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INTRODUCTION

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Over a three-year period in the early 1990s, a small team of technocrats transformed the electricity sector in Argentina. Responding to a burgeoning foreign debt and a growing crisis of management in the sector, Argentina terminated any direct government role in electricity supply. Instead, they transformed electricity into a commodity to be bought and sold on an open market. The intended goal was to reap efficiency gains, and the means was to minimize government interference with the market's hidden hand. A decade later, South Africa also embarked on electricity sector reform. In the midst of a program of post-apartheid reconstruction and development, South Africans grappled with how to retain a place for the sector as an instrument of poverty alleviation consistent with environmental sustainability, even while re-making it to capture market efficiencies.

The Argentina and South Africa experiences with power sector reform bracket a decade of change in the sector. During this period, the conventional wisdom favoring public ownership and operation of the electricity sector was challenged by a new paradigm of market competition for electricity. Whether and how countries should follow this approach is still a subject of debate, in part because of the considerable problems encountered by the state of California following sector reforms there. Still, the approach has won many adherents. By 1998, a survey of 115 developing countries found that 73 had taken at least minimal steps down the road to market-oriented reforms in the electricity sector (Bacon, 1999). In part due to these changes, \$187 billion was invested in energy and

electricity projects in developing and transition economies between 1990 and 1999 (World Bank, 2000).

Electricity sector reforms and the financial flows they generate carry considerable implications—potentially both positive and negative—for long-term sustainable development goals. (*See Box 1.1.*) This report is motivated by the concern that decisions made now about the institutional structure and functioning of the electricity sector will shape patterns of development for decades to come. Our approach is informed by the view that electricity reforms—market-led or not—can best support socially and environmentally progressive outcomes when they are explicitly designed to do so. Consequently, the central question for this study is:

How can the process of reforming the electricity sector support rather than hinder promotion of sustainable development outcomes?

BOX 1.1

ELECTRICITY AND SUSTAINABLE DEVELOPMENT CHALLENGES

- Fifty-six percent of the world's rural population does not have access to electricity.*
- Electricity generation accounts for 38 percent of worldwide CO₂ emissions.**

* World Energy Assessment, 2000, p. 374.

** Computed by WRI from IEA data.

In posing this question, we examined the process by which electricity sector reforms are initiated, designed, and implemented in six country studies—Argentina, Bulgaria, Ghana, India, Indonesia, and South Africa. To understand whether reforms are likely to contribute to sustainable development by explicit inclusion of a public benefits agenda in national reform processes, we examined the national politics that shape reform in each country. Since national reforms are influenced by larger global trends, we also explored how national circumstances are shaped by international intervention, particularly by international aid agencies.

Reforms in the electricity sector need not follow a single prescription.

As the examples of Argentina and South Africa illustrate, not all countries have followed the same path toward power sector reform. In Argentina, reforms were dictated by a rigid application of market principles. In South Africa, reform efforts were embedded within a broader debate over economic and social empowerment. These different approaches suggest that reforms in the electricity sector need not follow a single prescription. By understanding the forces that shape reform, this study can suggest ways toward a more progressive politics of electricity reform.

THE LINK BETWEEN ELECTRICITY AND SUSTAINABLE DEVELOPMENT

The electricity sector has long been an integral part of the engine of economic growth. It is also a central component of sustainable development.¹ High-quality energy, which includes access to electricity services, can be a powerful force for development. Access to electricity supports improvements in health, education, and opportunities for entrepreneurship. Yet it is estimated that 1.7 billion people lack access to electricity (World Energy Assessment, 2000). The effect of sectoral reforms on incentives to

BOX 1.2

HOW DOES ELECTRICITY REFORM AFFECT SOCIAL BENEFITS?

Access: In a restructured electricity market, profit alone is often an insufficient driver for expanding access to electricity to relatively unprofitable rural customers and the urban poor. Incentive schemes, subsidies, or regulatory mandates may be required.

Price: Electricity reforms are typically associated with pressures to limit subsidies and enhance collection of tariffs. While these changes make for a better functioning sector, the resultant price increases can also cause social hardships and spur political opposition to reforms. A mitigation strategy can address these costs.

Quality: Competition in restructured markets may increase the reliability, choice, and responsiveness of electricity service providers, but are not guaranteed to do so in the absence of appropriate regulation and oversight.

