BEYOND GOOD DEEDS

Case Studies and a New Policy Agenda for Corporate Accountability

NATURAL HERITAGE INSTITUTE
NAUTILUS INSTITUTE FOR SECURITY AND SUSTAINABLE DEVELOPMENT
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for Corporate Accountability

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The California *Global* Corporate Accountability Project

Natural Heritage Institute (NHI) is a non-profit public interest law firm dedicated to improving the laws and institutions that manage natural resources—and the lives of those who depend upon them—around the world. NHI staff have over twelve years of experience in the international human rights and environmental policy arena, serving as consultants and advisers to international agencies, including the UN Environment Programme, UN Development Programme, International Organization for Migration, International Convention to Combat Desertification, and UN Commission on Human Rights. See www.n-h-i.org.

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ACRONYMS

AEA: American Electronics Association
ARCO: Atlantic Richfield Company
BAASD: Bay Area Alliance for Sustainable Development
CalPERS: California Public Employees Retirement System
CAP: California *Global* Corporate Accountability Project
CBI: Conservation Biology Institute
CEO: Chief Executive Officer
CERCLA: Comprehensive Environmental Response, Compensation, and
            Liability Act
CLO: Community Liaison Officers
CPF: Central Production Facility
CSR: corporate social responsibility
CSWG: Corporate Sunshine Working Group
CURE: California Unions for Reliable Energy
DOE: United States Department of Energy
EHS: Environmental Health and Safety
EIA: Environmental Impact Assessment
EMAS: European Management and Audit Scheme
EMS: environmental management system
EMP: Environmental Management Plan
EPA: United States Environmental Protection Agency
FDI: foreign direct investment
FTSE: Financial Times Stock Exchange
GDP: Gross Domestic Product
GRI: Global Reporting Initiative
HSIP: Hsinchu Science-Based Industrial Park
ILO: International Labor Organization
ISO: International Standards Organization
IT: Information Technology
MEA: Multilateral Environment Agreement
MNC: multinational corporation
NAFTA: North American Free Trade Agreement
NEPSI: National Electronics Product Stewardship Initiative
NGO: non-governmental organization
NOx: nitrogen oxides
NRIE: Northern Region Industrial Estate
ODS: ozone-depleting substances
OECD: Organization for Economic Cooperation and Development
OPEC: Organization of Petroleum Exporting Countries
OSHA: Occupational Safety and Health Administration

PACE: Paper, Allied-Industrial, Chemical, and Energy Workers
            International Union
PCBs: polychlorinated biphenyls
PFC: perfluorocompound
SEC: Securities and Exchange Commission
SIA: Semiconductor Industry Association
SO_2: sulfur dioxide
SPDP: Shell Prospecting and Development Peru
SVEP: Silicon Valley Environmental Partnership
SRI: Socially Responsible Investment
TRI: Toxic Release Inventory
UN: United Nations
UNEP: United Nations Environment Programme
USEIA: United States Energy Information Administration
VOC: Volatile Organic Compounds
WEEE: Waste from Electrical and Electronic Equipment

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PREFACE

This report examines the environmental and human rights challenges that confront multinational corporations in their global operations, and presents recommendations for a new policy agenda that can improve corporate accountability.

Produced for the California *Global* Corporate Accountability Project, the report provides case studies from around the world in two sectors—oil and high tech—which are of special importance both to the global and to the California economy.

BEYOND GOOD DEEDS was produced by the California *Global* Corporate Accountability Project to foster a more robust public debate on the legal, political, and institutional reforms needed to improve the responsibility and accountability of U.S. industry.

The report culminates a three-year investigation directed by the project's three partners: Michelle Leighton of the Natural Heritage Institute, Lyuba Zarsky of the Nautilus Institute for Security and Sustainable Development, and Naomi Roht-Arriaza of Human Rights Advocates and Professor at Hastings College of the Law.

Michelle Leighton served as project manager for the case studies in the oil sector and is the lead author of Chapter Two. Case studies were undertaken by Emeka Duruigbo (Nigeria, ChevronTexaco), Pamela Sumner-Coffey (Azerbaijan, Kazakhstan, ChevronTexaco, Unocal), and Judith Kimerling (Ecuador, Unocal). Emeka Duruigbo and Amy Israel, of the Natural Heritage Institute, also undertook a field investigation in southern California.

Lyuba Zarsky and Naomi Roht-Arriaza served as project managers for the case studies in the high tech sector and, along with Leif Brottem, are the lead authors of Chapter Three. Case studies were undertaken by Arne Wangel and Shruti Rana (Malaysia), Tira Foran (Thailand), Shenglin Chang and the Taiwan Environment Action Network (Taiwan), and Radha Gopalan (India). Naomi Roht-Arriaza contributed a field report on Costa Rica. Jan Mazurek contributed an in-depth analysis of the regulatory structure of the high tech industry in the U.S.

EXECUTIVE SUMMARY

The increasing pace of globalization has catapulted U.S. multinational corporations into ethical quagmires around the globe. From Burma, where Unocal works with officials who use slave labor to build a natural gas pipeline, to Thailand, where Seagate workers died from lead poisoning, U.S. companies have found themselves in the white glare of newspaper headlines—and of advocacy campaigns by shareholders, nongovernmental organizations, and community groups.

At the same time, there is a growing number of stories about the voluntary initiatives that U.S. multinationals are undertaking to improve their ethical performance. Many companies have developed environment or human rights management systems and codes of conduct, which they publicize on their websites.

But are voluntary initiatives enough? Faced with the lack of global standards and inadequate national regulation, should multinationals be entrusted with self-regulation and enforcement? What role should government play in defining norms and providing incentives for better corporate performance, both at home and abroad? What policy innovations would promote corporate accountability?

This report makes the case that now is the time for a new American public policy agenda to strengthen corporate accountability. In light of recent high profile accounting scandals, from Enron to WorldCom, many voices are calling for corporate reform. Respect for human rights and protection of the environment, both at home and abroad, should be part and parcel of these reforms.

Drawing from case studies spanning nine countries, the report examines human rights and environmental challenges faced by U.S. multinational corporations in two industry sectors—oil and information technology.

The report develops a policy agenda based primarily on strengthening the government's role in mandating and managing information about corporate performance in relation to environment, labor rights, and human rights.

THE CASE FOR PUBLIC POLICY

The need for innovations in public policy to strengthen corporate accountability stems from three sources: 1) regulatory gaps; 2) the limits of voluntary initiatives; and 3) the information gap—that is, the lack of credible company-provided information about performance.

Regulation Gap

The global environmental and human rights dilemmas faced by multinational corporations (MNCs) stem fundamentally from regulatory failures. While markets and investment opportunities span borders, there are no binding global industry standards. The environmental and social regulation of industry remains national.

Many host countries in the developing world, however, lack technical capacities, physical and institutional infrastructure and, often, political will to provide environmental and social oversight of businesses. Moreover, fundamental civil and political rights are not protected in many developing countries, muting the role of legal action and public protest in exposing and redressing regulatory gaps.

One factor that keeps national environmental, labor, and human rights standards from rising is competition for MNC investment. In the absence of global corporate standards, competition for MNC investment creates a kind of low-pressure zone in the world economy, keeping national standards "stuck in the mud."

Companies Adopt Different Strategies

Lacking global and, often, national regulatory oversight, MNCs become rule-makers. Some adopt a *duck-and-cover* approach and simply follow local practice, no matter how inadequate. Others adopt a *no-regrets* approach and set universal, company-wide standards, usually pegged to the highest or an average of home country standards.

A third approach is the adoption of *corporate social responsibility* (CSR), a commitment to "best practice." CSR leaders tend to have one or more fairly sophisticated systems in place for auditing and managing environmental impacts, worker health and safety, working conditions, and/or stakeholder engagement. Some companies, investors, and others argue that the embrace of CSR is not only (or primarily) about "doing the right thing," but that it is good for business.

The Limits of Voluntary Initiatives

The business case for taking a voluntary approach to CSR suggests that good environmental and social performance generates tangible financial benefits, which can be captured by companies and investors. Benefits arise either because consumers, investors, and workers prefer and reward a responsible company, or because acting responsibly reduces production costs and improves products.

But statistical studies seeking to prove the business case for CSR have yielded mixed results. Moreover, the studies have focused on company performance in the U.S. Very little quantitative data is available about overseas performance—and there is plenty of evidence that unethical, environmentally unsound, and even illegal business practice can also boost short-term profits.

The most telling evidence about the business case, however, is the low rate of uptake. Only a few, highly visible, blue-chip companies sensitive to consumer pressure, and "green" companies that have built their reputations on eco- or ethical behavior, have embraced CSR. Even the leaders have taken on only a small part of what civil society groups argue is needed.

Information Gap

One reason that the business case may not be working to motivate companies is that markets cannot discriminate very well between good and bad performers. Without good-quality information, consumers and socially responsible investors cannot consistently and accurately voice preferences through markets. Even within companies, managers sometimes lack the information they need to improve efficiency and safety of production processes and product design.

The environmental and social information gap stems from:

- *Minimal statutory requirements* for company disclosure;
- *Company fear and refusal to voluntarily disclose* internal information, including fear of liability or other reprisal, or of being disadvantaged relative to a competitor, and divulgence of trade secrets;
- *"Greenwashing,"* by providing information as a public relations gimmick;

- *Lack of a reporting template*, which hampers comparability and generates confusion among the public and within companies; and

- *Lack of clarity in private sector responsibility for human rights norms,* causing companies to set their own benchmarks without reference to socially defined needs and expectations.

THE CASE STUDIES: OIL AND HIGH TECH INDUSTRIES

Oil companies, perhaps more than any other multinationals, have been the target of scrutiny and criticism for their overseas environmental and human rights performance. Operating in remote regions and through joint ventures with governments, oil companies are often at the margins of regulatory, legal, and community oversight. In developing countries, which make up an increasing share of both global demand for and supply of oil, investment by oil companies is widely seen as a mixed blessing.

Investment by foreign high tech companies, by contrast, is highly coveted in developing countries. Generating links to the global economy, high tech firms are seen as modern, clean, and green. Operating in the midst of major urban manufacturing centers, they tend to provide well-paid employment, relative to the options in developing countries.

Focused on two sectors with different accountability challenges, the field investigations aimed to shed light on what kind of public policy would be most relevant and effective to U.S. multinationals overall.

The oil sector case studies span Nigeria, Ecuador, Azerbaijan, and Kazakhstan, as well as operations in California. They focus primarily on the record of ChevronTexaco, Occidental Petroleum, and Unocal. These studies identified the key physical environmental and social problems as widespread pollution, a pattern of social neglect, including insensitivity to human rights abuses, a gap between company promises and performance, and a low level of company transparency.

The high tech sector case studies span Taiwan, Thailand, Malaysia, and India, with a field report on Costa Rica and an overview of California and the regulatory environment in the U.S. These studies identified the key environmental and social problems as the use of highly toxic materials in production and in consumer products; a high intensity of energy and water use; inadequate labor standards, including protection of worker health and safety; and poor oversight of global supply chains. In general,

despite significant efforts to reduce their environmental impacts, high tech companies have not come to terms fully with the sustainability and human rights challenges that confront them, both at home and abroad.

Lessons Learned

The oil and high tech sectors face distinctly different environmental and human rights problems. A common theme, however, is the failure of leadership and governance, by both the companies themselves and government. As a whole, the case studies provide insights about the strengths and weaknesses of industry self-regulation as a route to corporate accountability.

Leaders and Laggards

Both oil and high tech sectors are characterized by "leader" and "laggard" companies in terms of environmental and social performance. Leaders set clear benchmarks, make public quantitative data about performance, and engage with communities and other stakeholders. Leaders tend to be large and well capitalized, with highly visible brand names and reputations to protect.

Overseas and domestic performance tend to be similar, given different local contexts. When a company leads, either on a particular issue like air and water emissions, or on its general management system for labor rights and protections, it does so both at home and overseas. The same is true for laggards.

Inadequate Oversight of Environmental and Human Rights

In both the oil and high tech sectors, regulatory oversight is inadequate in developed and developing countries alike, but for different reasons. In the oil sector, the environmental regulations in place are enforced sporadically and maintain a back seat to attracting and keeping high rates of oil production. In many countries, the official development agency that enters joint ventures with oil companies can issue or negate environmental provisions in operating permits, establishing from the outset a situation of conflict between earnings and environmental compliance.

On the other hand, in the high tech sector, developing countries lack the physical infrastructure to manage the industry's toxic and hazardous waste, and the regulatory capacity to protect worker health and safety. Moreover, the regulation of global supply chains bedevils oversight even in developed countries.

For both sectors, the cases highlighted that the limited legal protections for civil and political rights in developing countries undermine the watchdog capacity of workers and local communities and, for the oil industry, contribute to local conflict.

A multinational corporation following local law in a developing country where standards are lower than in developed countries for either reason will in fact operate under "double standards." But even companies that follow best practice throughout the company operate under conditions of inadequate oversight. The inability of regulators, even in the U.S., to keep up with the potential health hazards in the evolving chemical stew used by semiconductor manufacturers is a good example.

Unsustainable Development

Large-scale investment by multinational corporations creates planning and resource dilemmas for surrounding communities, generally stemming from the cumulative impacts of operations by several companies in a limited geographic space.

The degradation of land, water, and air, and the perceived inequity of large oil revenues amidst growing poverty in the Niger Delta, for example, is attributable more to oil development as a whole than to the behavior of individual companies. Likewise the pollution and congestion stemming from the development of high tech clusters like Hsinchu or Silicon Valley.

Without a better public planning and goal-setting process, individual companies—no matter how advanced their codes of conduct—will not be able to adequately address sustainability in economic development.

Lack of Effective Stakeholder Engagement

One of the most strident stakeholder critiques of company social performance is the failure to adequately engage with and respond to the needs and demands of local communities. Oil companies have been particularly vulnerable to such criticism, especially when lack of engagement is coupled with widespread environmental damage, like in the Amazon and Nigeria. Where companies made a serious effort to engage stakeholders, as in Shell Oil's Camisea project in Peru or Intel's intensive consultation process in Costa Rica, better projects and plans emerged and the local perception of the company improved.

Lack of Information

Companies in both industries suffer from a lack of adequate internal and external information and data to compare how actual environmental

practices and performance stack up against either the companies' own stated goals or industry benchmarks. None of the companies examined in this report make public a complete set of environmental and social performance information, including from suppliers. Many companies do not even gather such information for internal use.

Limits to Voluntary "Best Practices"

The case studies suggest that individual companies can do much on a voluntary basis to improve their own environmental and social commitment and performance. The span between the performance of leading companies, especially those committed to best practice, and lagging companies, is substantial.

However, without change in the policy frameworks that set rules and determine market incentives for all players, voluntary initiatives can go only so far. They cannot fully address the environmental, human rights, and labor standards dilemmas that multinationals face in a highly differentiated global economy, nor deliver broad social objectives such as sustainability at home or abroad.

TOWARD A NEW POLICY AGENDA

The case studies suggest that reforms to significantly improve oversight in both host *and* home countries are critical in changing the dynamic of poor corporate performance on human rights and the environment. Rather than rely only on command-and-control methods, a new policy agenda should include performance-based standards and should encourage the best of voluntary corporate initiatives. It should help to empower investors, consumers, company managers, affected communities, advocacy groups, and workers who are seeking to encourage and reward better company performance.

Our findings suggest that an immediate role for government is to improve the quality and quantity of public information about the impacts of corporate activity. Information is a public good and is key to making markets work. Information must be generated, standardized, provided, managed, verified, and disclosed to the public to fulfill its central role in making markets work efficiently and in encouraging ethical corporate behavior.

U.S. corporations now report to the government on a wide range of issues. However, while production and sales are increasingly global, reporting is limited to domestic operations. Thus, it is impossible for a

U.S. investor or other outside observer to tell whether risk has been reduced or merely shifted to another locale.

U.S. Right-to-Know Reforms

The U.S. lags behind other Organization for Economic Cooperation and Development (OECD) countries in embracing a proactive role for government in encouraging CSR, and importantly, there has been little public debate or discussion about whether and how government could and should play a role in encouraging corporate social responsibility and accountability. Being a laggard is ironic: the U.S. was an early leader in the area of information disclosure and, in terms of government information, remains far more transparent than many European countries. But the laws requiring corporate disclosure to regulators or the public are piecemeal and under-enforced.

Both federal and state governments can more widely embrace measures for company reporting. One possible template is the Global Reporting Initiative (GRI). This initiative, supported by a wide array of groups and the UN Environment Programme, is working to develop and disseminate a voluntary reporting template. GRI entails company-wide reporting, embracing both domestic and global operations, but not focusing on the facility-specific information that may be of most interest to local communities.

Another coalition of NGOs has proposed expanding U.S. labor and environment-related disclosure laws to cover the overseas operations of U.S. firms and their suppliers. Their proposed *International Right-to-Know Act* would require large U.S.-based companies, stock issuers, their subsidiaries and contractors to disclose to the U.S. government and the public, information on air and water emissions, toxic releases, worker health and safety, security arrangements overseas, and community relocation policies; as well as to clarify human rights, environmental, and labor policies, and complaints against the company in these areas.

