reduction, water quality, legal compliance, and municipal cost savings. But it faces challenges: devising payment schemes that balance equity and efficiency, developing appropriate technologies for the state’s highly diverse agroecosystems, and convincing farmers of the financial viability of the promoted agroforestry systems.

The Bank’s ProManejo project assisted in the set-up of *forest concessioning rules for the national forests*. The idea was to institute sustainable logging on vast tracts of forest, providing a profitable and socially acceptable alternative both to forest conversion and to strict protection. However, the area successfully bid out for concession has been below expectations. Hypothesized reasons include red tape, inherent lack of profitability given management rules, and competition from illegal suppliers. An IFC Advisory Services project is currently helping the Brazilian forest service diagnose the issues and prescribe a solution.

IFC has been active in promoting *more responsible cattle and soy production*. This was done initially through engagement with producers. Engagement with Bertin, a cattle producer, was unsuccessful, but loans to Amaggi, a soy producer, helped promote improved practices. IFC has also been active in the soy and beef roundtables of producers. The soy roundtable is helping define criteria for certification, including identifying sensitive areas from which purchase would be prohibited. Certified soy is beginning to be produced in response to demand from foreign buyers, but does not command a price premium. Because domestic beef consumers express little demand for certification, IFC efforts are directed at support for Brazilian initiatives to promote good practices.

In terms of market impact, IFC efforts have been overshadowed by the soy moratorium and by a federal agreement compelling meatpackers to buy beef from legalized properties. Both of these factors have had powerful effects on producers and indirectly stimulate demand for certification-like services.

Poverty Reduction in Forest Areas: The final piece of conservation-development balance – poverty reduction in remote forest areas – faces huge challenges, including low capacities, sparse population density, and remoteness from markets. These are difficult and unsolved problems, as discussed in the section, Community-Drive Development and Reaching the Rural Poor.

Mainstreaming climate change: Brazil has made progress in reducing its overall level of greenhouse gas emissions. This is due primarily to the sharp decrease in deforestation, particularly in the Amazon, to which Bank support has made attributable contributions as noted earlier. In other areas of climate change, low-key Bank support may have helped build consensus within a government and society that had diverse views on engagement with the carbon market and on climate policy. The Prototype Carbon Fund supported some of the first Brazilian carbon projects and helped catalyze follow-on projects in part by developing the validation methodologies and demonstrating the procedures necessary for project registration. The Low Carbon Study (De Gouvello and others 2010), a major piece of analytic work, did not directly contribute to Brazil’s national plan on climate change but has been credited with supporting dialogue, building networks among researchers, and sponsoring research that provided building blocks for ongoing work.

Emerging Challenges

Over the past decade, Brazil has mustered political will and regulatory creativity to accomplish a remarkable reduction in deforestation, with global and domestic benefits. The Bank significantly contributed through support for a major expansion of protected areas and indigenous territories and for capacity building of national and state environmental agencies. Global Environment Facility and PPG-7 grant funding has been important for protected areas. The Bank has been most successful where it brought the long-term engagement of experts who understand local conditions and bring global knowledge. Relatively small, sustained efforts such as ARPA have had far more impact than the \$1.3 billion SEM DPL, which – although it had deforestation reduction as an outcome – was not related to the key policy drivers of the deforestation slowdown. In addition, the SEM DPL loan size was significant in relation to the total IBRD exposure in Brazil, and a question emerges whether other avenues to mainstream effective implementation of environmental and social safeguards practice might have been more cost effective. The effectiveness of this loan is currently being evaluated by IEG, and the results will be made available in a forthcoming Project Performance Assessment Report.

Brazil’s challenges now have two critical aspects where the Bank Group may be able to offer assistance. First is the challenge of implementing the new Forest Code. This

gives states a two-year deadline to enroll all landholders in the CAR, the institutional platform for command and control, incentive systems (including payment for environmental services and eligibility for loans), and potentially for land titling. The states will need considerable help in setting up relevant systems. An even bigger challenge is to convince landholders to register, as this will oblige them to reconstitute missing forest, at large expense. In Mato Grosso alone, compliance costs are estimated at \$12 billion (Stickler and others 2013). The credibility and effectiveness of the Forest Code may depend on rapidly finding ways to reduce this burden, for instance, by supporting tradeability of legal reserve obligations.