Labor: Public sector electric utilities face job cuts as a result of reforms. This retrenchment will bring substantial social costs. Opposition from labor interests can be a political deterrent to reforms and will have to be addressed and mitigated.

provide broad access to electricity services—and on the price at which these services are available—can be a significant determinant of human development. (See Box 1.2.)

The electricity sector is a significant consumer of fossil fuels. In addition to the environmental impacts of fossil fuel extraction, the sector is responsible for a substantial share of local and global pollutants. Decisions made now—as the sector is reformed and electricity markets restructured—will create both incentives and disincentives for large or small-scale

generation, fossil fuels or renewable energy technologies, efficient or inefficient supply and use of energy, and centralized or decentralized generation sources. (See Box 1.3.) To be sustainable, sector reforms must incorporate attention to social and environmental benefits, referred to in this study as “public benefits.”

Incorporating public benefits need not follow past approaches, which as the case studies show have sometimes been misguided. For example, electricity subsidies in India and Bulgaria both encouraged wasteful consumption and did not benefit poor populations. Moreover, the ensuing financial shortfalls undermined technical performance and worsened environmental outcomes.

Decisions made now about the electricity sector will shape patterns of development for decades.

The challenge for the future is twofold. First, as discussed in Chapter 2, it is to develop electricity sector reform policies and approaches that promote sustainable development while supporting a well-functioning electricity sector. Second, as discussed in the rest of this study, it is to ensure that sustainable development remains part of the political calculus that drives reforms.

THE GLOBAL CONTEXT

Reforms in the electricity sectors of individual countries have occurred in the context of global economic integration. The broad contours of this process include political, economic, financial, technological, and institutional transformations. These trends are briefly spelled out here and discussed in more detail in Chapter 2.

The globalization of the 1980s and '90s presumed a growing faith in the market as an instrument of economic coordination. This shift was accompanied by an expanding role for private corporations and a

BOX 1.3

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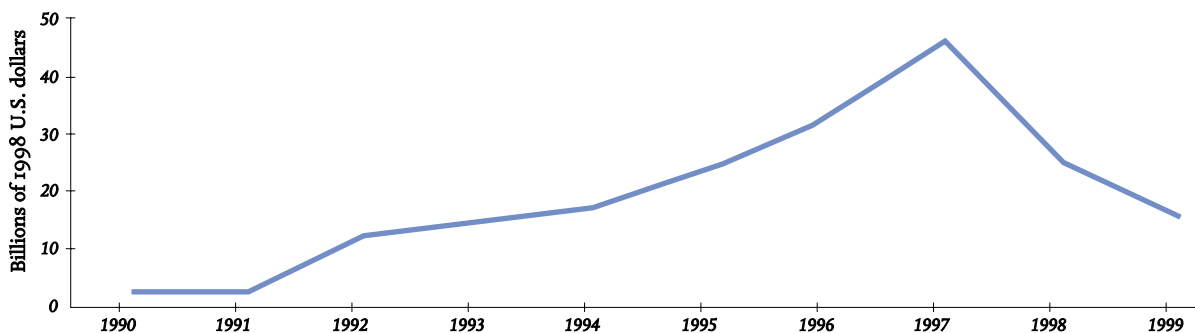
Technology/Fuel choice: The choice of technology and fuel used to generate electricity has environmental impact. The market structure put in place by reforms can affect technology choice by shifting the relative attractiveness of capital-cost intensive technologies versus those based on high running costs. In addition, the existence and basis of a planning framework for electricity will determine whether environmental considerations factor into a long-term vision for the sector.

Regulatory decisions: Economic regulatory decisions often also have environmental outcomes. Regulatory decisions influence how level the playing field is for different technologies. They can also implement a strategic vision for the sector. Regulators must have the mandate and training to play these roles.

Incentives for efficiency: Electricity reforms that enforce financial discipline should contribute to greater efficiency of supply, with environmental gains. However, reforms can introduce additional transactions costs and obscure price and other signals to customers, raising obstacles to end-use efficiency improvements. Conversely, competition could spur retailers to distinguish themselves by marketing end-use efficiency services.

corresponding questioning and renegotiation of the appropriate role of the state in economic activity. In developing countries, a turn toward markets and away from state-led activity was promoted by two decades of World Bank structural adjustment policies, which were intended to increase resource-use efficiency by enlarging the scope for private sector activity (Jayarajah and Branson, 1995). In

FIGURE 1.1 TRENDS IN INVESTMENT IN ENERGY PROJECTS WITH PRIVATE PARTICIPATION IN DEVELOPING COUNTRIES, 1990–99



Source: World Bank, PPI Database, reproduced with permission from Energy Sector Management Assistance Program (2000).

particular, the structural adjustment agenda included privatization of state-owned corporations, such as electric utilities, as part of a regime of fiscal responsibility.