Securities Reform

Another means of improving disclosure is to expand the use and enforcement of existing laws governing disclosure by publicly traded corporations. All corporations that issue stock in the U.S. are subject to certain requirements under both federal and state securities laws.

Disclosure is required, however, only of *material* information—that which a reasonable investor might have considered important in making an investment decision. Current definitions of materiality, which largely focus

on narrow economic performance measures, are inadequate. Even such mainstream organizations as the Brookings Institute and the American Enterprise Institute have jointly called for updating the information available to potential investors. Moreover, by the 1990s, socially responsible investing involved one out of every seven dollars under professional management, suggesting that corporate social performance is material to a much larger group of investors than was the case when the rules were put in place in the 1930s.

A group of NGOs and socially responsible investors have formed the Corporate Sunshine Working Group (CSWG) to develop appropriate measures for expanded disclosure to the Securities and Exchange Commission (SEC). The group's current proposal would require companies to disclose: a list of the countries where they have facilities or operations; corporate political contributions and lobbying activity; data on product recalls and product-related claims and settlements; data on percentage of unionized workforce; data on compliance with occupational health and safety, anti-bribery, labor rights, and anti-discrimination laws; and security arrangements with state or private police and military forces.

Creating Data Management Systems

Disclosure is only half the story. Too much raw data can overwhelm and befuddle, rather than enlighten, the public and policymakers. Data must become information, and then knowledge, and the government should play the role of information manager. It should gather, store, and organize the information available in accessible, searchable, and useful formats and databases. Different formats can help to serve different needs—for scientific research, community monitoring, environmental advocacy.

Government agencies themselves may not be the only, or even the best, processors of data. Government can support independent research organizations to process the raw data in various ways and help the government to independently analyze and distribute the information to local public sources.

Providing Regulatory Incentives for Disclosure

Good regulation involves a mix of "carrots" and "sticks." A number of emerging state and federal environmental programs offer positive incentives like shorter permitting times, one-stop shopping, multimedia permits, fewer inspections, or positive public recognition for companies that substantially exceed compliance with environmental law.

"Beyond compliance" programs generally require participating companies to meet three requirements: 1) an adequate environmental management system; 2) enhanced disclosure of environmental data; and 3) stakeholder consultation. The data disclosure requirement is generally limited to resource use, emissions, and wastes, and has not to-date included any occupational health or other non-environmental data.

Expanding these programs to cover occupational health and safety or human and labor rights issues would be complex, involving many more agencies, data collection, and sets of incentives, but could be done. Companies that wish to benefit from the additional flexibility of green track programs would likely voluntarily serve as testing grounds.

Protecting Consumers from False Advertising

Positive incentives for increased information production are growing, at least in the environmental area. Less developed are sanctions against incomplete, misleading, and false information.

Both the federal and state governments have long protected consumers against false advertising, as well as fraudulent and illegal business practices. However, the Federal Trade Commission, which is mandated to protect consumer interests, has taken a cautious stance to regulating claims of corporate responsibility.

In a landmark decision, the California Supreme Court in 2002 decided that false advertising and unfair business practices laws extend to a company's misrepresentations about such issues as labor practices. The case alleged that Nike misrepresented its labor practices overseas in public statements, thus misleading consumers.

Some are concerned that this approach will invite a rash of lawsuits and scare off corporations from voluntary reporting before mandatory reporting systems are won, and may make the battle for expanded mandatory reporting more difficult. However, these concerns can be addressed, for example, by providing a short window for companies to self-correct discrepancies that are brought to their attention without penalty.

Designing Verification and Accreditation Standards

A robust, credible system of self-reporting requires external verification of company performance. Currently, third party verifications are undertaken mostly by large accounting firms—the same firms that are now at the center of national controversies. Relying on these firms has had mixed

results at best: worker health and safety issues are often missed and the verifiers tend to evidence a pervasive pro-management bias.

Fundamental questions have not been resolved: who's monitoring the monitors? What, precisely, is being verified? What is the appropriate methodology? What are the appropriate qualifications of verifiers?

Currently, there are no rules or standards in the arena of CSR verification. Government policy should create incentives for companies to have their reports verified by third parties that meet specified accreditation criteria. An ideal verification system would combine systems and data verification from internal company sources and regulatory agencies with social and environmental conditions verification from workers and affected communities. Government, or government-private partnerships, can set out rules for training, areas of expertise, independence, competency, and licensing.

A Role for States? California as Innovator

At this early stage of policy development, pilot projects and regulatory experiments may be more easily and appropriately carried out at the state than the federal level. The results of local or state-level laboratories can feed into developing national and international policy frameworks.

The state of California may be especially well placed to take a leadership role in stimulating public debate and developing policy instruments to increase corporate accountability. California has the world's fifth largest economy and many of its corporations are known as leaders and innovators, including in the high tech industry.

California has long been in the forefront of regulatory strategies, especially on environment. It currently chairs the Multi-State Working Group on environmental management systems, and is designing a "superior track" environmental regulatory program that includes a substantial disclosure component. In many areas of California, state and local authorities are developing regional sustainability plans that involve businesses, regulators, and the public in cooperative goal-setting and monitoring exercises.

Information Disclosure

A policy initiative in California to "raise the bar" on mandatory corporate disclosure could take one of several forms. Mandatory disclosure, such as through enhanced state right-to-know laws, could be both facility and

company-based, and designed to feed into local and regional sustainability planning exercises. Such an approach would complement current second generation initiatives and encourage companies to develop internal data collection systems.

Alternatively, disclosure could be modeled after the state's Proposition 65, which requires companies to inform consumers when products contain certain listed chemicals, and which provides for citizen suits to sanction companies for failure to disclose. In this approach, companies would be required not to make changes to how they do business, but to disclose to consumers what they are—or are not—doing. Misleading or untrue statements could be penalized under state law. As discussed above, any disclosure requirement, to be effective, will need a solid information management or data management component to facilitate public awareness.

Leveraging California's Public Pension Funds

A second leg of a California strategy on corporate accountability could leverage the state's huge pension funds, especially the California Public Employees Retirement System, or CalPERS.

With assets of some $150 billion, CalPERs is the third largest pension fund in the world and holds stock in over sixteen hundred companies. In March 1999, CalPERS adopted the Global Sullivan Principles, which pledge the fund to express support for human rights, protect human health and the environment, and promote sustainable development. They also commit CalPERS to "promote the application of these principles by those with whom we do business."

CalPERS already sees its role as "moving the herd" in terms of engaging companies on corporate governance such as executive pay and board independence. CalPERS could embrace the social responsibility mantle as part and parcel of good corporate governance. One approach might be to apply a set of mandatory reporting requirements to the corporate portfolio, requiring companies to provide information along a number of axes—environmental, worker health and safety, community improvement, and so on.

California as a Consumer

A third leg of a state-based effort to improve corporate accountability could focus on purchasing decisions. The state currently purchases nearly $3 billion in materials, goods, and services each year. Currently,

environmental impacts and product life cycle are not considered in a comprehensive or coordinated approach in the state's purchasing.

The state's procurement laws already contain certain socially responsible directives, including .the requirement that contractors with the state develop and implement a nondiscrimination program and not use child labor. These laws could be amended to identify that the state has an interest in procuring goods and services from socially responsible businesses, that is, companies that can demonstrate a wider range of good performance on environmental, labor, and human rights grounds.

Reform of Corporate Law

Corporations are creatures of state law. They exist as legal entities under corporate charters granted in accordance with state law. Another way to enhance corporate accountability is to change state laws on corporate governance.

Every jurisdiction where corporations operate has its own law of corporate governance. In Maine, an ex-corporate lawyer is promoting a Code of Corporate Citizenship, which would be amended to state corporate law. Currently, the Maine law says that directors should discharge their duties with "a view to the interests of the corporation and of the shareholders." The code would add "but not at the expense of the environment, human rights, the public safety, the communities in which the corporation operates, or the dignity of the employees."

CHAPTER ONE

CORPORATE ACCOUNTABILITY IN A GLOBAL ECONOMY

INTRODUCTION

The increasing pace of globalization has catapulted U.S. multinational corporations (MNCs) into ethical quagmires in developing countries around the globe. Examples abound. Occidental, for example, according to evidence submitted to a military tribunal, abetted a peasant massacre in Colombia. Unocal was found by a U.S. court to have benefited from forced labor in Burma. In the "Seagate Affair," workers at the company's plant in northern Thailand were diagnosed with chronic lead poisoning and four died.[1]

There are also a growing number of stories about voluntary good deeds by U.S. multinationals to improve their social and environmental performance. Leading American and British oil companies adopted a voluntary set of human rights principles. Intel responded to community concerns about environmental health in Costa Rica. Levi's, Nike, Reebok and others have adopted management policies and practices to reduce child and sweatshop labor. Hewlett-Packard has expanded its recycling programs to many countries.[2]

Many companies have developed codes of conduct, which they publicize on their websites. But are voluntary initiatives enough? Faced with the lack of global standards and inadequate national regulation in many developing countries, should multinationals be entrusted with—and burdened by—self-regulation? What role should government play in defining norms and encouraging better corporate performance? What policy innovations would promote corporate accountability, while providing incentives for continuous improvement at home and abroad?

This chapter makes the case for innovations in public policy to promote global corporate social and environmental accountability. First, we describe the regulatory gaps faced by MNCs operating in developing countries and describe three strategies MNCs have taken in response.

Then we outline the corporate social responsibility (CSR) paradigm and describes and evaluates the business case for CSR. It suggests that inadequate information is the Achilles heel of CSR and analyzes the roots of the information gap. Finally, we develop a public policy framework, including mandatory information disclosure and leveraging the government's role as an investor and consumer. The policy framework is described in more detail in Chapter Four.

GLOBALIZATION AND MNCS

The past decade has witnessed an explosion of global trade, investment, and production. Between 1989 and 1994, global outflows of foreign direct investment averaged about $228 billion per year. By 2000, they had grown five-fold and totaled over $1.1 trillion. U.S. foreign direct investment (FDI) outflows nearly tripled, rising from $49 billion to $139 billion (Figure 1).[3] In 2001, U.S. imports of goods and services were about 14 percent of gross domestic product, up from about 11 percent a decade earlier. Exports accounted for 10 percent of U.S. output in 2002.[4]

Figure 1

FDI Outflows in 1990s

FDI Outflows ($ billions) Source: UNCTAD
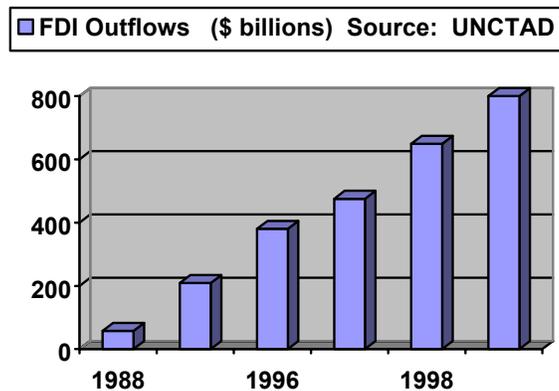
Multinational corporations are the main drivers of international investment and trade. Working through subsidiaries, joint ventures, mergers, direct suppliers, subcontractors, and other arrangements, MNCs construct complex global networks linking a wide variety of aspects of company production, management, and marketing in countries worldwide.

American multinationals are some of the biggest players in the global economy. Five of the ten largest MNCs in terms of foreign assets are U.S. companies, including ExxonMobil, the world's largest oil company and IBM, the largest computer company. General Electric, with foreign assets of $141 billion, is the world's largest MNC (Table 1).

Table 1

World's Top 10 MNCs

(Source: UNCTAD, World Investment Report, 2001, Table 3)

General Electric	U.S.	Electronics	141*
Exxon Mobil Corporation	U.S.	Petroleum	99
Royal Dutch Shell	Neth/U.K.	Petroleum	69
General Motors	U.S.	Motor vehicles	69
Ford Motor Company	U.S.	Motor vehicles	n/a
Toyota Motor	Japan	Motor vehicles	56
Daimler Chrysler	Germany	Motor vehicles	56
Total Fina SA	France	Petroleum	n/a
IBM	U.S.	Computers	44
BP	U.K.	Petroleum	39

Foreign assets, billions of dollars, 1999

The distribution of global investment is highly skewed. In 2000, over 79 percent of global FDI inflows went to rich, developed countries in Western Europe, Japan, and the United States. Indeed, the U.S. leads the world as both the top provider and recipient of FDI, followed by the U.K. With the majority of the world's population, developing countries received less than 20 percent of world FDI inflows in 2000.[5] Moreover, only a handful of countries, including China, Brazil, and Mexico, garner the bulk of the share going to developing countries. Africa, the poorest region of the world, receives less than 1 percent of the world's private investments.[6]

While they are a relatively small part of the global economy, MNC operations in developing countries have large local economic, social, and environmental impacts. In the late 1990s, foreign direct investment emerged as the primary source of capital to developing countries, far outstripping public sources such as the World Bank and foreign aid. In the smallest and poorest developing countries, foreign companies form a big part of the local market economy. One MNC may be the largest single

business operation in a region or even the entire country. Foreign mining and oil companies, for example, tend to be large players with high economic and often political profiles.

Regulatory Gaps, Ethical Quagmires

The social and environmental regulation of industry is vastly different in different parts of the world. Even very similar industrialized countries like Canada, the United States, and Germany, have different social norms and expectations of industry. In Germany, for example, workers have greater job security and work fewer hours than in the U.S., and environmental regulations are more stringent.

The gaps are largest, however, between the thirty rich, developed countries of the Organization for Economic Cooperation and Development (OECD) as a whole and the rest of the world—the 170 or so developing and transition economies of the Global South. In general, OECD countries have adopted a democratic form of government, with a strong embrace of civil and political rights and the rule of law. There is a large, generally affluent middle class.

Many developing countries, on the other hand, are either fledgling democracies or are ruled by authoritarian elites. Civil society is often weak or repressed and ordinary people are poor. In the U.S., per capita income in 2000 was $34,100. In Mexico, it was $5,070; in Vietnam, $390; and in Nigeria, it was $260.[7]

These broad socio-economic differences are mirrored in gaps in social and environmental regulation. Systems of environmental regulation, for example, were not established in most developing countries until the 1990s, twenty years after OECD countries. Moreover, most developing countries modeled regulation on the command-and-control systems of the U.S. or Europe. Lacking top-down enforcement capacities and often, political will, as well as avenues for civic involvement, environmental regulations are on the books but often ignored.

The lack of effective national environmental regulation is an issue not just for the least developed countries of the Global South, like most of Africa and South Asia, but also for the most industrialized and affluent. East Asian countries, for example, have been heralded as economic success stories for the last twenty years. According to the Asian Development Bank, resource degradation and environmental pollution in both East and South Asia is so "pervasive, accelerating, and unabated" that it risks human health and livelihood.[8]

Protection of basic civil and political rights, guaranteed by the Universal Declaration of Human Rights, is not extended to citizens in many developing countries. Rights to political speech, freedom of assembly, union membership, and general political involvement are constrained or denied. In some countries, the penalty for pressing the limits of civil and political rights is imprisonment, torture, and even death.

The global reach of investment and production thus poses a dilemma for Western MNCs and their stakeholders. The crux of the dilemma is that markets are global while regulation and ethics are not. In the absence of global and, often, national regulation, MNCs are often left to self-regulate, that is, to set their own standards or to simply follow local practice in the different countries in which they operate. Local practice, however, can involve a lackadaisical attitude to industrial pollution, a free-for-all attitude to resource exploitation, widespread corruption, and the violation of internationally accepted human rights.

In short, the global environmental and human rights dilemmas faced by MNCs stem fundamentally from regulatory failures. Markets, investment, and incentives span borders while the environmental and social regulation of industry remains national. Many host countries in the developing world, however, lack technical capacities, physical and institutional infrastructure and, often, political will to provide environmental and social oversight of business.

Moreover, competition for MNC investment makes policymakers reluctant to significantly raise environmental and social standards. Competition for investment is intense not only among developing but also developed countries, and extends to municipal and regional, as well as national, governments. In the absence of common standards for all MNCs, global competition for MNC investment creates a kind of low pressure zone in the world economy, keeping standards "stuck in the mud."[9]

MNCs as Rule-Makers

Self-regulation is a mixed blessing for multinationals. On the one hand, the lack of external regulation enhances company flexibility. On the other hand, the lack of common environmental, labor, and human rights standards exposes companies to a new kind of political risk—the explosion of local opposition and/or an NGO advocacy campaign at home, both of which can damage company reputation, brand name, and market share.

Faced with the central ethical dilemma of globalization, Western MNCs have adopted one of three broad strategies to deal with environmental

and social practices in developing countries: *duck-and-cover*, that is, following local practice; *no-regrets*, that is, developing company-wide, global standards; and *corporate social responsibility*.