Second, the relation between deforestation and poverty is changing. In the early 2000s, Amazonian deforestation was driven by capital-intensive largeholders, as evidenced by the size of forest clearings. But with the success of enforcement, credit restriction, and other policies targeted at largeholders, there has been rapid growth in the proportion of deforestation associated with small clearings (IPEA and others 2011). The share of deforestation taking place in land reform settlements has also grown (Brandão and others 2012). This suggests that residual Amazonian deforestation is now increasingly the domain of poor, often subsistence-oriented farmers and ranchers, with limited skills, finance, and market access. A fresh look at how to deal with this poverty/deforestation nexus at scale is needed. Meanwhile, attention is also turning toward deforestation in the *cerrado* – often driven by large-scale farm and pasture expansion – where the poverty-growth-environment dynamics are different.

MORE EQUITABLE ACCESS TO LOCAL SERVICES

More equitable access to local services was thought to be an important element for both a more sustainable and equitable Brazil. The emphasis was in two areas. First, the Bank sought to improve access to housing and key social services by the urban poor, focusing on housing finance, slum upgrading, and integrated urban development projects. Second, increasing access to land and credit to poor rural families, particularly in the northeast, and availability of key social services were pursued in integrated CDD programs.

Housing and Urban/Municipal Development

Brazil has become highly urbanized – 84 percent of its population and half of the poor live in urban areas. Facilitating access to housing and critical services to the urban poor in a context of fiscal sustainability and improved management capacity of cities is a major challenge. To assist government efforts in this area, the Bank

approved 13 housing and urban operations in FY04–11, amounting to \$1.3 billion in lending commitments.²⁷ The Programmatic Loan for Housing (federal; \$502 million) and the Rio de Janeiro Metropolitan Urban and Housing DPL (Rio de Janeiro state; \$485 million) dominated the overall urban lending program in terms of commitments.

There are also a number of water sector projects that include investments in housing, urban upgrading, and urban land regularization. The Housing Sector Loan (FY05), accompanied by a technical assistance loan and a number of related AAA, supported efforts to improve access of the poor to housing and was consistent with the government's *Minha Casa Minha Vida* (My House, My Life) program. It aimed to assist the development of a national housing policy, promoting incentives to expand housing finance, providing a scheme of transparent housing subsidies for the poor, and reducing urban land development costs through regularizing property registration.

These were ambitious long-term objectives, particularly given the high interest rates still prevailing in Brazil. The loan helped consolidate the institutional framework for housing policy in the Ministry of Cities. Housing finance expanded significantly, partly helped by the greater use of the trust deed supported by the loan, but evidence of increased access to housing by the poor and the lower costs of urban land provision was limited (IEG 2010).

Progress in implementing up-front subsidies for social housing has also been limited with some initiatives taken as part of the *Minha Casa Minha Vida* program. Overall progress fell short of rationalizing the housing subsidies embedded in the below-market interest rates in the dominant mortgage funding windows. The Bank continued to work on some of the critical sector issues through AAA, which focused on a housing policy and plan as well as new instruments to raise long-term funds from the capital markets. However, the momentum of policy dialogue waned after the Housing Sector Loan closed without the second-phase DPL envisaged in the original program design.

The Rio Metropolitan Urban and Housing Project (FY11) focused on planning and managing of territorial growth in the Rio metropolitan region. It also aimed to help promote the affordable housing and create integrated social development programs for the urban poor. It supported a wide range of issues, including creation of the *Bilhete Único* (consolidated fare) to improve convenience and affordability of urban transportation; strengthening capacity for protecting environmental assets; introducing a fee for water rights holders for watershed management; enhancing the framework for land titling programs; and piloting social programs, including a

citizen security initiative. Although technical assistance was available for some components, feedback from the interviews conducted by IEG suggests that a stronger technical assistance program would have been useful in view of the complexity in program scope. Support from a companion technical assistance loan to complement the reform effort as originally envisaged did not materialize. Project development objective achievement has been mixed according to the Implementation Completion and Results Report (ICR) in May 2013.

Beyond the housing and Rio metropolitan engagements, the Bank was involved in several statewide or metropolitan operations focused on slum upgrading and citywide infrastructure and institutional improvements. Statewide operations in Ceará and Bahia approved in the 1990s and closed during the period evaluated included significant slum upgrading and water components. The Recife Urban Upgrading Project and the Bahia Poor Urban Areas Integrated Development Project supported slum upgrading in poor urban areas as well as related efforts to strengthen municipal infrastructure institutions.