This transition facilitated a greater role for international private capital in the economies of developing countries. As Figure 1.1 shows for the energy sector as a whole, during the 1990s private capital flows increased considerably—albeit with a downturn following the Asian financial crisis of 1997. The entry of private finance influenced the institutional form of the sector. In order to contain risks, private financiers sought to invest in discrete projects rather than around an entire power system, where risks were harder to measure and manage.

The trend toward financing smaller, discrete units rather than an integrated whole was further supported by technological changes in the electricity sector. The development of small and cheap gas turbines reversed the decades-long trend toward growing economies of scale in electricity generation (Patterson, 1999). Moreover, the development of information technology and computing power vastly increased the capacity to monitor, control, and measure electricity usage and flows (Graham and Marvin, 1995). Together, these technological shifts

undermined the natural monopoly characteristic of the power sector and challenged the centralized nature of public utilities.

The precedent for institutional reform of the electricity sector was set by developments in Chile and the United Kingdom (Bacon, 1995; Rosenzweig and Voll, 1997). In both countries in the 1980s, public monopolies responsible for generating and providing electricity were restructured. The component parts were sold to the private sector and placed under a regulatory framework intended to encourage competition. In both cases, the transformation to private ownership and competition was driven more by ideological considerations than by evidence of the benefits of restructuring. While there has been considerable debate about the effectiveness and replicability of this approach, the demonstration effect of the Chile and U.K. experience was undoubtedly considerable. Following the experience in these two countries, restructuring to encourage competition in the electricity sector became a viable policy option. In particular, urged by the World Bank and other donor agencies, developing countries and transition economies have considered both privatization and restructuring as policy options to address problems of cash shortages, capacity shortfalls, and poor management.

THE ELECTRICITY SECTOR AND GLOBALIZATION DEBATES

Viewed in this context, reforming the electricity sector is about far more than adopting alternative technical and institutional models. Current patterns of electricity reform are being integrated into larger processes of globalization—notably the predisposition toward markets, the growing role of private capital, and efforts to weave the sector into the fabric of international economic integration. Electricity sector reform debates are part of a broader dialogue about how to organize economic life and ensure the public interest in a globalizing environment. As with other dimensions of globalization, debates over the electricity sector are marked by a polarization of views.

Believers in economic integration—typically economists, regulatory consultants, and some staff of donor agencies—argue for reforms aimed at unfettered markets for electricity. In the transformation of electricity provision into a business venture, they see the potential for greater efficiency and dynamism, with a corresponding public benefit in the form of lower prices and better service. From this perspective, the electricity sector has suffered from too much interference by the state and from too many misguided, if well-meaning, efforts at steering the sector toward social and environmental gains.

The opposite view—often held by representatives of nongovernmental organizations (NGO's), some developing country utility managers, and some staff in international organizations—is that a transition to privatization and competition will lead to an unchecked search for profit and a betrayal of the public interest. According to this camp, the obituary for the public utility model has been written in unseemly haste. From this perspective, electricity is a public service that should be guided by broader public objectives such as social and environmental goals.

Each of these admittedly caricatured views is problematic, as we discuss here in brief, and explain in greater detail in Chapter 2. The belief that unfettered markets will automatically generate public

benefits is dubious on both environmental and social grounds. Left to their own devices, markets are ill-equipped to address equity considerations in access to electricity or prices. They fail to internalize environmental impacts and, therefore are likely to provide less than optimal environmental and social benefits. On the other hand, a stubborn adherence to the past ignores the currently dismal technical and financial state of the sector in many countries, and is likely to be swamped by the new realities of financial globalization and rapid technological change. A future electricity sector—whether public or private—that resists adaptation and flexibility is just as unlikely to serve the public interest as one that looks to the market alone to provide the right signals.

Markets are ill-equipped to address equity considerations in access to electricity or prices.