Duck-and-Cover

The duck-and-cover strategy is to follow local standards and practice. This approach allows companies to capture the competitive opportunities offered by lower local standards and wages, while ducking ethical criticism with the cover of compliance with national law or custom.

Companies that adopt the duck-and-cover strategy are often "bottom feeders" in the industry, driven by efforts to gain a short-term financial advantage. Laggards in adopting good environmental and social standards, these companies often take market positions and opportunities left by leading edge companies. Unocal, for example, eagerly consolidated its partnership with the government of Burma in building a natural gas pipeline after other MNCs withdrew from the country because of gross human rights violations.[10]

No-Regrets

The second, no-regrets, strategy is for MNCs to adopt universal, company-wide standards, including for the management of environment, health, and safety, in all overseas operations. Some companies apply U.S. standards, especially environmental, wherever they operate, while others develop their own internal best practice standards that are more stringent than any national standards. The silicon chip giant Intel, for example, applies the higher of Arizona or California water quality and waste management standards to its Costa Rica operations.[11]

The logic for corporate global standards is two-fold. First, it is more efficient for a company to manage one set than a patchwork of dozens of different national standards. One set of standards can reduce transactions costs, including training, supervision, and legal costs.

Second, corporate global standards reduce risk, including harm to corporate reputation and the risk of product defect. Negative publicity from a large environmental disaster or human rights incident can harm the company's bottom line via a number of routes, including lowering investor valuation of the company. Moreover, with integrated production and supply chains, companies need assurance of quality control and of on-time production—accidents, strikes, and the like delay production schedules. Other risks reduced by corporate global standards include

environmental and on-the-job accident and injury, with concomitant down time; and legal liability for accidental death or injury, either in host or home country courts.

Corporate global standards became widespread among multinational chemical companies after the 1984 disaster at a Union Carbide pesticide plant in Bhopal, India. More than three thousand people were killed and tens of thousands permanently injured when a tank leaked five tons of poisonous methyl isocyanate gas in the air. Thousands more have died since then, due to the lingering effects of the poison. The local Union Carbide subsidiary was using local standards that never would have passed muster at the company's home in Connecticut. Even though Union Carbide got off easy—the court case was held in India, rather than New York, and the Indian government accepted a compensation settlement of only $470 million—the case sent a shockwave through the chemical industry and beyond.[12]

Corporate global standards likely deliver a higher level of environmental and social performance in developing countries than following local standards. But the no-regrets strategy has limitations. Standards might be global, but differences in local political, cultural, and socio-economic context will change implementation and impact. Corporate global environmental, health, and safety standards, for example, do not take into account the limited administrative capacities of many developing countries for disaster planning or for providing waste management infrastructure. Indeed, in the Bhopal case, the lack of local disaster planning greatly expanded the number of deaths and injuries from the deadly chemical gas.

In a more repressive political climate, workers cannot organize and are likely to feel constrained in bringing health and safety issues to the attention of managers. Or, as in the case of workers in the high tech industry in Taiwan, jobs are so valuable and prestigious relative to the options that complaints of illness from chemical exposure are stifled.[13]

In short, the voluntary adoption of corporate global standards goes only part of the way toward ensuring that workers, communities, and the environment receive an adequate quality of care, regardless of where the company operates.

CORPORATE SOCIAL RESPONSIBILITY:
AN EMERGING PARADIGM

A third and cutting edge strategy to deal with global ethical dilemmas and rising public demands, adopted increasingly by leading multinationals, is corporate social responsibility. In broad terms, CSR as a business management model has two components: 1) redefining the company mission to include benefits to stakeholders and society; and 2) operationalizing the new mission via management, auditing, and reporting systems.

A commitment to CSR requires owners and managers to re-conceptualize and reformulate the company's mission in terms of public purpose as well as private gain. At its most fulsome, a CSR mission commits the company to the pursuit of a triple bottom line: financial, social, and environmental.[14] Central to a CSR mission is the recognition that not only shareholders but also a wide circle of stakeholders, including workers, investors, consumers, and local communities, are affected by company decisions and operations. Engaging stakeholders is central to the CSR mission.

Operationalizing the triple bottom line mission requires that effective policies, procedures, and systems be put in place within a company both to raise environmental and social performance, and to enhance company accountability to stakeholders and the general public. There are three broad, interrelated entry points to CSR: codes of conduct, internal management systems, and external disclosure and third party verification.

Codes, Management Systems, and Verification

A code of conduct is a set of substantive and/or procedural principles that outlines a company's broad commitments to environmental protection and social good. In the main, companies develop their own individual code, though some embrace pre-packaged or industry-specific codes developed by trade, public interest, or international organizations. At the most generic level, the UN Global Compact's nine principles provide an ethical code for all companies operating in the global economy.[15]

The substance of the codes tends to vary both by industry and by company, reflecting differences in issues of public concern, NGO advocacy, or company preference. High tech companies, for example, generally have strong environmental codes, while apparel companies focus on labor. Oil companies tend to focus on both. Some companies have strong philanthropic cultures, while others stress worker health, safety, and happiness.

The most important differences in the codes, however, lie in implementation and accountability mechanisms. Many codes do not specify any compliance mechanisms at all, whether in terms of benchmarks, internal monitoring, internal or external reporting, or internal or third party verifying. Lacking both quantifiable benchmarks for improved performance and enforcement mechanisms, these codes seem to be aimed more at public relations than at guiding internal management. Some codes do provide for internal auditing, but no way for outsiders to gauge the credibility or veracity of company claims about performance.[16]

Management Systems

Many companies operationalize their commitment to CSR through the adoption of a management system either in place of or in addition to a code of conduct. These systems tend to establish standards and formulas for processes rather than setting substantive guidelines. A systems approach starts from the proposition that "you can't manage what you don't measure." When they are effective, management systems establish internal operations to monitor environmental, labor, and/or social impacts, and to provide feedback mechanisms to line or functional managers.

One of the most widely adopted environmental management systems is ISO 14001. The logic of ISO 14001 is to outline processes for four key steps: "plan, do, check, act" or Environmental Policy and Planning, Implementation and Operation, Checking and Corrective Action, and Management Review.[17] The aim of ISO 14001 is to stimulate internal company processes that can promote continuous improvement rather than compliance with a given set of regulations. The emphasis on process over substance is a double-edged sword. If effective, a company's performance will indeed continuously improve. However, the ISO certification is sometimes mistakenly touted as signifying a company's adherence to substantive standards.

Some management systems combine process with substantive standards. The Social Accountability 8000 (SA 8000) standard, for example, sets both minimum performance requirements and monitoring and feedback processes for workplace conditions. SA 8000 covers nine core areas: child labor, forced labor, health and safety, compensation, working hours, discrimination, discipline, free association, and management systems. The Institute for Social and Ethical Accountability's AA 1000 management standard focuses on ethical decision-making.[18]

A key component of some management systems, including the European EMAS and SA 8000, is external certification. A certification body reviews

the systems in place and grants a seal of approval to companies found to meet the criteria of the standards. In both cases, there are systems to certify the certifiers. In the case of ISO 14001, a company may self-certify, and certification does not imply that companies are meeting particular standards of environmental care or worker protection. Rather, it certifies that companies have monitoring and feedback systems in place. Even where companies decide against formal third party certification, they may have their own management systems in place throughout the company. Some have also begun to develop systems to manage Environmental Health and Safety (EHS) aspects of their global subcontractors and suppliers.[19]

Disclosure and Third Party Verification

One of the most important—and, for companies, most difficult—aspects of operationalizing CSR is external accountability, *viz*, oversight by external stakeholders and the general public. The key to accountability is the gathering and sharing of quality information about company performance. In the absence of credible information, company claims of good deeds and rising performance can rightly be—and are—met with skepticism in the marketplace and beyond.

One approach to enhancing credibility is for companies to report publicly on their environmental, labor, and/or human rights performance, including quantitative data. Public disclosure can take a variety of forms. Many companies that have created codes of conduct also publish environmental and social performance information in annual reports and/or on their websites. Claims about better performance, however, are often vague, with little or no real data. Moreover, the information is reported in many different formats, making comparisons among companies difficult.

Public disclosure is a difficult sell for many companies. Legal departments fear the potential for liability, executive managers worry about trade secrets, and protective company cultures encourage all employees to be tight-lipped. To help overcome this resistance, a coalition of companies and NGOs, with the UN Environment Programme, have joined to produce a comprehensive, standardized reporting framework for voluntary disclosure, the Global Reporting Initiative (GRI). Initially conceived as a framework for environmental reporting, GRI has expanded to include both social and environmental issues. However, information is reported on a firm rather than plant level, limiting its usefulness to community monitoring efforts.

Rather than disclose data, another approach to enhancing accountability is to engage a third party to conduct social or environmental audits and verify the validity of performance claims. A few companies have asked NGOs or well-known individuals to act as third party verifiers. In the main, however, large financial auditors such as Price Waterhouse Cooper (PWC) have captured the external verification market niche. Apparel companies with global supply chains, for example, have relied on PWC to verify that subcontractors are not utilizing child or sweatshop labor.

The Promise of CSR

There is no single model of corporate social responsibility. Rather, companies construct their own approach by selecting from a variety of points of entry and management tools. The most robust are those that weave together substantive standards and benchmarks, effective internal management processes, and credible disclosure and verification.

A robust CSR approach to business management offers substantial promise as a method of raising the environmental and social performance of industry, both at home and overseas. The conventional approach to protecting the public interest—government command-and-control regulation—can only go part of the way toward improving performance. It can also be rigid, expensive to monitor, and can generate perverse incentives.

With its emphasis on performance, CSR is congruent with a more flexible "second generation" approach to regulation. Greater flexibility allows companies to deploy human and financial resources to achieve maximum impact, rather than to meet rigid specifications. It can allow companies to move beyond compliance. The essence of CSR is the interaction of companies and advocacy groups via market forces. The promise—and the lure—of CSR is that markets will reward good performers and punish bad ones.

The business case for CSR is built on the proposition that good environmental and social performance produces tangible financial benefits that can be captured by companies and investors. It can do so in one or both of two ways.

First, consumers, investors, and/or workers may prefer to buy from, invest in, or work for socially responsible companies. Private preferences can generate financial rewards such as higher profit margins, larger market share, higher stock prices, cheaper access to capital, or more productive and loyal employees. Investors in particular may prefer companies with

strong environmental management systems, since unexpected environmental liabilities and clean-ups can be costly. Moreover, good environmental management may signal good corporate governance overall, further reducing investor exposure to risk.

Second, even if companies don't advertise or report on their environmental and social commitment, CSR may improve a company's financial return by improving resource and energy efficiency, labor productivity, or product design and quality. In other words, CSR could help companies compete on traditional terms, including by positioning a company as an industry leader in terms of cutting edge technology and/or management systems. CSR, in short, can be a strategy to take the lead over competitors. Moreover, if new regulation is expected, "early movers" will have a competitive advantage.

Studies seeking to prove the business case for CSR have yielded mixed results. A host of statistical studies of U.S. firms in the 1990s found positive correlations between environmental performance and various measures of financial returns.[20] Suggested causality was different in the various studies and included reputation effects and investor expectations and perceptions of environmental costs and risks.

More recent studies also have found that there is no significant cost to screening portfolios on environmental and social grounds.[21] One study could find neither a positive nor a negative correlation between environmental management and financial portfolios. However, it found that the stock price returns of companies with high environmental standards were less volatile.[22]

Most studies examine the environmental performance of firms in the U.S. One recent study, however, explored how choices made by U.S. multinationals about standards in developing countries affect market value.[23] The study found that companies that adopt a Duck-and-Cover strategy and follow local standards are valued significantly less by markets than companies that adopt corporate global standards. The most valued companies were those that followed not U.S. standards, but set their own internal stringent standards.

Cause and effect, however, is unclear. Do markets reward companies because of good environmental performance, or do well-managed corporations preferred by investors perform better on environment? If the latter is true, then perceived environmental commitment might indeed be a proxy for companies with good corporate governance, with expectations of higher and/or steadier profitability, and thus higher stock prices.

The Limits of the Business Case

One problem with all the studies is that real data about the environmental (and social) performance of U.S. multinationals in developing countries is completely lacking. In the study about global vs. local standards, researchers relied on two sources of data: 1) surveys in which companies voluntarily provided the information on whether they followed local, U.S., or internal global standards; and 2) U.S. Toxic Release Inventory (TRI) data, which served as a proxy for overseas performance and assumes that domestic and overseas performance are correlated.

Another problem with the studies is that they are unable to find evidence of change in behavior. There may be a significant correlation between stock prices and environmental commitment today, but no evidence that companies change their behavior and improve environmental management with the expectation of higher stock returns tomorrow.

In the end, the business case suggests that what will drive a business to embrace CSR is not a triple but a single financial bottom line. Good corporate citizenship, the argument goes, is good for business. What is needed is the development of better methodologies to quantify non-tangible benefits to companies of "doing good."

The problem with this approach is that there is plenty of evidence that unethical, environmentally unsound and even illegal business practice can also be good for business, at least in terms of increasing short-term profits. Even if there are returns, doing "the right thing" requires resources and time and perhaps foregoing easy, short-term profit. It is naïve to imagine that social objectives and private profits can always be a win-win proposition.

There is some evidence to suggest that at least some industry leaders perceive benefits in CSR, though there is little hard evidence about what the primary drivers are. For some the primary motivation may be protection from critical media campaigns by NGO, labor, consumer, and other advocacy groups. Advocacy campaigns can damage company reputation, an especially pressing concern for brand name companies that make consumer products.

Corporations may also embrace self-regulation as a way to preempt government regulation. Industry-wide codes of conduct in the pesticide and chemical industries, for example, only gained acceptance because the imminent alternative was a binding set of international rules.

Is it Working?

The CSR model offers the allure of an alternative to government regulation as a way to hitch environmental and social protections to market forces, both at home and abroad. If done in response to NGO or shareholder action, a company's embrace of CSR may be less than wholly voluntary, a process dubbed "civil regulation."[24] Nonetheless, it is far from mandatory, which is the case with regulation. Most important, companies have great flexibility in how they define and implement CSR.

There is some evidence that companies are changing and embracing new ideas that bring private gain and public good closer together. In the high tech industry, for example, leading companies have adopted sophisticated environmental management systems. In the oil industry, a few leading multinationals have signed on to voluntary guidelines that aim to protect human rights in the design and implementation of company on-the-ground security operations.

But there is also a large body of evidence that the voluntary embrace of best practice is piecemeal, incremental, and far from global. Despite evidence supporting the business case, only a few major companies have embraced it. Moreover, as a 2002 World Resource Institute report concludes, even leaders have taken on only a "thin slice" of what civil society groups argue is needed.[25]

Hard evidence about the uptake and especially the performance impacts of CSR is nearly impossible to obtain. What evidence there is suggests that uptake has been low and slow. A handful of highly visible industry leaders have dominated the headlines for the last decade. Followers have taken small and incremental steps.

A 1999 study by the global accounting firm KPMG showed that of a total sample of eleven hundred multinationals, less than a quarter produced an environmental or EHS public report. In the U.S. the rate of reporting from 1996 to 1999 dropped from 44 percent to 30 percent. Independently verified reports rose from 15 percent of the companies in 1996 to 18 percent in 1999.[26] In the U.K., less than a third of the top 350 corporations responded to the Prime Minister's call to report on their environmental impacts by December 2001.[27]

One reason for the low rate of uptake may be the lack of methodologies to account for and value intangible assets like reputation, as well as more tangible but difficult to quantify costs involved in environmental and social externalities. Accounting methods would help companies in both their

internal management and external social reporting. Many companies that do not report publicly may have internal ethical or environmental guidelines. The lion's share of the largest American multinationals have adopted a code of conduct or something like it. Still, reporting to the public on environmental and social performance is the key lubricant of the business case.

Aside from blue-chip companies sensitive to consumer pressure and "green" companies that have built their reputations on eco- or ethical behavior, it is unclear to what extent companies even bother with CSR. On the other hand, for many local communities and NGOs, the weaknesses in disclosure or verification mechanisms have made them skeptical of the whole enterprise. On its own, the uptake of voluntary CSR may simply sputter out. The reality is that current best practice of CSR is far from good enough in promoting a sustainable future and the human rights of workers and communities, either at home or overseas.

The Public Interest and the Information Gap

One of the central shortcomings of the current state-of-the-art of CSR stems from the weakness of the force that drives and animates it—market-relevant, credible, comparable information. Without good-quality information, consumers and investors cannot consistently and accurately voice preferences through markets. Even within companies, managers sometimes lack the information they need to improve efficiency and safety of production processes and product design.

The environmental and social information gap has five sources:

- *Minimal statutory requirements* for company disclosure mean that little information about company performance is in the public domain. Many ethical investment funds, for example, rate corporate environmental performance on the basis of a few mandatory reporting indicators such as U.S. Environmental Protection Agency (EPA) compliance and Toxic Release Inventory data. Compliance is only loosely related to actual performance, as many of the most intractable environmental and social problems are unregulated. Moreover, statutory disclosure requirements cover domestic operations only. There is virtually no requirement for companies to disclose information about their foreign subsidiaries, joint venture partners, or major suppliers.