The design and implementation of these projects was complex because of the multiplicity of components, implementing agencies, and jurisdictions, as well as the need to operate in socially sensitive areas. Despite the challenges, some projects made significant contributions. The Ceará and Bahia operations benefitted a large number of low-income people in poor urban areas and municipalities. The Bahia integrated slum upgrading experience was instrumental in the preparation of national guidelines (Cities Alliance 2012).

The Bank was also engaged in projects supporting city-specific programs in a number of urban areas. The Betim Integrated Municipal Project (FY05) focused particularly on sewerage and wastewater treatment, with mixed results.²⁸ After this, urban projects were approved for a number of cities as part of a horizontal APL operation (FY08),²⁹ Recife (FY08), and Santos (FY10). There was also an urban project focusing on nine small municipalities in Ceará (FY09) and two separate operations addressing solid waste management.

The large number of broad, integrated urban projects has required considerable implementation support and coordination efforts by the Bank. Several Bank managers and staff interviewed for this evaluation observed that the series of municipal projects linked to the horizontal APL may not have been the most strategic approach, given that its demonstration effects are not clear.³⁰ This raises a question for future projects – whether the Bank’s comparative advantage could be deployed more effectively in projects that addressed slum upgrading and infrastructure and institutional issues in the larger urban and metropolitan areas.

Overall, the Bank has made important contributions to the urban development and housing agenda, but the effectiveness of its lending operations has been modest compared to its sometimes ambitious objectives. Various approaches have been applied with emphasis on the urban poor, and some of these have been relatively successful in upgrading their living conditions. However, the Bank has yet to consistently achieve intended results in a cost-effective manner.

Given the significance of the urban agenda in Brazil, it is vital that the Bank remain engaged. The experience during the evaluation period points to the need to revitalize its strategy that would further leverage its comparative advantage and promote catalytic effects through demonstration and replication among cities.

Reaching the Rural Poor

Brazil and the Bank have a longstanding partnership in fostering rural development and family farming, particularly in the northeast. This relationship has evolved and supported a variety of projects that made important contributions to improvements in access to basic services in rural communities (Bhatnagar and others 2003; Tandler 1993). Of particular significance is the support through a CDD approach that emerged from successful implementation of a small component in the Northeast Rural Development Program in 1985. That project funded small-scale, demand-driven investment in poor rural communities and relied on communities' ability to identify priorities and execute subprojects. Over time, the CDD approach was expanded to several north and northeastern states.

During the evaluation period, 14 CDD projects were approved, totaling \$630 million in commitments. The development objectives of the CDD projects approved during and prior to the evaluation period were very similar. They typically focused on the provision of basic infrastructure (water, sanitation, electricity) in line with local demand, reflecting the highly participatory CDD model.

Several studies have examined the outcomes of the CDD approach. Coirollo and Lammert (2009) and a companion volume (Binswanger and others 2009) find that CDD projects in the northeast have benefitted approximately 11 million people, primarily through the provision of electricity and domestic water supply. The studies find the interventions cost effective and well targeted to the very poor. They have also avoided local elite capture, and minorities and disadvantaged groups have been included.

An important share of the community associations have been headed by women (30 percent in a specific survey), and some of the investments in water and

electrification have lightened women's workloads and greatly improved their quality of life. IEG (2005) found that results on social capital formation were mixed based on surveys of around 1,000 households in Northeast Brazil, whereas other studies (Corriolo and Lammert 2009; Binswanger and others 2009) found CDD to be operating as fora to discuss alternative programs facilitating citizen participation, including issues of transparency and accountability of public resources.

Finally, results are inconclusive regarding the sustainability of impact for complex productive projects that depend on markets outside the community. The need to develop local economies and employment opportunities represents an ongoing and pressing challenge for the traditional CDD model whose success to date is largely located in meeting basic needs.