In this report, we suggest that markets are socially and politically constructed. If they are to contribute to the public interest, they must be explicitly designed to do so (Evans, 2001). Since markets do not exist in a political vacuum, whether or not reforms serve the public interest depends first on how effectively these concerns emerge from political processes. This is not to trivialize the intellectual and ideological debates about questions of public versus private ownership, and bureaucratic versus market coordination, but to emphasize that reform debates too often focus on false dichotomies. A more useful approach is to understand how the political decisionmaking process shapes electricity sector reform.

THE POLITICAL ECONOMY OF REFORM

Under what circumstances does reform in the electricity sector incorporate attention to public benefits and promote sustainable development? Reforms are nominally under the control of govern-

ments, whether at the federal or at subsidiary levels. But they rarely are initiated, designed, and implemented by the state alone in a simple sequence. Reform processes are shaped by the interaction of formal rules, norms of behavior, and sociopolitical environments. Consequently, reforms both require and lead to a rearrangement of the relationships among states, the private sector, and civil society (Brinkerhoff and Crosby, 2002).

Governments are seldom homogeneous and coherent entities. Different ministries typically have divergent interests, which figure heavily in shaping reform agendas. In addition, politicians may not share the same interests as bureaucrats, and different branches of government—the executive and the legislative, in particular—often disagree. In the electricity sector, public utility officials have much at stake in electricity reforms, and may themselves be significant players in reform dialogues.

In addition, reforming governments face tremendous pressures from below. These pressures may be applied by well-organized beneficiary coalitions with claims on public resources (Waterbury, 1992). The country studies that follow illustrate, for example, the political clout of large farmers in India who have grown used to subsidized electricity for agriculture, and ruling elites in Indonesia who used the sector as a vehicle for graft. Actors such as these are well mobilized and in a position to voice opposition to reforms. By contrast, potential beneficiaries of proactive environmental and social policies are often diffuse and poorly organized—as for example rural populations that are unconnected to the grid. Promotion of public benefits may thus require searching for new coalitions and new players—consumer organizations, environmentalists, pro-poor advocates, municipalities, and some private corporations.

The private sector stands to gain enormously from a reform agenda that promotes greater private participation in the power sector. Some may try to influence the process of reform and seek concessions from governments. In this context, even if liberalization in the electricity sector leads to state exit from

the direct business of supplying electricity, ensuring governmental functions nonetheless requires a strong and capable state role (Brinkerhoff and Crosby, 2002). Other private sector firms may emerge in reaction to this opportunity by, for example, developing opportunities for investment in energy efficiency or providing access to electricity through distributed generation technologies. This group may be potentially important members of a coalition to promote attention to public benefits.

Reforms in the electricity sector have occurred in the context of global economic integration.

Electricity reforms present civil society groups with an opportunity, but also a challenge. Over the last two decades, civil society groups have focused on centralized, often state-owned electricity bureaucracies. They have targeted socially and environmentally destructive projects, often in alliance with international NGOs that amplify their reach to donor agencies and international financiers (Keck and Sikkink, 1998; Hildyard and Mansley, 2001). The larger number of actors and increasing complexity of decisionmaking in a restructured electricity sector challenges NGOs to re-think their strategy. Some view restructuring as an opportunity to replace staid bureaucracies with a dynamic, decentralized sector that will serve sustainable development goals (Hirsh and Serchuk, 1999). Others are more circumspect about the nature of this opportunity, and see little reason for hope that a restructured sector will promote a more sustainable energy future (PRAYAS, 1999; Mun, 2000; Tellam, 2000; Dixit, Wagle, and Sant, 2001). A strong belief among NGOs is that open, transparent, and effective governance will be a key ingredient in realizing public benefits in a restructured sector. Consequently, demands for a more participatory and open decisionmaking process are likely to be an important part of the national politics of electricity reforms.

While pressures from below are imposing, pressures from above can be just as sizeable. Interna-

tional lenders, called in to bail out crisis-ridden economies, have significant leverage over the trajectory of reforms in borrower countries. Correspondingly, the space, time, and flexibility to shape reforms available to domestic actors, both governmental and nongovernmental, may shrink. At the same time, there is an active debate about how much leverage international donors really have over domestic processes (Kahler, 1992), in what context aid conditionality is appropriately deployed (World Bank, 1998), and whether and how donor leverage can be made to address social and environmental aims beyond traditional growth objectives (Nelson and Eglinton, 1993). This study assesses the role of international donors in the reform process and asks whether and how they can contribute to the promotion of public benefits in the course of electricity sector reforms.