- *Company fear and refusal to voluntarily disclose* internal information, including fear of liability or other reprisal, divulgence of trade secrets, and fear of being disadvantaged relative to a competitor. Companies are often reluctant to "stick their necks out"

for fear that "nice guys finish last." The lack of statutory disclosure requirements, in other words, provides a strong disincentive for voluntary disclosure.

- *Greenwashing* is the lack of credibility and/or usefulness when company information is disclosed. The typical vehicle for disclosure is an annual company report, usually also published on the company website. Greenwashing takes many forms: sweeping claims of improvements without quantitative data; selective data that highlight improvements in one area (e.g., reduced water use) while ignoring other crucial areas (e.g., energy efficiency, working conditions); and shallow or misleading third party verification of data. An academic researcher who shadowed Price Waterhouse Cooper's social auditors in Asia, for example, found that workers interviewed to determine working conditions and child labor were uniformly selected by subcontractors. PWC's labor rights seal of approval to large U.S. apparel companies rested on virtually no independent investigation of conditions on the ground.[28]

- *Proliferation of voluntary standards, codes, information management systems, and social expectations* has generated confusion within companies about what information systems to invest in. It has also hindered comparison among companies. Moreover, companies fear that social expectations are a moving target, with new issues constantly emerging from small groups that can mobilize a large voice.

- *Lack of overarching sustainability and human rights policy goals* means that benchmarks and improvements by individual companies or even groups of companies are difficult to evaluate. For example, a high tech company operating in a water-scarce region may set water efficiency and reduction targets and (if company reports are true) meet them. However, without a larger ecosystem and social planning context, it is impossible to know if the benchmarks and gains are enough to ensure sustainability and equity in the use of the region's water resources. The lack of a larger policy context renders company information partial and ambiguous.

THE NEED FOR PUBLIC POLICY

The dynamic interaction of multinational corporations and advocacy groups has catalyzed change in business thinking and, to some extent, action. Social responsibility has emerged as a new strategic direction for the governance of corporations—a route around the inflexibility, perverse incentives, and high enforcement costs of the traditional command-and-

control style of regulation. With CSR, a company strives not only to comply with externally imposed regulations but also to make continuous improvements in environmental and social performance in ways that make business sense.

To be more than a mirage, the promise of CSR needs the reinforcement of government. The business case for CSR works only so far before industry leaders come up against the competitive pressures of markets, especially global competitors. NGOs and other advocacy groups can work effectively as watchdogs and catalysts only so long before they reach the limits of their human, technical, and financial resources.

What can and should government do? As a starting point, government can be an effective convener, bringing together companies, NGOs, and the wider public in strategic dialogue to help define social expectations of corporate ethics. Government can also enrich the NGO-corporate interaction by providing technical assistance to companies, community groups, and NGOs. It can leverage its role as investor and major purchaser. It can promote similar initiatives with its counterparts in other regions, blunting criticism that U.S.-based corporations are being unfairly singled out.

Fundamentally, the role of government in society is to create public goods. In the case of global corporate social responsibility for environment and human rights, the two most needed public goods are 1) credible, high-quality information; and 2) substantive global standards. Information reinforces market forces working from the bottom up, while a global framework for all market players defines normative expectations from the top down.

Information is the lifeblood of CSR. Government must spearhead efforts and standards to systematize the gathering, management, and disclosure of information about company environmental and social performance. The information framework could build on voluntary efforts already underway, such as the Global Reporting Initiative. It should set a floor, not a ceiling for information disclosure, allowing communities, company managers, and NGOs to press for disclosure beyond what is eventually required. And it should span both the domestic and global operations of multinational corporations.

Standards for information gathering and mandatory disclosure would greatly reinforce the potency of CSR as a supplement to more traditional forms of regulation. To be implemented, such standards would need to be supported not only by the general public but also crucially, by corporations themselves. Why would companies support them?

First, information and disclosure standards would create a level playing field for all market players. They would clarify minimum social expectations and apply them to all. Many companies in highly competitive global markets worry about being undercut by less scrupulous competitors. Leaders in triple-bottom-line thinking would especially welcome a common standard for all players.

Second, a common and consistent framework for managing and reporting information would reduce the costs to business of responding to multiple, amorphous, and sometimes contradictory demands from advocacy groups. In essence, a government role in managing information needs would allow companies to re-externalize some of the costs of doing business back onto stronger public sector institutions.

Disclosure requirements do not set substantive standards. Rather, they upgrade the quality and quantity of information in the hands of community and advocacy groups, as well as investors, shareholders, regulators, and the general public. Working through market forces, these groups can work to raise performance and drive continuous improvement. Mandatory disclosure laws enacted by national and subnational governments like California can work to strengthen corporate accountability from the bottom up. National initiatives by individual countries, especially large market players like the U.S., would work to diffuse global norms.

There is also a need, however, to define and enact common substantive and process standards for all market players. There are a number of entry points for such rules, including in international, regional, and bilateral trade and investment agreements. To date, negotiations over global and regional investment rules have focused solely on protecting the rights of foreign investors. A more balanced approach would also specify investor responsibilities, as well as the oversight responsibilities of host and home governments.[29]

For example, countries that mutually offer non-discriminatory "national treatment" to foreign corporations could also be obliged to adopt global minimum human rights, labor, and environmental standards.[30] In many cases, these standards already exist in documents such as the Universal Declaration of Human Rights, the ILO core labor standards and the World Bank's environmental standards. Host and home governments could also set specific guidelines for corporations operating in their jurisdictions, such as an environmental and social impact assessment ahead of large investment projects; the adoption of environmental and social management systems as part of corporate governance; and the disclosure to the public and/or to regulators of certain kinds of environmental and social performance-related information.

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Beyond international investment agreements, particular global standards for corporate performance could be incorporated within institutions whose scope embraces environmental protection, labor rights, or human rights. For example, Multilateral Environment Agreements (MEAs) such as the Kyoto Protocol on Climate Change are developing market interfaces such as the Clean Development Mechanism. The Protocol could point signatory governments toward statutory changes in corporate governance that promote cleaner and more efficient use of energy.

Policy initiatives to strengthen and expand corporate disclosure would complement these efforts to reform international law—and vice versa. Moreover, policy initiatives built on right-to-know are likely the most politically feasible way to strengthen CSR, at least in the United States.

The idea that government policy should play a role in promoting global corporate social responsibility is much more widely accepted in Europe than the U.S.[31] To date, the U.S. government has been lukewarm to the idea, especially under the administration of President George W. Bush. Nonetheless, the idea is gaining momentum, including at the state level. A number of states have taken or tried to take initiatives to encourage or mandate better corporate social and environmental performance. With the world's fifth largest economy, a history of innovation, and a highly educated and ethically concerned public, California may be well positioned to be a pace setter.

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CHAPTER TWO

OIL COMPANIES: LIMITS TO CHANGE*†*

INTRODUCTION

The petroleum industry is probably scrutinized more closely than any other sector of the economy. Activists and non-governmental organizations of every stripe—be they environmentalists, labor organizers, proponents of sustainable development, anti-globalization demonstrators, or advocates of human rights and democracy—have, at one time or another, found reasons to inveigh against Big Oil.

Oil development has contributed to problems of pollution, biodiversity, and habitat loss, rising poverty and disease, human and labor rights violations, and, more recently, escalation of conflict and violence in oil-producing regions. Many of these problems are most evident in developing countries, but human health and environmental justice issues are also significant in the U.S.

Yet, most companies are still "passing the buck." They deny responsibility for ecological and social disruption, laying the blame on host country governments. They point to government regimes responsible for human rights abuses, violence, high levels of corruption, and misallocation of oil revenues, to the detriment of local communities. However, issues such as corruption are also fueled by corporations willing to take part—the oil sector is one of the most problematic.[1]

To be sure, governance issues pose critical challenges for long-term sustainable development. They make operating in developing countries a complex and difficult challenge. Some companies are finding their way, and promising change. They are adopting revised codes of conduct that are more sensitive to the environmental, social, and cultural needs of the communities in which they operate. They are starting to recognize the need for sustainable development. Some are seeking dialogue with

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† Many multinational oil companies also have substantial investments in exploration and production of natural gas and other energy sources. For simplicity, we refer to these companies as "oil companies" throughout this report.

the very groups that monitor and report on them. A few of the new initiatives we investigated provide avenues of reform that all multinational oil companies can work with—suggesting that companies can and *should* do more to ensure that there are tangible benefits to the people and ecosystems that coexist with oil operations worldwide.

But there are limits to change, through voluntary initiatives. Oil company and industry-wide codes tend to comprise vague goals and general statements of practice, rather than measurable (or enforceable) standards. There is no consistent pattern of evaluation and reporting, or of third party, independent monitoring and verification of company practices and performance.

In few industries, the need for leadership is as urgent. Environmental regulation and economic oversight are ultimately the responsibility of governments, not private corporations. Governments in both home and host countries can take immediate steps to improve their oversight. These include adopting legal and policy reforms for broader public disclosure and independent verification of performance requirements for corporate activities here and abroad; establishing mechanisms to facilitate more effective community participation in official and corporate environment and development decisions; and a more active use of diplomacy and bilateral resources to encourage better environmental and human rights practices.

While some companies may resist the needed legal and institutional reforms, there is a growing number of companies finding that improved corporate social responsibility can both help their image and bottom line, and establish a greater degree of consistency and certainty in public expectations about their behavior.

We discuss these issues and the challenges for improving corporate social responsibility for oil corporations in this chapter, focusing on three arenas: environmental protection, human rights (including worker rights), and socio-economic community development.

We begin by presenting a brief snapshot of the history and current structure of the global oil industry. Next we describe the environmental and social issues related to oil operations. These are drawn from case studies of multinational oil activities in Nigeria, Kazakhstan, Azerbaijan, and Ecuador, undertaken by California Global Corporate Accountability Project (CAP) field researchers. In the case studies section we summarize field investigations, touching on the deepest controversies that have surrounded oil operations in each locale.

We next turn to exploring the international governance dilemma related to the global oil industry, including the corporate social responsibility initiatives devised by industry groups, international organizations, and individual companies, and we discuss the reasons public interest groups criticize voluntary initiatives (particularly codes of conduct). We analyze the challenges in using these initiatives as objective performance measures or as tools to verify claims of improved performance.

Following this we present the California experience. In analyzing the state's regulatory system and company compliance, this case study provides us with a glimpse of the enormous challenges related to implementing what very well may be the most demanding environmental and social regulatory system in the world.

We then present some positive—and, in our view, effective—steps the industry has recently taken toward reform. The section describes two cooperative initiatives—the Voluntary Principles on Security and Human Rights and the Partnership for Climate Action—that take concrete action on these two crucial issues. Each of the initiatives gives non-industry stakeholders a place at the table, and each includes a provision that allows independent organizations to verify industry claims. In this section, we also present a study of one project—Shell's Camisea operation that was run briefly in Peru—that can serve as a preliminary foundation for industry-community relations.

Finally, we provide recommendations to U.S. and international policymakers on encouraging increased corporate accountability to protect the environment, community development, and the cultural assets of affected communities—as well as the reputation of the oil industry.

The Industry at a Glance

World oil consumption is rising fast. Today oil makes up the world's primary energy source, composing over 40 percent of total world energy consumption.[2] Experts project that demand for oil will increase from 65 million barrels per day to 90 million barrels per day in less than twenty years.[3] According to the World Energy Council, a large part of this demand will come from developing countries, increasing from one-third to one-half of all oil consumed by 2020.

Current oil supplies are considerable. According to the U.S. Energy Information Administration's June 2000 report, the combined oil reserves of Iran, Iraq, and Saudi Arabia total 250 billion barrels. Significant reserves also exist in Africa (53 billion barrels), North America (Canada,

Mexico, and the United States have combined reserves estimated at 55 billion barrels), and China (34 billion barrels). If the current production rates were sustained and no more discoveries were added, the world's reserves would be able to sustain production for forty more years (Figure 2).

<u>Figure 2</u>

World Oil Production
May 2000

World Total Oil Production, 2000
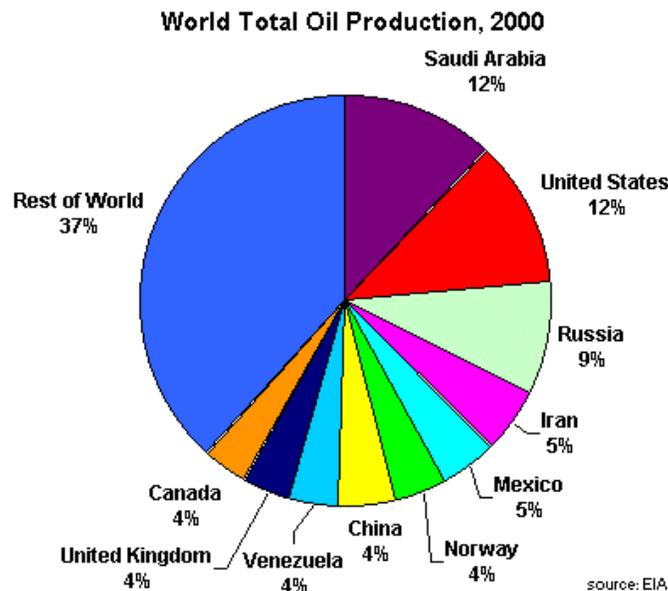
In addition, significant new supply regions are in the process of exploration and development. The Caspian region, which industry analysts rank as the best discovery in twenty years, is said to harbor potential oil reserves in excess of 250 billion barrels. Roughly the equivalent of one-quarter of the Middle East's proven oil reserves, these numbers could place the countries of the Caspian among the world's largest oil producers. "I can tell you that there is oil, big oil, and it is good quality," claimed Kazakhstan's President, Nursultan Nazarbayev, on a recent visit to an oil site in his country.

The key players in this dynamic global market are multinational corporations and government owned enterprises. Multinationals have been dominant in the global oil market almost since commercial

production of oil began in the United States in 1859. At first, the near-monopoly of Standard Oil, which was dissolved in 1911, built its empire on downstream dominance, leaving control over resources to oil-producing nations.[4] After World War I, Allied nations pursued access to foreign oil reserves. These nations turned to the Middle East and negotiated strategic partnerships to gain access to oil reserves there. France and the United Kingdom split the Turkish Petroleum Company; the U.S., France, and the U.K. took over the Iraq Petroleum Company. The benefactors of these deals were the multinational oil companies. By 1928, Exxon, Shell, and BP controlled more than 50 percent of oil production outside the U.S.[5]

The post-World War II market was dominated by the "Seven Sisters": Exxon, Mobil, Standard Oil of California, Texaco, Gulf, British Petroleum, and Royal Dutch/Shell. Together, they accounted for almost all of world production. Furthermore, their domination extended to all levels of the oil market. In 1953, the Sisters collectively controlled 95.8 percent of all reserves, 90.2 percent of production, 75.6 percent of refining capacity, and 74.3 percent of distribution.[6]

By the 1960s, however, the Seven Sisters began to face more competition from smaller private companies and from national oil production companies. Smaller companies competed by developing new areas of production outside the Sisters' control. For example, the French company CFP began production in Algeria in 1959. The increased supply from competitors resulted in lower prices and diluted market share.

The majors responded by cutting market price, which decreased oil-producing countries' taxes and royalties. This triggered the formation of the Organization of Petroleum Exporting Countries (OPEC) in 1960. The rise of OPEC presented an even greater challenge to the majors' control during this period.