Many of the CDD projects were complemented by the Land-Based Poverty Alleviation Project (*Credito Fundiario*; \$202 million), approved in FY00 and closed in FY08. The project focused on access to land and productive inputs by the rural poor. It helped extend loans on favorable terms to community groups for land purchase, and it provided matching funds for complementary investment and technical assistance to increase productivity. The households benefitting from the projects were below the poverty line. The average income of families remaining in the project was reported to have significantly increased, although concern about the sustainability of development outcomes has been noted due to high turnover among the settlement group membership.³¹

The scope and quality of the challenges to reaching the rural poor in remote forest areas in the Amazon are different from those in northeast states. In these areas, extremely sparse population density makes service delivery expensive, and remoteness from markets makes many agricultural and forest products commercially unviable. The Bank, however, has been slow to learn how to address these challenges. The Amapá Sustainable Communities Project was designed to "learn lessons about Amazon-specific approaches to reduce urban and rural poverty through measures that are environmentally sustainable, economically efficient and socially equitable." It did not achieve these objectives, and its outcome was rated highly unsatisfactory. The Maranhão Integrated Program: Rural Poverty Reduction Project, with an unsatisfactory outcome, was faulted for neglecting in its design to take account of the lessons of earlier CDD projects and of the state's weak capacity. The local implementing agency was slow to process subprojects and ran into procurement issues.

Implementation problems have also plagued the ongoing Pará Rural Project, which has fallen short of its goals. The ongoing Alto Solimões Project, in some of the

remotest regions of the Amazon, sought to boost incomes through productive chains and to support urban and rural water supply and sanitation. These goals have proved more costly and difficult than anticipated. Both of the ongoing projects had unrealized plans for thorough, informative monitoring and evaluation systems. In both cases, baseline data are being collected only as the projects near their planned conclusion dates. In contrast, the Tocantins Sustainable Regional Development Project included a rigorous impact evaluation for rural roads construction.

However, the \$150 million ProAcre project (approved in 2008), instituted in a state noted for its progressive environmental stance, is making good progress on health and education service delivery. Progress on productive activities has run into implementation bottlenecks similar to the other projects'. Impressive efforts are being directed toward helping indigenous groups prepare land management plans, despite the difficulty in training and recruiting extension agents, in an efficacious and culturally respectful manner.

Challenges differ in the more densely populated forest/farm landscapes of the southeast, where the Bank has a history of working on sustainable land management and conservation. For example, the Santa Catarina Natural Resources Management and Rural Poverty Reduction Project (2002–09) concentrated on management of small watersheds. It used an unusually good monitoring system to show that participating farmers boosted incomes by 10 percent to 18 percent, compared to a control group, and that the project had an economic rate of return of 45 percent. Although improved land management practices were adopted, actual impacts on erosion and sedimentation were not measured – a lost opportunity to inform the subsequent PES projects.

Available analyses indicate that CDD programs in Brazil are a qualified success.³² They have been carefully targeted and reached the poor and other disadvantaged groups (women, minorities, and indigenous populations). Design improvements have been built in over time to maximize participation. The bulk of the investment has been in water supply, sanitation, and electricity, which has likely helped improve the quality of life and health conditions in rural communities.

However, effects have been ambiguous for more complex productive or entrepreneurial activities and for the capacity to ensure sustainability of project outcomes.³³ Enhancing support to develop the productive sector – the emerging challenge in rural development – would likely require a more customized approach that recognizes the heterogeneity of regions, states, municipalities, and localities. As for the Bank's Amazonian poverty projects, working on a small, "retail" scale, fared

poorly against the ambitious FY08–11 CPS goals for reducing poverty among the 23 million residents of Amazonia, although ProAcre shows promise.

RATING OF THE SUSTAINABILITY PILLAR

The Bank significantly contributed to a dramatic reduction in deforestation through support for a major expansion of protected areas and indigenous territories. It supported increased capacity at the Environment Ministry and IBAMA, which undertook more effective enforcement of forest laws. Harmonization of development and forest conservation remains a challenge, however. Attempts to promote poverty reduction in remote forest areas have had limited success; hydropower planning and assessment is not yet on a basinwide basis; and the SEM DPL's impact to further improve Brazil's environment management system is hard to detect despite the size of the loan.

In water resource management, the value of the Bank's convening power facilitating broad cross-sectoral dialogue on trade-offs was well recognized. Also, Bank-supported investments and technical assistance contribute to a greater focus on water quality, efficiency, and sustainability, though challenges in the water sector persist.

The Bank continued its support for the community-driven model that started in the 1980s, with some positive effects in reaching the poor and other disadvantaged groups, providing access to water supply, sanitation, and electricity. Less clear effects were achieved in supporting farmer productivity and access to markets. In urban development, the Bank made important contributions in slum upgrading, but the support for broader municipal development has produced mixed results. There were substantial activities in the housing sector during the early phase of the evaluation period, but the scope of dialogue has diminished. On the basis of this evidence, this pillar of Bank assistance is rated moderately satisfactory.