Whether and how different actors and interests participate in shaping the electricity sector depends on the governance structure under which reforms are carried out. There is a broad divide between two opposing viewpoints on the appropriate governance of reform processes (Williamson, 1994; Rodrik, 1996). One view holds that economic reforms must be carried out by a strong executive, unhampered by the need to consult or seek consensus, in order to stop vested interests from obstructing a reform agenda. From this perspective, while reforms may be rational for society as a whole, myopia on the part of the general public and a collective irrationality nonetheless can obstruct reform. The opposing position argues the central importance of forging a social consensus around reform. Consultation not only provides the promise of improving policy, but, by addressing the concerns of the general population, it raises the probability of continued support for a reform program, and supports democratic institutions. By contrast, an autocratic approach, even if tied to good economics, can make for undesirable politics by undermining democratic institutions.

The distinction between these two positions is blurred somewhat by noting that while the initiation of reforms may require a firm and autonomous executive with a relatively free hand, consolidation of

reforms may rest in building consensus (Rodrik, 1996). If effective implementation requires not only good design, but agreement and cooperation from relevant agencies and non-state stakeholders, then the case for consensus building is further strengthened (Brinkerhoff and Crosby, 2002).

By permitting trade-offs to be explicit, and providing avenues for a broader range of interests and perspectives to be brought to the table, it appears likely that the social consensus approach is likely to be more favorable to promotion of sustainable development. The counter-argument, however, is that if reforms are brought to a halt in a futile search for consensus, then even the benefits of limited reforms will be lost. The relative benefits of the two approaches is an issue considered in the country chapters.

FRAMEWORK OF THE STUDY AND RESEARCH METHODS

Chapter 2 sets the stage for the country studies. It provides the global context for electricity sector reform by describing both the forces leading to an institutional shift in the sector and the historical process by which this shift occurred. Next, it describes and briefly summarizes debates over the prevalent model that emerge from the Chile and U.K. experience. It then examines how this model spread around the world, with an emphasis on the growing role of private sector financing. Finally, it makes the argument that a *laissez faire* approach to market-led reform in the electricity sector is unlikely to fully serve the public interest.

To further our understanding of electricity sector reforms as shaped by political processes, this study is organized around six country case studies (Chapters 3-9) from the developing world and economies in transition. The case studies—Argentina, India, Indonesia, Bulgaria, Ghana, and South Africa—were selected to provide a mix across early and late reformers, large and small countries, and also to provide a geographic spread. They are presented in the chapters that follow organized from earliest

reformer to most recent. In addition, the country studies are complemented by brief examinations of reform processes in other countries, the results of which are described throughout the chapters as text boxes. The central concern of this study is how electricity sector reform processes can promote sustainable development through attention to public benefits. Each country study asks:

- What were the drivers of reform in the electricity sector?
- What political interests were at stake in the sector and in its reform, and how did they shape the reform process?
- What role did the World Bank and other international donor agencies play in electricity sector reforms?
- How and by whom were public benefits concerns addressed in the process of designing reforms, and with what outcomes?

The country studies were conducted as a collaborative exercise between the World Resources Institute and a research partner from each country. Our primary methods were semi-structured interviews with key informants from government agencies, civil society, the private sector, and international agency staff—all conducted on a not-for-attribution basis to encourage candor. Accordingly, interviews cited in the studies are referenced only by the affiliation of the interviewee. This information was supplemented by official government and donor agency reports, other secondary materials, and media reports.

In the conclusion, we examine the results of the country studies in comparative context, and draw some implications about steps toward a more progressive politics of electricity sector reform.

NOTES

- i. We follow the Brundtland Commission (World Commission on Environment and Development, 1997) in defining sustainable development as “development that meets the needs of the present, without compromising the ability of future generations to meet their needs.” We also follow Lele (1991) in further specifying that sustainable development at a minimum includes a desire to limit environmental degradation, while allowing for basic needs and economic growth, and seeking to accomplish these outcomes in a participatory fashion. Finally, we acknowledge the significant conceptual weaknesses of the term, but note its political utility as an umbrella concept.