OPEC's dominant control over price setting did not last forever. During the 1970s and 1980s, demand decreased in response to higher prices and stagnating economies. Meanwhile, new producers who had witnessed the high profits captured by OPEC countries had entered the market.[7] Oil-producing countries also began to integrate downstream. Countries like Kuwait, Venezuela, Saudi Arabia, Libya, and Norway began investing in refineries and distribution sources in Western Europe and the United States.[8]

Recent trends suggest a new dynamic structure to the oil industry. Global companies now compete with smaller private and government controlled companies. A number of countries have privatized and deregulated their

industries, e.g., Hungary's MOL, Austria's OMV, and Argentina's YPF, creating new players that have moved beyond their domestic markets into the global arena.[9] Others have chosen not to privatize but to enter the global market as nationally owned oil companies, e.g., China's CNPC and India's ONGC, where they can explore for oil overseas instead of relying on imports.[10]

At the same time, another phenomenon has taken place. Many companies have become less *vertically integrated* in the oil market share—that is, they no longer hold interests in all aspects of the oil market: exploration, production, transport, refining, and consumer sales. Many have spun off the refining and consumer sales businesses.[11] This has been particularly significant in the U.S., where the number of vertically integrated companies declined from four hundred in 1985 to just twelve in 2001.[12]

To stay competitive, a number of multinational companies have sought acquisitions and mergers. BP purchased Amoco and ARCO (Atlantic Richfield Company), Exxon and Mobil merged, Total absorbed Petrofina and Elf Aquitaine, Chevron purchased Texaco, and Conoco merged with Phillips Petroleum.[13] By increasing their size, these "super-majors" are seeking to reduce their costs and diversify risks in a market where the price of oil has been volatile for the past two decades.[14]

In the upstream market, however, the biggest firms and best assets are still controlled by governments. Chevron and Texaco appear to be small when compared to Saudi Arabia's Aramco, which by itself produces a fifth of the world's oil exports.[15] Despite private sector attempts to buy upstream properties, governments are reluctant to give up control. The super-majors are now scrambling for exploration rights to undiscovered reserves. This push has incited companies such as BP, RoyalShell, and ExxonMobil to invest in new technology, such as ultra-deep drilling capability to tap potential reserves under the ocean off Brazil, West Africa, and the Gulf of Mexico.[16]

The need for stronger competitive positions suggests that the trend toward resource concentration in a few dominant players will continue.[17] In time, we can expect "producing countries to establish new rules under which foreign companies will be allowed direct access to oil reserves under conditions that will guarantee the government's political control…as the process develops, the distinction between the various types of companies—national oil companies of the producing or importing countries, international integrated oil companies, small non-integrated companies, etc.—will fade out."[18]

ENVIRONMENTAL AND SOCIAL CHALLENGES

Many areas with known and abundant petroleum reserves, especially in developing countries, are also home to unique ecosystems and impressive biodiversity. Examples of these sites can be found across the globe: from the Amazon's lush tropical jungle to the Niger Delta's mangrove forests and the South Pacific's vibrant coral reefs. Many of the people who live in these regions depend on natural resources for their survival. River water is used for drinking and agriculture, plants for medicine, fish and animals for food. Some of these communities are among the last examples of intact indigenous culture left in the world.

However, communities where oil is developed and refined often suffer from a litany of social ills: persistent poverty, rising health problems, low levels of education, lack of infrastructure, and political disenfranchisement. Some of these problems would undoubtedly exist without oil operations sited nearby. Others are exacerbated by oil activities. Still others, such as health impacts from pollution, are directly traceable to oil-related operations near their communities.

While the causes of these problems are debated, one thing is certain: many local citizens do not reap enough economic benefit from oil activities that can—and often do—significantly impact their lives. Communities are responding with protest—sometimes peaceful, sometimes not. Citizens of oil-affected communities are creating local organizations to represent their claims, sometimes joining forces with larger international NGOs. In countries where human rights abuses are frequent, those who protest oil development or its effects can risk harassment, abuse, or death.

The most critical environmental and social problems that have been associated with the oil industry are described below.

Pollution and Ecological Destruction

Crude oil and petroleum products contain a series of chemical compounds that render them highly toxic.[19] Petroleum is composed principally of hydrogen and carbon, but it also contains sulfur, heavy metals, and hydrogen sulfide—elements that can poison humans, animals, and the environment.

Oil production and refining involves waste and air emissions that can threaten the ambient environment. Oil may spill or leak into soil and groundwater, causing long-term damage to fish, wildlife, and surrounding

vegetation.[20] Compounds used in the refining process can be transmitted through the air and can seep into groundwater, affecting drinking water, fisheries, and agriculture. Some types of contamination have been found to travel through the food chain—from soils to plants to people. Air pollution caused by the release of chemicals from the production and refining processes contributes to smog[21] and can stunt the growth of trees and plants.

The sensitive environments in which oil is developed have suffered enormous damage. Between 1976 and 1988, for example, 2.1 million barrels (88.2 million gallons) of crude oil spilled into the Niger Delta. Other findings suggest that from 1982 to 1992, Shell's operations alone spilled 1.6 million gallons of oil into the Delta in twenty-seven separate incidents.[22] The government reports that less than 30 percent has been recovered. In Ecuador during roughly this same period (1970–1990), the government's private-sector partners opened 1 million hectares of pristine rainforest to extract two billion barrels of oil. As much as a billion gallons of untreated waste and oils may have spilled into the Amazon.[23]

Although a significant number of oil spills can be attributed directly to oil operations, an increasing number result from sabotage by disgruntled locals. According to the U.S. Department of State, the Cano Limon pipeline in Colombia was sabotaged seventy-nine times in 1999, with a total of 8.4 million gallons of crude oil spilling into the surrounding jungle. In 2000, there were twenty-two attacks on the pipeline, resulting in the spillage of an additional 6.3 million gallons.[24] Occidental Petroleum reported the pipeline had been attacked more than seven hundred times since its construction in 1986, with the ruptures resulting in spillage of 2.2 million barrels of oil into the surrounding ecosystem.

There are several different methods that can be employed to treat petroleum contamination: excavation, pumping and filtering contaminated water, venting and biodegradation of soil, landfilling, landfarming, and incineration, among others. Though these methods may eliminate the initial contamination, some may expand the problem. For example, incineration of contaminated soil can re-introduce certain chemicals into the atmosphere through smoke.[25] This has been a problem in Angola, where PCBs have been incinerated in open pits at oil production facilities.

Human Health Impacts

Many of the chemical compounds found in petroleum or used during production and refining processes can impact human health, causing cancer and reproductive damage. The following compounds used in oil production and refining operations have been identified as physically

harmful: 1) carcinogens including benzene, formaldehyde,1,2-dibromethane, carbon tetrachloride,1,3-butadiene, and cobalt; and 2) those that can cause genetic mutations, including styrene, phenol, chlorine, and ethylene glycol.[26] Aromatics added during the refining process, including benzene, toluene, ethylbenzene, and xylene—all known carcinogens—put petroleum industry workers at risk[27] (Table 2).

Table 2

Chemical Compounds Associated with Oil Harmful to Human Health

PCBs

Polychlorinated biphenyls (PCBs), used for example as lubricating oils for drills and degreasers, are a family of more than two hundred compounds. PCBs are used in several applications within refining processes because of their chemical stability, non-flammability, and electrical insulating properties. The EPA has determined that PCBs are carcinogenic to animals, and can be transferred through the food chain. According to some studies, workers exposed to PCBs do not have a higher risk of developing cancer. However, other studies have shown that PCBs in the environment imitate environmental estrogen, which can lead to infertility, certain types of reproductive cancers, and other hormone-related disorders.28 Commercial production of PCBs in the U.S. ended in 1979.

Benzene

Benzene, a volatile organic compound of crude oil, can impact humans through outdoor air and in the workplace. The EPA has listed benzene as a human carcinogen. Benzene is known to cause leukemia and may also cause embryotoxicity, fetotoxicity, and/or birth defects. It may severely impact both female and male reproductive systems. Benzene can also depress production of red and white blood cells, and in some cases has caused fatal aplastic anemia.29 A recent report on the petroleum industry estimated that "238,000 people are occupationally exposed to benzene in petroleum refineries and other operations."30 According to public records, refineries in Contra Costa County, California, release close to sixty tons of benzene annually.31

Table 2 (cont'd)

Chemical Compounds Associated with Oil Harmful to Human Health

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Hydrochloric Acid

    Hydrochloric acid (HCL), containing sulfuric acid, is an acidic compound used in the acidizing (activation) of petroleum wells. It can cause lung scarring if inhaled and will burn through the skin at concentrations as low as 35 percent. It may also corrode metal at certain concentrations. If ingested, the acid can cause circulatory failures, severe digestive tract burns, vomiting, and death. Repeated exposure can lead to dermatitis, erosion of teeth, and conjunctivitis. California has classified HCL as a carcinogen; however, it is not listed under the RCRA and is not banned from land disposal.

Dioxin

    Dioxin may be transmitted to humans through water, air, and the food chain. Intake of this chemical may cause cancer, decreased sperm count, decreased immunity, lowered testosterone levels, slow learning, altered glucose tolerance, decreased testes size, and endometriosis.32

Toluene

    Toluene is a clear, sweet-smelling liquid that is a natural component of crude oil. It is an extremely hazardous chemical that contributes to soil, water, and air pollution.[33] It can impair human development, especially in children and *in utero*. It has been reported to cause headaches, hearing loss, and brain damage when inhaled.[34] It may also affect the cardiovascular, digestive, respiratory, reproductive, nervous, and immune systems.

Inhalation of high levels of crude oil fumes can lead to adverse effects on the nervous and respiratory systems, causing chemical pneumonitis, a life-threatening illness, and other systemic effects.[35] A recent study found that out of 1,465 people examined from ten separate communities in Ecuador those exposed to crude oil fumes had a higher rate of spontaneous abortion, fungal infections, dermatitis, headache, and nausea.[36] Local health workers also reported a rise in birth defects, infant mortality, and skin infections.[37]

Poverty and Corruption

The promise of prosperity from oil has failed to materialize for millions of poor in oil-producing nations. Rather than leading to improvements in education, health, and income, as many government and company officials have promised, some development indicators in oil-producing nations are worsening. Despite the fact that Nigeria exports nearly 12 million barrels of oil each day, for example, almost two-thirds of Nigeria's people live below the poverty line. According to data released by Nigeria's Federal Office of Statistics, poverty more than doubled in a recent sixteen-year period: from 27 percent of the population in 1980 to 66 percent in 1996.[38]

In many countries, widespread corruption shepherds oil funds away from impoverished areas toward central cities—and into the pockets of high-ranking officials. A survey by Transparency International reveals that two-thirds of governments use means other than bribery to gain unfair business advantage in foreign, usually third world countries, and that the most corrupt industry cited after public works and arms sales is *oil*.[39]

Security Arrangements and Human Rights Abuses

Community demands for a more equitable share of oil profits, often met with government repression, have led to increasing conflict and violence in many oil-producing regions. The rapid escalation of these conflicts has led the U.S. Department of State to evaluate its potential role in mediation efforts in three "hot spots": Nigeria, Colombia, and Indonesia. It is developing a process to facilitate dialogue between U.S. businesses, local communities, and national governments, with the aim of diffusing local conflicts. The State Department has also promoted private sector agreements among multinationals on security measures that are much more sensitive to human rights (see section titled *Doing Business Differently*).

The use of abusive security forces to protect company facilities is a growing problem. As conflicts around oil development increase, companies are hiring additional military, police, and private security forces to protect facilities and personnel and to minimize costly work stoppages due to sabotage. In Ecuador, for instance, no oil project goes forward without the backing of the military.[40] Unfortunately, many of the security forces are not trained in how to deal with civilian protests. Some use their position to enforce their own agenda, which can include ethnic prejudice. In many cases, increased security presence has led to human rights abuses.

Perhaps the most notorious abuse of human rights associated with oil production is the Nigerian government's execution of the poet and environmental activist Ken Saro-Wiwa and seven colleagues in November 1995. The activists, leaders in Nigeria's Ogoniland, one of the poorest regions at the center of the country's oil activities, had sought environmental rights, fair compensation for their lands, and the clean-up of several decades of pollution by Shell Oil company. The executions followed years of government harassment of Saro-Wiwa and his colleagues, including the fabrication of murder charges, bribery of witnesses to give false testimony, imprisonment of family members, and repeated instances of torture and detainment. Human rights and environmental groups accuse Shell of being complicit in these abuses or, at the very least, of not using its extraordinary political influence on the Nigerian government to prevent the abuses. Shell denies these allegations, stating, "…we are disgusted and dismayed" by the executions of the human rights activists in Nigeria, but, "we cannot intervene in Nigeria's domestic politics."[41]

Nevertheless, the experience served as a wake-up call to management. In 1997, Shell added the Universal Declaration of Human Rights to its business principles. It now consults with human rights groups, equips its managers with a guide to human rights, and trains them to deal with such challenges.[42] Though Chevron has not grabbed as many headlines as Shell did in the Saro-Wiwa case, it too has been at the center of human rights controversies, particularly in Nigeria, where it faces a federal lawsuit for human rights violations lodged by Nigerian victims of abuse. This is discussed in more detail in the Case Studies that follow this section.

Human rights abuses have been documented in connection with other fuel sources, such as natural gas. In Burma (called Myanmar by the current military dictatorship), activists and local people charge that the government, through its military, has used forced labor to build the Yadana Natural Gas Pipeline, a joint venture of Unocal, the government, and other entities, and has not punished soldiers for burning villages, committing rape, and killing those who refused to work on the project.[43] A group of victims is now suing Unocal Corporation in federal and state court in California with the assistance of EarthRights International, a U.S. NGO.[44]

Unocal knows that there has been forced labor and other human rights abuses connected with the development of its pipeline in Burma,[45] yet the company has sought to avoid responsibility. In one statement, the company's general manager for public relations told a reporter, "We can't

be held accountable for the military any more than Starbucks in Seattle is responsible for the actions of police protecting its store from protesters."[46]

Confusingly, the company's code of conduct would appear to prohibit the practice. Two of its key operating principles state: "We will obey the law and operate in accordance of the highest ethical standards and we will expect the same from our partners, contractors, and suppliers" and "We will strive to make the community a better place to live…"

Unocal's operations in Burma may appear extreme, but there are criticisms against all the major oil companies and the good-neighbor principles they claim to champion. Lawsuits brought by overseas victims against oil companies headquartered in the United States are now more common than ever. Texaco was sued in U.S. court by thirty thousand Ecuadorian indigenous people who claimed that they had suffered health, livelihood, and cultural impacts from the company's toxic waste discharges.[47] Eleven northern Indonesian villagers filed a lawsuit in Washington against ExxonMobil for lending its earth moving equipment to Indonesian military troops that committed extra-judicial killings and buried the bodies near the company's facilities in Aceh.[48]

CASE STUDIES

The following case studies are summaries of field investigations of the overseas operations of petroleum companies headquartered in California. They describe operations in Nigeria, Ecuador, Azerbaijan, and Kazakhstan, and seek to understand actual company environment and social performance, as well as the perceptions of the company held by local residents and labor representatives. We also evaluate the role of the governments of these countries. The case studies provide valuable insight into what results when private and public frameworks for governing oil operations prove inadequate.

Nigeria*†*

Petroleum has defined Nigeria's recent history. Petroleum has supported repressive governments, and it has often compounded the misery of the millions of Nigerian citizens living in poverty. Now, in light of recent democratic reforms, it could offer a path to more sustainable and

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[†]This summary is based on the study and field research of Emeka Duruigbo, a Nigerian lawyer completing his Ph.D. in International Business Law at Golden Gate University, San Francisco, California. The full study and citations can be found on NHI's website at http://www.n-h-i.org/Publications/Pubs_pdf/Nigeria_CorpAccount.pdf.

equitable development. For this to occur, though, the practices of both government and industry must be reformed. In a country that has produced an estimated $275 billion in oil revenue since the 1970s, per capita GDP is a mere $970 in purchasing power parity-adjusted U.S. dollars. Sixty-six percent of the population lives in poverty, and life expectancy barely tops fifty-one years.[49] This tragic situation is largely attributable to the fact that Nigeria's government has long been focused on extracting oil without regard to the environmental or social costs in affected communities.

Human Rights Violations Related to Oil Activities

Royal Dutch Shell's alleged involvement in the detention and execution of Ken Saro-Wiwa, as mentioned above, is a high profile example of the deeply flawed relationship between oil corporations, the Nigerian government, and local communities. But Shell is not the only multinational corporation active in Nigeria to be linked to environmental, human rights, and labor abuses. Prominent among them is San Francisco-based Chevron Corporation, which has produced oil in the country through a joint venture with the government's Nigerian National Petroleum Corporation (NNPC). The NNPC owns 60 percent, and ChevronTexaco (whose operating base is in Warri) owns 40 percent of the joint venture, which operates twenty-five fields, covering an area of 5,180 square kilometers offshore and 2,590 square kilometers onshore.[50] Current daily production is about 420,000 barrels per day.[51] Incidents such as those described below have called Chevron's record into question:

- In May of 1994, Chevron allegedly called Nigerian police to the scene of a protest in which villagers attempted to blockade Chevron's facilities at Opuekebo in Delta State by tying sixteen fishing boats together. The police rammed the blockade with a barge, sinking all sixteen boats and killing three of the protesters.

- On January 4, 1999, Chevron allegedly aided the Nigerian military in an attack on the villages of Opia and Ikenyan in Delta State, where villagers had demanded compensation for oil-related environmental damage. Hundreds of homes burned, and at least four people were killed. Chevron is alleged to have requested the military intervention and to have provided helicopters and boats, with pilots and crew, to transport the Nigerian forces and company's own security personnel to the villages.

Chevron denies allegations of wrongdoing in all three incidents, claiming it only defended its property. The company lays blame for violence on the Nigerian military. While the specifics remain in dispute, a pattern has emerged: the Nigerian government, which under Nigerian law owns all minerals in the country, grants Chevron and other companies rights for

exploration and extraction, in partnership with the state, without the input or consent of local communities. These communities already feel marginalized and have no voice in government affairs. When these communities object to the damage caused from oil operations, they are often ignored or violently silenced. One such incident, for which Chevron is defending a lawsuit in U.S. federal court in San Francisco, is the following.