REFERENCES

- Bacon, R.W. 1995. "Privatization and Reform in the Global Electricity Supply Industry." *Annual Review of Energy and Environment* 20:119-143.
- Bacon, Robert. 1999. "A Scorecard for Energy Reform in Developing Countries." Public Policy for the Private Sector Note No. 175. Washington, D.C.: World Bank.
- Brinkerhoff, Derick W., and Benjamin L. Crosby. 2002. *Managing Policy Reform: Concepts and Tools for Decision-Makers in Developing and Transition Economies*. Bloomfield, CT: Kumarian Press.
- Dixit, Shantanu, Subodh Wagle, and Girish Sant. 2001. "The Real Challenge in Power Sector Restructuring: Instilling Public Control through Transparency, Accountability, and Public Participation." *Energy for Sustainable Development* V (3):95-101.
- Energy Sector Management Assistance Program. 2000. *Energy Services for the World's Poor*. Washington D.C.: World Bank.
- Evans, Peter. 2001. "Looking for Agents of Urban Livability in a Globalized Political Economy." In *Livable Cities: Urban Struggles for Livelihood and Sustainability*, edited by P. Evans. Berkeley, CA: UC Press.
- Graham, Stephen, and Simon Marvin. 1995. "More than Ducts and Wires: Post-Fordism, Cities and Utility Networks." In *Managing Cities: The New Urban Context*, edited by P. Heal, S. Cameron, S. Davoudi, S. Graham and A. Madani-Pour. New York: John Wiley & Sons.
- Hildyard, Nicholas, and Mark Mansley. 2001. *The Campaigners' Guide to Financial Markets*. Dorset, UK: The Corner House.
- Hirsh, Richard F., and Adam H. Serchuk. 1999. "Power Switch: Will the Restructured Electric Utility System Help the Environment?" *Environment* 41 (September):4-29.
- Jayarajah, Carl, and William Branson. 1995. *Structural and Sectoral Adjustment: World Bank Experience, 1980-92*. Washington D.C.: World Bank.
- Kahler, Miles. 1992. "External Influence, Conditionality, and the Politics of Adjustment." In *The Politics of Economic Adjustment*, edited by R. R. Kaufman. Princeton: Princeton University Press.
- Keck, Margaret and Kathryn Sikkink. 1998. *Activists Beyond Borders*. Ithaca, NY: Cornell University Press.
- Lele, Sharachandra M. 1991. "Sustainable Development: A Critical Review." *World Development* 19 (6):607-621.
- Mun, Yu-Mi. 2000. "Electric Utility Restructuring and its Implications for Ecological Sustainability and Democratic Governance: A Preliminary Review." Unpublished paper. Center for Energy and Environmental Policy, University of Delaware.
- Nelson, Joan M., and Stephanie J. Eglinton. 1993. *Global Goals, Contentious Means: Issues of Multiple Aid Conditionality*. Washington, D.C.: Overseas Development Council.
- Patterson, Walt. 1999. *Transforming Electricity*. London: Earthscan.
- PRAYAS. 1999. "Regaining Rationality through Democratization: A Critical Review of MDBs Power Sector Activities in India." Unpublished paper. Pune, India.
- Rodrik, Dani. 1996. "Understanding Economic Policy Reform." *Journal of Economic Literature* XXXIV (March):9-41.
- Rosenzweig, Michael B., and Sarah P. Voll. 1997. "Sequencing Power Sector Privatization." Unpublished paper. Washington D.C.: National Economic Research Associates.
- Tellam, Ian, ed. 2000. *Fuel for Change: The World Bank Energy Policy, Rhetoric vs. Reality*. London: Zed Books.
- Waterbury, John. 1992. "The Heart of the Matter? Public Enterprises and the Adjustment Process." In *The Politics of Economic Adjustment*, edited by S. Haggard and R. R. Kaufman. Princeton, NJ: Princeton University Press.
- Williamson, John, ed. 1994. *The Political Economy of Policy Reform*. Washington, D.C.: Institute for International Economics.
- World Bank. 1998. *Assessing Aid: What Works, What Doesn't, and Why*. Washington, D.C.: World Bank.
- World Commission on Environment and Development. 1997. *Our Common Future*. Oxford: Oxford University Press.
- World Energy Assessment. 2000. *World Energy Assessment: Energy and the Challenge of Sustainability*. Edited by United Nations Development Programme, United Nations Department of Economic and Social Affairs, and World Energy Council. New York: United Nations Development Programme.