In 1998, a group of Ilaje villagers occupied Chevron's Parabe platform. According to Bola Oyimbo, one of the protest's leaders, the protesters were demanding to speak with the managing director about requests for potable water, greater local employment, medical facilities, and the fulfillment of pledges made by Chevron to provide scholarships to local students. Chevron had declined two earlier requests for a meeting. After a series of negotiations, the protesters agreed to vacate the platform in return for a meeting with Chevron's community relations manager. However, before the protesters could leave the platform, "choppers with military men, soldiers, and mobile police" arrived. The following is Oyimbo's recount of what happened:

> *"They started shooting before they even landed, started shooting indiscriminately…The end result was that we lost two of our boys and a lot of them got injured…Some of them jumped overboard and they were later rescued. Then the balance of us, we refused to [leave the barge]. Personally, I refused to go because if you can kill two why not add me? So they decided to arrest eleven of us. We were first taken to a Nigerian naval base at Warri. We were kept for four days in a cell. Then they transferred us to another cell [in a different town] before taking us to the state security service at the Fort of Ortacuri where we were detained for days before being released again. Chevron…first accused us of sabotage. And then later, I don't know if they induced the police but [Chevron] asked them to make me sign [a statement] that we destroyed their chopper, vandalized their equipment—which was a lie. [Then] I was hanged up by the handcuffs on my wrists on the hook on the ceiling fan. They asked me to sign a statement that I led a team to the Parabe platform and that we vandalized the things there…but I refused…"[52]*

Oyimbo asked his captors why they had shot at the protesters. They allegedly replied that Chevron had promised them each 10,000 Naira (approximately U.S.$100). Oyimbo claims that after he sought legal advice in the United States, Chevron offered 700,000 Naira to members of his community to not speak with lawyers.[53] Chevron is disputing its alleged role in these abuses in litigation in U.S. federal court.

Impact on Environment and Local Communities

Communities near oil operations face serious threats to their livelihoods, especially in the oil-rich Delta region. Inhabitants rely on the Delta for water, traditional medicines, fish, wood for fuel and shelter, and vital ecosystem services like stable soil and wildlife habitat. Oil production threatens these resources and services in a number of ways, the most acute of which are oil spills and "gas flaring"—the burning, as waste, of natural gas collected as a byproduct during oil extraction.

Thousands of spill incidents, involving almost 90 million gallons of crude oil, were reported between 1976 and 1988. Since this includes only those spills the companies chose to report, the total amount is likely much higher. Spills result from local sabotage of pipelines (committed by communities both to protest oil activities and to siphon oil for sale on the black market), poor infrastructure monitoring, and inability or unwillingness of oil companies to repair the leaks. They pollute groundwater, destroy agricultural lands and fisheries, and imperil human lives with the constant threat of explosions.

Gas flaring creates substantial CO_2 emissions and acid rain; in many parts of the Delta, even rainwater is undrinkable. Malnutrition, respiratory disorders, and cancer are some of the many side effects attributable to oil pollution.

Pollution from oil facilities is unchecked because environmental standards and regulatory practices are far from adequate. The Federal Environmental Protection Agency is under-funded. Its ability to affect oil operations, especially those undertaken by the state-run oil company, is limited. Furthermore, it competes with the Department of Petroleum Resources over control of the industry. Despite this double regulation, companies often complete environmental impact assessments only perfunctorily or, in remote regions, not at all.

Chevron's Response

Local community leaders and foreign observers have implicated Chevron in the environmentally harmful practices outlined above. They report a persistent disregard for environmental standards, citing a lack of communication with local communities, inadequate or nonexistent Environmental Impact Assessments (EIAs), slow response to spills and leaks, and evasions of liability. Chevron disputes this characterization, and it is difficult, if not impossible, to determine where the truth lies. The company makes few of its official policies and operating standards known to local communities or outside observers. Amid weak government enforcement, lack of public access to legal and environmental knowledge,

and a general lack of transparency, community members believe that Chevron operates in an environment of *de facto* unaccountability.

Critics also claim that attempts by the company to address the concerns of local communities have been sporadic and misguided. Chevron asserts that it has spent large sums annually on community development, yet local communities report that these efforts sometimes serve little purpose apart from public relations. Often the money is given to local leaders with the knowledge that the funds will never be used as promised but are simply bribes to keep local power brokers satisfied. Not only does this approach institutionalize corruption, it deprives local communities—whose traditional modes of subsistence have been destroyed by oil pollution and whose support from the government is almost nonexistent—of their last remaining means of survival.

Conclusions

Many of the participants in this case study share the belief that communities in oil-producing regions will never achieve adequate living conditions until they are granted ownership of local resources. Some measure of ownership in local resources would give the communities more power in determining where oil operations should be sited and how they will be operated, as well as increased economic benefit from extraction. This is unlikely to happen anytime soon. In the meantime, it remains with the government to improve its record on human rights and environmental protection, and with companies such as Chevron to make basic operational reforms to reduce pollution and the risk of explosions, end its complicity in government violence, and deal in a more open and honest manner with local communities.

Companies like Chevron can and should forge stronger partnerships with the Delta community and the federal government to fashion an alternative economic base where traditional fishing and farming has been destroyed by oil operations. They should open their activities to the scrutiny of independent assessors. We recommend how policymakers can encourage better practices at the end of this chapter. Taken together, they could make oil production—which has largely created wealth for a few and misery for many—a more positive force in Nigerian development.

The Caspian: Azerbaijan and Kazakhstan*†*

As described previously in this chapter, an oil boom is underway in the newly independent Caspian nations of Azerbaijan and Kazakhstan. Oil development brings the hope of prosperity to the region's residents. However, local activists are concerned about significant risks to the environment and to the health and well-being of local communities. The delicate Caspian ecosystem, already stressed by a Soviet legacy of pollution, remains inadequately protected under current environmental laws. Existing environmental protections are only feebly enforced, if at all.[54] Local spills are common, and many feel that the possibility of a major spill, with potentially catastrophic ecological and socio-economic consequences, is large.

In addition, critics fear that rather than strengthen democratic reform, oil development in the region will reinforce tendencies toward corruption and authoritarianism. According to the U.S. State Department's annual human rights reports, the region's new governments, though ostensibly democratic, still falter in their respect for human rights and the rule of law.[55] The lure of massive oil revenue could further strain not only the environment, but also delicate political balances.

Multinational Oil Companies in the Region: Unocal and Chevron

Multinational oil corporations are central to the development of oil resources in the Caspian. Through partnerships with governments, they provide the investment necessary to bring Caspian oil to global markets. Given the social and ecological implications of these partnerships, many observers contend that for oil development to proceed in a responsible and ecologically sustainable fashion, governments and oil corporations must be held to high standards of accountability. There is concern that such accountability is lacking, and that, as Caspian oil development intensifies in the coming years, the public will be increasingly excluded from participating in decisions that affect their well-being. CAP's investigation of this region focuses on two California-based corporations: Unocal and Chevron.

Unocal and Chevron are at the forefront of petroleum development in both Azerbaijan and Kazakhstan. In Azerbaijan, a consortium of oil companies led by BP/Amoco (and including, among others, Unocal) is developing a project expected to yield three to five billion barrels over thirty years. Called "the deal of the century," it has been succeeded by

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[†] This summary is based on field research by Pamela Sumner-Coffey, J.D. The complete study with citations can be found on NHI's website at http://www.n-hi.org/Publications/Pubs_pdf/Caspian_CorpAccountability.pdf.

several other major contracts, including an agreement allowing a Chevron-led consortium to explore off Azerbaijan's Apsheron Peninsula. In Kazakhstan, Chevron operates through Tengizchevroil, a joint venture with the Kazakh government . Established in 1993, Tengizchevroil is now the biggest oil producer in the country, pumping over three hundred thousand barrels per day from the Tengiz field on the Caspian's eastern shore. These huge operations are only the beginning.

Multinational partnerships with Caspian nations are governed by contracts known as Production Sharing Agreements (PSAs). PSAs are negotiated largely in secret. Local communities, labor unions, NGOs, and other stakeholders have no role in their negotiations, and have limited access to the agreements even after they are signed. The Azeri and Kazakh governments have not responded to requests for transparency. Corporations have generally refused to disclose the contents of PSAs on the grounds that such disclosures should be made by the government. As a result, environmental and other standards established by the agreements remain closed to public scrutiny.

Many are concerned that lack of transparency could lead to a lack of accountability. Representatives of both Unocal and Chevron assert that their operations in Azerbaijan and Kazakhstan are governed by standards enumerated in the PSAs, and that these standards conform to unspecified "international oil industry standards," (discussed below) which they suggest are protective of environmental assets. Given the potential harms to food sources and local economies posed by oil extraction, many community leaders and local NGOs feel that these standards should be public knowledge.

Environmental Oversight

Critics advocate strongly around disclosure of standards in part because many feel that federal regulatory oversight in both countries is inadequate. Local groups believe that Azerbaijan's principal environmental regulator, the State Committee on the Environment, is largely ineffective in many areas. Foreign oil companies support the claim. Many believe that the committee is also limited in its operation by the influence of Socar, the Azeri state oil company. They charge that the company is corrupt and has no interest in protecting the environment.

Oil company representatives have said that Kazakhstan's regulatory system is more developed than Azerbaijan's, but they acknowledge that effective third party monitoring does not exist in either country. Environmental groups point to disturbing developments in the Caspian Sea, where the Kazakh government recently removed the protected status for an area that an oil consortium sought to explore. The

government allowed the exploration to begin before a national oil spill response plan had been completed.

In both countries, acquiescent and/or corrupt regulators have largely given foreign companies a free hand to determine policies and standards. Although these companies have taken steps toward filling the regulatory void with voluntary action, many observers feel that more needs to be done to avoid the environmental disturbance that has plagued other oil-producing regions.

Human Rights and Community Development

Concerns about the impact of oil development on human rights and community development are based on reports that public understanding of—and government respect for—these matters is low in both countries. According to the U.S. State Department, the elections that returned Azeri president Heydar Aliyev and Kazakh president Nursultan Nazarbayev to power were problematic. Both governments have been found to harass independent media and political opponents, and both have been accused of governing via corrupt bureaucracies that ignore the needs of local communities.[56] Activists worry that oil profits could line the pockets of corrupt officials rather than benefiting all citizens, reinforcing a system of environmental decline and rural poverty.

Both Unocal and Chevron have undertaken some community development efforts. They have mounted environmental public awareness campaigns, supported education through grants, and provided assistance to local infrastructure projects. While grateful, some local leaders feel the companies are inconsistent in their commitment to community development, preferring periodic high profile donations to consistent support. In addition, they claim that the companies continue to deal only with the central government on matters that most significantly affect local communities.

Labor Issues

Similar patterns of inadequate government oversight emerge in relation to the region's labor issues. In Azerbaijan, the only legal oil workers' union is state-run; it offers workers little real protection, and most employees of foreign oil companies are not members. New labor laws make it difficult to strike, while a corrupt judiciary effectively prevents workers from using the courts to seek redress for grievances.

In Kazakhstan, independent oil worker unions are now allowed, and the overall labor situation appears to be improving. Some labor leaders, however, accuse Tengizchevroil of violating labor laws pertaining to

dismissal. The company denies this claim and points to court victories against workers who struck in protest when a colleague was fired. Labor advocates in both countries agree that working conditions and pay at Unocal and Chevron/Tengizchevroil are superior to what state-run companies offer, but that job security is much lower. They believe the foreign companies prefer to hire non-union workers and discourage union activity. Representatives of the companies dispute this claim, but acknowledge most of their workers probably do not belong to a union.

Conclusions

A distressing pattern, one that has characterized oil development in many other oil-producing regions, could be taking hold in the Caspian. Joint ventures between foreign companies and the government generate revenue, which may feed corruption. This, in turn, retards attempts within and outside of government to reform irresponsible practices. With no strong, governmental voice for reform, foreign companies feel no pressure to improve their performance. This cycle opens the door for escalating environmental destruction and human rights abuses. Advocates claim that in order for Caspian oil development to proceed in a responsible manner, this pattern must change. They believe such change cannot wait for the slow march of democratization in government, but must begin with the multinational companies themselves.

The Caspian represents an opportunity for multinational oil companies to raise the bar for industry standards for human rights, labor, and environmental protection, as well as community health and development, worldwide. Community leaders and NGO representatives generally agree that a first step could be for multinational oil corporations involved in the Caspian's new oil boom to take the demands of non-governmental stakeholders seriously, particularly by allowing more transparent and effective public participation in environmental and economic decisions affecting these communities.

Ecuador*†*

With its operations in Ecuador, Peru, and Colombia, Occidental Oil and Gas Corporation is the largest U.S.-based producer of crude oil in Latin America. Occidental's Ecuadorian subsidiary, Occidental Exploration and

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† This summary is based on field and academic research and publications by Judith Kimerling. Ms. Kimerling is the author of Amazon Crude and an Assistant Professor of Law and Political Science at The City College of New York, Queens College and School of Law. Full citations for information presented here can be found in Kimerling's article "International Standards in Ecuador's Amazon Oil Fields: The Privatization of Environmental Law," *Columbia Journal of Environmental Law*, Vol. 26, No. 2, 2001.

Production Company, signed a contract with Ecuador's national oil company, CEPE, now PetroEcuador, granting Occidental the exclusive rights to oil exploration in the Ecuadorian Amazon. The designated area, referred to as Block 15, comprises 200,000 hectares in the northeastern corner of Ecuador and crosses two major rivers, the Napo and the Aguarico. This area also includes various indigenous communities and several protected Reserves, some of which have been titled to the Quichua communities that live on the Napo, others to the Secoya and Siona communities that occupy parts of the Aguarico. Block 15 also includes several natural areas protected under Ecuadorian law: the entire Limoncocha Biological Reserve and parts of the Yasuni National Forest, Cuyabeno Wildlife Reserve, and the Panacocha Protected Forest.

Occidental declared Block 15 commercially viable in 1992, and the government authorized the company to begin extraction activities three weeks later. Production began in 1993. Through a final contract signed by Occidental and the government, through PetroEcuador, the company has exclusive rights to operate the existing production facilities until 2012 and to find, develop, and operate subsequent discoveries until 2019. According to Gas & Oil Journal, Occidental estimates Block 15's total potential at 300–400 million barrels.

Currently, Occidental produces some eighteen thousand barrels of oil a day from twenty-two production wells located on six drilling platforms. According to Occidental's 1992 Environmental Impact Assessment (EIA), the company operates twenty-two miles of buried pipelines, including two that pass under the Napo River. Occidental's Central Production Facility (CPF) and its production and induction wells are located in four Quichua communities.

Environmental Performance

Occidental claims that its operation in Block 15 incorporates the highest level of environmental standards. In its contract with the government, Occidental promised to go above and beyond industry international standards and best practices. In 1996, the Houston Chronicle reported that Block 15 "seems a model of how oil can be extracted in environmentally sensitive areas of the tropics."[57] In 1997, Oil & Gas Journal reported that Occidental "has implemented a comprehensive strategy of strict environmental protection measures and aggressive community relations initiatives."[58]

However, information available to the public is extremely limited, leaving those outside the company with few means to independently verify claims of environmental performance. Although the company did send CAP a list of some standards after publication of the field investigator's report, local

people remain largely unable to obtain this information and know relatively little about the company's policies.

In 1996, Occidental became the first company operating in Ecuador to obtain certification under ISO 14001. The ISO 14001 guidelines, developed by the International Standards Organization, serve as a private international standard designed to help corporations define and maintain environmental policies. While the guidelines could be a useful tool for the company's internal management, they do not provide a set of measurable performance standards, nor do they provide the public and affected communities with information about the company's actual performance.

Environmental Management Plan

Occidental's Environmental Management Plan (EMP), which the company was required to prepare before commencing production in Ecuador, was filed in 1992. Under Ecuadorian law, environmental management plans identify the precise measures and practices that will be used to prevent and mitigate impacts.[59] The EMP describes how the company will maintain certain sensitive issues of oil production. In it, the company pledges to locate production far from population centers, to drill directional wells, to re-inject formation waters, to use impermeable pits for drilling mud, to bury flow lines, and to limit the width of roads.

A review of the document by the field investigator, though, found that Occidental is given considerable discretion to interpret its own compliance with the EMP, and the EMP does not specify how Occidental's environmental performance is to be verified.

Some are concerned that the lack of specific language in the EMP could leave nearly any area within the block vulnerable to disruption from exploration or drilling activities. Indeed, there are signs that this disruption may already have occurred. For example, the company planned to develop an area within the Limoncocha Biological Reserve, which is located on a floodplain near the Napo River and Lake Limoncocha. When the company drilled its first exploratory well in the area, the site became flooded with water. The field investigator learned through interviews with local residents that residents encountered floating drums and other chemical containers discarded in the swamp. Environmental samples later taken by Occidental in the area revealed the presence of heavy metals, including arsenic, barium, cobalt, copper, lead, nickel, and zinc, all of which can be associated with oil drilling. The company continues to locate new production wells, pipelines, and roads in the reserve.

Community Relations and Land Acquisitions

The process of accessing and acquiring lands for oil activities is a sensitive topic for local communities. Occidental's contract with the Ecuadorian government establishes a land access and acquisition process whereby the government expropriates lands that the company wants to use for oil operations. Their contract provides that PetroEcuador must "solicit and obtain from MEM (Ministry of Energy and Mines) in a timely manner, upon petition from [Occidental]... the expropriation in favor of PetroEcuador, of lands...that may be needed to carry out the obligations" of the company under the contract. This process does not appear to be well understood by local communities. The investigator found that residents of one community, Rio Jivino, thought they were selling their lands to Occidental, when in fact the company had solicited the expropriation of the land in favor of PetroEcuador. The expropriation had taken place without the knowledge of local indigenous people; many community members only discovered this fact upon the visit of the field investigator.[60] This has led some community members and activists to mistrust the company.

Contributing to this, the EMP states that sites should be located "far from populations," yet the EIA does not disclose precisely where production facilities are located in relation to local communities, nor does it include complete information as to where people live and where they access important natural resources. A visit to Block 15 by the field investigator found that many facilities were located near the local population.[61]

Conclusions

Concerns over issues such as land acquisition, community relations, and lack of information regarding the EMP standards and Occidental's on-the-ground practices has led to criticism of the company's implementation of its global principles, at least in the case of their operations in Ecuador. Some local residents have expressed bitterness about what they see as the company's insensitivity to the cultural rights of indigenous peoples living in Block 15, and it is unclear whether the company takes their concerns and demands seriously.

THE GOVERNANCE DILEMMA

Multinational oil companies have developed elaborate codes and global principles that espouse the rules they will follow in their global operations, particularly in the face of inadequate government regulation at the national and international levels. Codes cannot play the same role as government regulation for monitoring, verification, reporting, and

compliance/ enforcement, but they can still benefit the environment and human rights in the hundreds of countries where multinational oil companies operate. Where companies do implement their codes, the crucial question remains: in the field, are these codes and other principles applied or ignored? Because the industry is generally not forthcoming with information about its operations and compliance with codes, it is currently difficult—if not impossible—to present an accurate answer.

Governance at the International and National Levels

U.S.-based companies operating overseas assert that, notwithstanding the standards they follow in the U.S., it is the standards and laws in the country where they operate that govern their facilities. International law prescribes that national law is paramount, particularly since there is no legally binding set of international standards. International law is relatively new in the field of oil development, and the treaties that do govern this industry relate to general international issues presented by oil, such as transport of oil on the high seas and potential ocean pollution from offshore oil rigs. Even these treaties defer to national legal systems to enforce their provisions.

In the last twenty years, information on environmental standards applied in developed countries has spread to developing countries. Many emerging democracies and newly industrialized countries have adopted regulations based on western standards, with the idea that western states have more experience in regulating the oil industry to protect the environment. Yet regulatory oversight remains weak for a number of reasons.

First, the environment agencies in many developing countries have inadequate resources and technical support to carry out their mandates: auditing and monitoring oil facility compliance with national regulations, and enforcing emissions standards. Newly formed environment agencies often lack the training to effectively enforce new, sophisticated regulations or to design mechanisms to improve compliance. In addition, the regulatory approach of the U.S. and other industrialized countries does not always adequately protect the environment, human health, or human rights in those countries. Therefore, developing country guidelines based on U.S. or other western country regulations will not necessarily guarantee the desired level of protection.

Second, in countries such as Nigeria, where oil exports provide the majority of national revenues, ministries that govern the environment are at a disadvantage compared to the ministries that govern energy generally or oil development specifically. In CAP's investigations, we

consistently found that the agencies responsible for oil development wield enormous power over the regulation of oil operations by virtue of their need to produce revenues. Environmental agencies often have little or no authority to modify the permits issued to oil companies by the energy ministry or oil development agencies. Enforcing environmental regulations is also more difficult where the government views oil production as a national security issue. The environment agency may not have authority to enforce environmental standards in oil operations, or may be discouraged from doing so by the more influential oil development agency. During CAP's field investigations, environmental officials in both Nigeria and Ecuador recognized this situation as a limitation to their ability to protect the environment.

Third, a system for encouraging effective public participation in oil permitting decisions is lacking in many developing countries. Those living around oil operations complain that they are not given an opportunity to evaluate proposals for new oil development, and that the government hand-picks the groups it wants to participate in hearings on environmental impact assessments of projects. Local people assert that decisions are made by the oil development agencies without much public input, including from those whose lands would be expropriated for exploration or drilling. In many cases, local land rights do not include subsoil rights. These are retained by the government.

Finally, government oversight of multinational oil company activities in developing countries is often weakened by government corruption, officially sanctioned harassment and abuse of environmental and human rights defenders, and limitations on independent labor organizations. Yet, corruption is fueled by companies on the *supply side* that participate in these irregular official payments.

Given these realities, there has been pressure for the oil industry to become more responsible for preventing environmental damage and providing more local benefits, and for home and host countries to exercise more oversight. This section discusses some of the voluntary initiatives and codes that companies, industry, and intergovernmental organizations have devised in response to these problems.

Private Voluntary Initiatives

Awareness about corporate environmental responsibility began at least two decades ago, when companies started adopting campaigns and designing codes of conduct around environmental issues that pertained to their business. Companies now routinely hire health, safety, and environment (HSE) personnel to run large-scale programs. Chevron was

one of the first to take some of these steps. Recently, companies have sought to broaden their scope of responsibility, declaring commitments not only to more environmentally sensitive programs, but also to the human rights and labor issues surrounding their operations overseas.

Many companies advertise themselves as private sector conservationists and "good neighbors" working with community groups to protect the environment and local people. In a recent effort to promote its sensitivity to human rights issues related to oil development, Shell Oil Company ran a two-page ad in The Economist touting its commitment to human rights. The ad begins:

NONE OF OUR BUSINESS?
OR THE HEART OF OUR BUSINESS?

Human Rights. It's not the usual business priority. And for multinational companies operating in developing countries, it could be tempting to dismiss it; to call it a socio-political issue rather than a business one, and hope it just goes away.

The ad concludes:

At Shell, we are committed to support fundamental human rights and have made this commitment in our published statement of General Business Principles. It begins with our own people, respecting their rights as employees wherever they work in the world. We invest in the communities around us to create new opportunities and growth. And we've also spoken out on the rights of individuals—even if the situation has been beyond our control. It's part of our commitment to sustainable development, balancing economic progress with environmental care and social responsibility. In today's business environment, we don't pretend there are any easy answers, but we continue to stay involved. Because making a living begins with respecting life.

Campaigns such as this one are generally in response to adverse publicity about pollution incidents, such as leaks and spills, or other environmental or human rights issues. Sometimes companies try to establish their reputations proactively—before they have become the targets of negative publicity, while others are responding to increasing interest by shareholders.

NGO and consumer campaigns against these companies can threaten not only company image but also future profits. For multinational oil companies, these profits are large: Chevron's revenues for 2000 totaled some $52 billion. The company's oil production in the Caspian region is expected to increase from 260,000 barrels per day to over 700,000.

However, ChevronTexaco's partnership with Caspian governments could come under fire as the U.S. State Department and others have expressed concern over human rights violations in the region.

An incident related to Occidental Petroleum's oil operations in Colombia serves as a potent example of how public campaigns or shareholder concerns can affect oil company operations and, potentially, profit. In 1992, the U'wa peoples threatened to commit communal suicide by throwing themselves off the four hundred foot "Cliff of Death" should Occidental begin exploration and drilling in and around their villages in the northeastern foothills of Colombia.[62] Human rights and environmental groups campaigned for a proxy vote from shareholders as to whether Occidental should be required to hire an independent firm to write and distribute a risk analysis on the impact, including a decline in stock price, should the U'wa carry out their threat. Thirteen percent of the shares voted in favor of the resolution—an impressive number compared to other shareholder resolution efforts.[63] Just recently, the company decided to give up this contract.[64]

Codes of Conduct

Most oil companies and oil industry associations, such as the American Petroleum Institute (API), have extensive internal operating policies and codes of conduct. The companies list these on their websites as business codes or principles for social responsibility. Many of the codes are quite similar in scope and content and virtually all declare laudable goals that, if implemented as advertised, would indeed better protect people and their resources. The strongest criticism of these codes is that companies are essentially unaccountable to any group, community, or government for their implementation and enforcement. In general, the companies have not adopted, or at least not made public, benchmarks for performance or other measurable standards. Companies have generally kept their performance records secret, and have not widely used independent external monitors. Even if independent external monitors are used, companies do not often make the results of audits public information.

Table 3 provides samples of the language used by three California-based multinational oil companies and the API in their codes of conduct. CAP gathered these samples through a literature review in 2000-2001.

Table 3
Excerpts from Company Codes of Conduct

	CHEVRON San Francisco, CA	**OCCIDENTAL** Los Angeles, CA	**UNOCAL** El Segundo, CA	**API** Washington, D.C.
GENERAL	Our Code of Business Conduct provides clear guidelines and standards that all Company employees must follow. The Code...must also be followed by the Company's agents and representatives, including consultants. In many instances...the Code of Conduct goes beyond the requirements of law.	Occidental's policies to address environmental protection and worker health and safety were first developed and implemented more than 20 years ago. This long-standing commitment to protecting community, employee, and contractor health and safety, and the environment is regularly reviewed and updated.	Unocal's vision is to improve the lives of people wherever we work. Fundamental to this is the management of risk— to human life, the environment, our operations, and our business. At Unocal, we are addressing this critical issue... through the Operations Management System (OMS) now implemented in all our business units.	API commits to a program of continuous health, safety, and environmental improvements, to provide security and peace of mind to our workers, our customers, and our neighbors around the world, and to leave a better world for our children.[65]
WORKPLACE ISSUES	Safety is everyone's responsibility. We will design, operate, and maintain our facilities to prevent injury.... Manage potential risks of our products with everyone involved throughout the product's lifecycle.	Include a management system designed to maintain compliance with all applicable health, safety, and environmental laws and regulations. Verify compliance through self-monitoring programs and regular facility assessments.	We will provide a safe and secure working environment... provide access to healthcare for our employees and their families, and, as appropriate, help neighboring communities meet basic public health needs...seek a diverse base of employees and ensure equal opportunity... ensure that a significant percentage of our employees, managers, contractors, and suppliers in international operations are citizens of the host country.	API is committed to providing an ever-safer working environment for our employees. Data from the government's Bureau of Labor and Statistics (BLS) show we're succeeding. Between 1990 and 1999, the number of petroleum industry work-related injuries or illnesses per 100 employees dropped by 31 percent.[66] API's health and safety programs promote safety and accident prevention...

Table 3 (cont'd)
Excerpts from Company Codes of Conduct

	CHEVRON San Francisco, CA	OCCIDENTAL Los Angeles, CA	UNOCAL El Segundo, CA	API Washington, D.C.
HUMAN RIGHTS	Chevron supports the Sullivan Principles, whose objectives are to support economic, political, and social justice by companies where they do business; to support human rights and encourage equal opportunity... including racial and gender diversity...; to train and advance disadvantaged workers; and to assist with greater understanding and tolerance among peoples.	Occidental Petroleum supports the Sullivan Principles. Occidental commits to implementing policies, procedures, training, and internal reporting structures to ensure commitment to the principles, which are intended to advance tolerance, international understanding, and a culture of peace.	Unocal supports the Universal Declaration of Human Rights. We are committed to meeting the highest ethical standards in all our operations, whether at home or abroad. This includes treating everyone fairly and with respect, maintaining a safe and healthy workplace, and improving the quality of life wherever we do business.	API believes the U.S. government should re-evaluate the role of sanctions that restrict trade and investment by U.S. companies in nations believed guilty of terrorism and human rights violations. More sensible policies can better serve our national security, economic goals, and human rights.[67]
ENVIRONMENT	We are committed to protecting the safety and health of people and the environment. Our goal is to be...recognized worldwide for environmental excellence; continually improve our processes to minimize pollution and waste; conserve company and natural resources by continually improving our processes and measuring our progress; and assess and manage environmental liabilities prior to any property transaction...	Protection of health, environment, and safety (HES) is one of our highest priorities. The HES recognizes... the world's natural resources are finite and should be conserved and developed wisely; and environmental protection is good for the community and is good business...[We will] correct or discontinue any participation in any activity that poses an unacceptable environmental impact.	We will develop natural resources and provide energy in an efficient and environmentally responsible manner.	We are dedicated to continuous efforts to improve the compatibility of our operations with the environment...API has created an Environmental Stewardship Program to facilitate information sharing and foster continuous improvement.[68] New technologies enable our industry to be more productive while decreasing our environmental impact.

International Standards: UNEP / Industry Guidelines

Many companies say they follow international standards. While binding international standards are rare and largely do not apply to onshore facilities, companies often cite *voluntary* guidelines developed by intergovernmental institutions—those whose members are governments—such as the World Bank or (with the private sector) the United Nations Environment Programme (UNEP).

UNEP's Industry and Environment Center joined with the oil industry's Exploration and Production Forum (E&P Forum)[69] to develop environmental management guidelines for the exploration and production of oil and gas, at both onshore and offshore sites. The guidelines are comprehensive in that they cover each phase of exploration and production. The approach differs from the regulatory structure applicable in the United States, which prescribes detailed measures according to potential environmental impacts. These international guidelines still provide laudable goals, such as prevention of water and air pollution. They also provide general lists of environmental protection measures that should be taken when preparing a drilling site, including the use of improved technologies and evaluation of sensitive ecosystems before siting decisions are made.

The voluntary nature of these international guidelines are often not understood by local authorities or communities, and there is some ambiguity about their application in the context of domestic laws. First, the guidelines express that local and national laws take precedence over measures proposed under the guidelines. It is therefore uncertain whether and how companies or local officials could apply these standards at the same time as differing national standards.

Second, the guidelines largely comprise general statements and goals, without specifics about how they might be accomplished,[70] making it difficult to evaluate whether a company is engaging in effective environmental protection. In the U.S., regulations of oil operations provide significant detail about the performance expected from a facility, such as the exact level of discharge of particular constituents into the ambient air and water. This allows officials and the public to determine whether and to what extent the operations comply with the law. The lack of similar detailed performance expectations by the UNEP/Industry guidelines hinders accurate benchmarking.[71]

Thus, the UNEP/Industry and similar international guidelines are meant to provide guidance about measures that companies could take to improve environmental performance; they cannot serve as a replacement for local environmental regulation.

THE CALIFORNIA EXPERIENCE[†]

California makes up the fifth largest economy in the world and is poised to continue growing. It has some of the most far-reaching and technical regulations governing the oil industry and oil pollution in the U.S., if not the world. The regulatory system, from performance measures and public participation requirements to enforcement oversight, is extremely sophisticated and has much to offer other regulatory systems overseas. In *Doing Business Differently* we identify recommendations for the oil sector that include provisions directly out of some of the most progressive state laws/policies. Yet, having said this, California's regulatory system still contains flaws that pose serious challenges to the public, affected communities, and government. California remains one of the most polluted states in the U.S.[72] It ranks in the top ten states for companies failing to report their harmful emissions,[73] making it difficult to accurately quantify pollution levels.

California's oil industry has come under fire as one of the primary causes of the state's pollution problems. The industry is still growing: California's 3,750 million barrels of reserves account for 16.6 percent of the entire nation's reserves, third after Texas and Alaska.[74] Yet its revenues are not the most important for the state, accounting for 6 billion of the state's total gross product of more than $1 trillion.[75] Despite newer technologies and increased regulatory oversight over the last two decades, critics complain that California oil companies are not winning marks as industry leaders in protecting people or the environment.

This section of the chapter is meant to provide insight into how the oil industry is regulated here, in one of the most industrialized countries in the world, as a backdrop to the following sections addressing key models for reform and recommended policies. More specifically, this section looks at the California regulatory landscape and at selected corporate accountability practices of oil companies in their home state in order to provide comparison with overseas operations.

Governance of the Industry in California

California has a sophisticated regulatory structure for all stages of oil production. Approximately thirty-five federal and state statutes and numerous local ordinances, overseen by nearly thirty agencies, govern all aspects of petroleum exploration and production activities in California[76]

[†] The California Experience case study is based on legal analysis by Michelle T. Leighton and field research conducted by Amy Israel, Emeka Duruigbo, and Firuzeh Mahmoudi, with assistance from local community members and organizations.

(Table 4). With few exceptions, exploration and production operators can be held liable for improper disposal of wastes.[77] Transportation falls under the jurisdiction of the Department of Transportation, and in some cases under the jurisdiction of the EPA. In addition, the California Environmental Quality Act[78] requires government agencies to identify any significant environmental impact resulting from their actions and prevent or, if possible, mitigate those impacts. The agencies, by law, involve the public in the decision process.

While the state agencies may lack adequate staff or resources to fully monitor and enforce state regulations, California's regulation of the oil industry stands in marked contrast to that of many developing countries. However, even under this sophisticated regulatory structure, the state still relies on corporate self-monitoring and reporting.

Table 4		
Selected Industry Regulations in California		
Act / Law / Permit / Action	Purpose	Governmental Agency
Air		
The Federal Clean Air Act (CAA)	Governs control of criteria and hazardous air pollutants [79]	Environmental Protection Agency (EPA)
The 1990 CAA Amendments	Significantly strengthened provisions relating to petroleum exploration and production activities	EPA
Permits under the federal CAA	Implementation	California Air Resources Board, a division of California Environmental Protection Agency (CalEPA)
The Toxic Air Contaminants Identification and Control Law (AB 1807) & The Air Toxics "Hot Spots" Information and Assessment Act[80]	Addresses toxic air contaminants	State Law

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<u>Table 4</u> (cont'd)

Selected Industry Regulations in California

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Act / Law / Permit / Action	Purpose	Governmental Agency
Water		
The Federal Clean Water Act (CWA)	Controls discharges or potential discharges of contaminants into surface waters[81]	EPA
The Porter-Cologne Water Pollution Control Act	Incorporates the requirements of the CWA into state law	State Water Resources Control Board (SWRCB)
The Federal Safe Drinking Water Act[82]	Regulates discharges to underground sources of drinking water or groundwater	EPA
The California Coastal Act of 1976	Regulates oil, gas, and geothermal wells in the state[83]	The Department of Gas, Oil, and Geothermal Resources (DOG), a division of the Department of Conservation
The Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)	Protects drinking water sources from specific chemicals	The Office of Environmental Health Hazard Assessment
Waste Disposal		
The Resource Conservation and Recovery Act (RCRA)	Controls the disposal of hazardous and non-hazardous solid waste[84]	Federal law by the EPA
RCRA in California	Implements the federal act	The Department of Toxic Substance Control, a division of CalEPA
The Comprehensive Environmental Response, Compensation, and Liability Act[85] (CERCLA) or Superfund	Requires clean-up of abandoned waste sites	EPA/ CalEPA
The Toxic Substances Control Act	Regulates control of all chemical substances manufactured, imported, distributed, or used for commercial purposes[86]	EPA
Oil Spills		
The Clean Water Act[87], the Oil Pollution Act[88], the California Oil Spill Prevention and Response Act, and the Emergency Planning and Community Right to Know Act,[89] the Superfund Act Reauthorization Amendments of 1990	Requires spill reporting and response planning	EPA / CalEPA / The Department of Toxic Substance Control / SWRCB

Health and Environmental Impacts of the Oil Industry in California

Though highly regulated, oil production and refinement in California still present significant environmental and health hazards. Production and refinement activities are primary sources of air pollution[90] and smog, particularly of volatile organic compounds (VOCs). According to EPA's Aerometric Information Retrieval System (AIRS), oil refineries release 246,000 tons of volatile organic compounds a year via leaks that could be avoided through repairs or replacement of aging equipment.[91] And, in spite of the government's oversight, EPA inspectors report that there has been a four-fold increase in recent years nationally in underreporting of these leaks by refineries.[92]

The health impacts to California residents and workers can be serious. Smog inhalation from VOC releases can result in an array of respiratory problems including decreased lung function, respiratory system irritation, and asthma.[93] Refiners also emit nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter (PM), and methane, which can lead to headaches, chest pains, lung damage, and cancer.[94] Emissions and other discharges of benzene, xylenes, methyl ethyl ketone, ethylbenzene, 2,2,4-trimethypentane, hexane, cresols, naphthalene, dioxin, and phenols can cause cancer, neurotoxicity, or reproductive toxicity.[95] When fires or explosions occur at refineries, these pollutants become airborne at exponentially higher rates and can cause acute illnesses.

The integrity of California's land and water systems is also threatened by petroleum operations. Oil is transported mainly though waterways. Leaks and spills from cargo ships, pipelines, and storage tanks can contaminate oceans, reservoirs, rivers, and beaches.[96] Some of California's oil exploration is done onshore, where leaks can contaminate groundwater, while offshore drilling exposes wildlife to the threat of oil spills, which can decimate their populations. NO_x and SO_2, common emissions from refineries, are the primary components in the formation of acid rain.[97]

Refineries are primarily located in the San Francisco Bay Area, Los Angeles, and the Central Valley,[98] in low-income communities of color or migrant communities. The higher risk of illness and disease for these communities associated with toxic releases presents an issue of environmental justice.[99] The community of Wilmington, a southern California town of fifty thousand Spanish-speaking residents and the site of four refineries that collectively emit 2.1 million pounds of pollutants annually, is an example.[100]

In interviews with CAP researchers,[101] Wilmington residents and community groups relayed the following concerns about the effects of refineries sited near their homes. Air quality in the area is often poor, ranging from smoke in the streets to dark smoke clouds indoors. At night, bad odors, flaring, and noise are problematic for residents. Major explosions have caused evacuation. According to residents, there is generally one major explosion from one of the facilities every year (excluding ARCO, which has not had a major explosion since the 1950s).

Community groups are seeking redress from the companies, but have so far been unsuccessful in their attempts to establish dialogue with representatives of the refineries.[102] They are now pressuring the companies through protests, complaints to state and local leaders, and through media coverage. The community is also seeking more information about company practices and the health and environmental impacts of its operations.

Performance of California Companies

This section presents examples of the key environmental and social issues related to California-based oil companies ChevronTexaco, ARCO (owned by BP/Amoco), Occidental Petroleum, and Unocal.[103] It does not attempt to discuss all issues related to these companies' various operations and activities.

ChevronTexaco

ChevronTexaco, one of the largest oil producers and refiners in the world and the second largest U.S. oil company after ExxonMobil, has operations or joint ventures in 180 countries. Before Chevron's $100 billion merger with Texaco, it employed approximately twenty-eight thousand people and its 1999 net income was up 55 percent from 1998 to $2.07 billion. Worldwide production had increased to a record 1.13 million barrels per day, and oil and gas reserve additions exceeded production for the seventh straight year. With the merger, ChevronTexaco is a fully integrated company, operating in oil exploration, production, transporation, refining, retail marketing, and chemicals manufacturing. It now employs 53,000, has reserves of 11.5 billion barrels of oil and gas equivalent, and has a daily production of 2.7 million barrels.[104] In addition, it has a global refining capacity of more than 2.2 million barrels per day and operates more than 25,000 service stations around the world. The company also has interests in forty-seven power projects now operating or being developed.

The company has exploration and production activities for crude oil and natural gas in twenty-five countries including the United States (California, Gulf of Mexico, and Texas), Angola, Nigeria, Canada, the North Sea, Australia, Indonesia, Kazakhstan, Venezuela, Republic of Congo, Thailand, China, Azerbaijan, Papua New Guinea, the North Sea, and the Middle East. In California, the company's main refineries are in Richmond and El Segundo—both communities of color.

While one national environmental group rated the company's pollution prevention strategies as mid-grade among a field of national oil companies, its record in California portrays a different image. Emissions from ChevronTexaco's Richmond refinery have been recorded at extremely high levels. In 1998, the refinery was the nation's leading airborne toxic waste producer, according to the EPA's Toxic Release Inventory.[105]

The company also leads its peers in the amount of discrepancies between reported and actual leak rates. A 1999 report by the U.S. Congressional Committee on Government Reform found: "the highest leak rate in the U.S. was detected at the Chevron refinery in Richmond, California. That refinery reported detecting leaks at only 179 out of 7,694 valves at the facility—a leak rate of only 2.3 percent. EPA monitored 3,363 valves at the facility and found leaks in 354 valves—a leak rate of 10.5 percent."[106] During an inspection by the Bay Area Air Quality District in June 1999, levels of toluene and methylethylketone at one leak were "off the meter" at five thousand parts per million, fifty times the safe level.[107]

Water pollution has also been a problem for the company. In 1988, Chevron agreed to pay a $1.5 million civil penalty to settle a lawsuit brought by the EPA that alleged Chevron had polluted Santa Monica Bay by dumping thousands of pounds of oil, grease, ammonia, and other pollutants in excess of its discharge permits.[108] On May 18, 1992, Chevron's President personally pleaded guilty in federal court in Los Angeles to sixty-five violations of the Clean Water Act, and paid $8 million in fines in lieu of a trial.[109]

Pollution incidents continued. In 1993, Chevron's refineries discharged more than 4,660 pounds of selenium into the San Francisco Bay that year alone.[110] This resulted in avian death at Kesterson National Wildlife Refuge and birth defects of ducks and coots in a bayside marsh.[111] In 1998, Chevron agreed to pay $540,000 to settle a lawsuit initiated by EPA alleging that the company violated the Clean Water Act on numerous occasions between 1991 and 1995 by bypassing the Richmond refinery's water treatment system and discharging wastewater that exceeded

toxicity limits.[112] Additionally, Chevron misreported on four separate toxic chemical leaks/spills involving hydrogen sulfide, hydrogen fluoride, sulfur dioxide, and sulfuric acid.[113]

The company's Richmond facility also exemplifies its problems with local environmental justice issues. The Richmond community comprises mostly African Americans and other ethnic groups and is one of the poorest in the state. Over 60 percent of the residents lack higher education and over 40 percent of children under eighteen live in poverty.[114] Leaders in the community believe that the high rate of leaks, emissions, and accidents documented at this facility has increased the risk of cancer and other diseases for community residents, particularly as some emissions have been reported at levels thousands of times higher than the allowable standard.[115] Studies now confirm the disproportionate risk that communities such as this one face from all kinds of toxic exposure related to oil and other industries that tend to locate plants in low-income migrant communities or communities of color.[116]

Residents here are also concerned with the lack of reliable procedures to alert and protect the community from known risk factors resulting from accidents and other toxic releases. In March 1999, for example, the Chevron refinery caught on fire and burned for several hours. Due to a computer error, the Contra Costa County community notification system incorrectly notified the town of Martinez instead of Richmond.[117] Over one thousand local people received hospital care for headaches, nausea, dizziness, throat and skin irritation, and respiratory problems as a result of toxic releases from the incident.[118]

Though hard fought, local groups like the West County Toxics Coalition have succeeded in establishing a process for community dialogue with Chevron, including through community advisory panels (becoming more common in the oil and chemical industry).[119] This process allows community members to directly communicate their concerns to company officials. The coalition would like the company to evaluate and then provide more public information on the health risks to community members and employees associated with its emissions and leaks, but believes that this will not happen with a dialogue process alone—real change will take more government oversight and public access to information on the impacts of company operations.[120]

ARCO (a subsidiary of BP/Amoco)

In 2000, BP/Amoco acquired California-based ARCO. At the time, BP owned roughly 40 percent of all crude oil produced in the Alaska North Slope (ANS) and about 50 percent of the Trans-Alaska Pipeline System (TAPS), used to transport crude oil to port at Valdez, Alaska. ARCO, their

biggest rival, owned over 30 percent of the ANS crude production and 22 percent of the TAPS. In California, ARCO's main hold was the Carson refinery in southern California. As most of ARCO-BP/Amoco corporate performance reviewed in this paper was before 2000, the company will be referred to as ARCO for the purposes of this study.

ARCO has enjoyed a positive reputation for its work to make gasoline less polluting. In 1989, 1990, and 1991, ARCO introduced reformulated gasoline blends that substantially reduced smog emissions and benzene content of gasoline.[121] ARCO's initiative prompted competitors to improve their gasoline standards: "not long after [ARCO's] EC-1, several other companies entered the marketplace with reformulated products…these products are at least starting points on the road to cleaner air."[122] ARCO has set standards in diesel technology as well. In 1999, the company introduced a fuel containing one-eighth the amount of sulfur of other diesel fuels then available.[123]

Despite ARCO's strides in gasoline reformulation, other aspects of the company's environmental record are far from exemplary. In 1988, the Council on Economic Priorities rated the company as the worst polluter in a study of fifteen refineries.[124] In 1990, ARCO's Carson refinery released ten times more pollutants than the average plant, and in 1996 the Natural Resources Defense Council identified the refinery as the third biggest source of smog pollution in the Los Angeles region.[125]

In California's South Coast Air Quality Management District, ARCO led the top ten list of air pollution penalty settlements with a three hundred thousand dollar payment for exceeding emission limits on a vapor-recovery system from 1988 to 1990.[126] The small amount of the penalty in this case raises the question of the efficacy of regulation.

Like many other oil companies, ARCO has fought for less disclosure to the public on oil incidents involving hazards and accidents. One statement reads: "ARCO believes that publication of a polluter's list [by Air Quality Management District] does nothing but mislead the public into believing that the biggest enemy in the war against polluted air is the local refinery or factory."[127]

Occidental Petroleum

Occidental Petroleum Corporation employs approximately eighty-eight hundred people worldwide and explores and produces in the U.S. and ten other countries in the Middle East and Latin America including Colombia,

Ecuador, Oman, Pakistan, Qatar, Russia, and Yemen. In December 31, 2000, Occidental's oil and gas reserve base was 2.171 billion equivalent barrels, up 60 percent from December 31, 1999.

Occidental is the largest independent oil and gas producer in California. In California, Occidental owns Elk Hills oil and gas fields in the southern San Joaquin Valley and significant operations offshore Long Beach. Occidental purchased Elk Hills in 1998 from the Department of Energy (DOE). This purchase brought Occidental's land assets in California's oil-rich Central Valley[128] to eight hundred thousand acres.[129] Proven reserves in Elk Hills exceed 300 million barrels of liquid and 650 billion cubic feet of natural gas, making it California's largest reserve.[130] Occidental estimates the recoverable reserves of Elk Hills at approximately 1 billion barrels of oil equivalent.[131] Within a year of the purchase, eighty-four oil and gas wells were drilled, and the first phase of a three-dimensional seismic survey covering 50 percent of the field was completed.[132] Net production per day from Elk Hills in 1999 was 47,000 barrels of liquid and 287 million cubic feet of natural gas.[133]

Environmental organizations, including the Sierra Club and the Southwest Center for Biological Diversity, commenced a lawsuit against the DOE alleging that the production facilities planned (including a five hundred megawatt power plant) would threaten a relatively intact and vast natural habitat crucial for the survival of six federally threatened or endangered species. These species included the San Joaquin kit fox, antelope squirrel, giant kangaroo rat, blunt-nosed leopard, Tipton kangaroo rat, and the Hoover's woolly star.[134] The U.S. Fish and Wildlife Service (USFWS) agreed that increased oil and gas production at the site would adversely affect several endangered species.[135]

Occidental's activities at Elk Hills also raised criticism from local communities and laborers.[136] California Unions for Reliable Energy (CURE), which represents members who live and work in the Bakersfield and southern San Joaquin Valley area, along with other experts, have contended that Occidental's environmental assessment for the project did not comply with NEPA.[137] CURE further complained that the Bureau of Land Management and the DOE had failed the Clean Air Act conformity analysis, which requires disapproval of new projects demonstrated to cause, contribute, or increase the frequency or severity of air quality standard violations.[138] The San Joaquin Unified Air Pollution District agreed threshold guidelines for NO_x and ROG (ozone precursors) are both 10 tons per year[139] but the project would annually emit 101 tons of PM-10, 17 tons of ROG, and 415 tons of NO_x.[140] Despite these issues, the project has gone forward, and the power plant is expected to become operational in Spring 2003.

Occidental also faces environmental justice issues with its project. The local Native American Tinoqui Tribe in the Elk Hills, a community near Bakersfield, who have occupied this sacred burial site for centuries.[141] Occidental was to complete an Environmental Impact Assessment (EIA), including an archeological evaluation, of forty-seven thousand acres. Yet, in 1999, the study had not been completed and full-scale production proceeded without the archeological assessment—one hundred new wells were dropped. According to tribal leader Dee Dominguez, ninety-one historic tribal sites exist on the property, but only eight are eligible for protection through inclusion in the National Register of Historic Places. Tribal members requested that these sacred sites be preserved for use and access by the tribe.

In 2000, Occidental and DOE agreed to perform "data recovery" of the eight sites registered in the National Register of Historic Places.[142] This procedure, which many Native Americans consider a violation of the sacred sites and their cultural beliefs, allows for extraction and removal of artifacts from their site. In February 2001, Occidental informed Dee Dominguez that, in fact, no data recovery was ever done. At the same time, DOE informed the tribe that one of the eight sites was severely damaged: a road and a well were built over the site and a nearby pipeline was redone. Since the tribal members are considered third party beneficiaries, they have no legal rights. Instead, they march in protest to raise awareness about the company's practices, which they consider to be in stark contrast to its code of conduct, hoping that other consumers and shareholders can pressure the company to address these incidents.

Unocal

In 2000, Unocal's crude oil production was eighty-six thousand barrels per day, and its oil and gas reserves were at 602 billion barrels of oil equivalent. Unocal has operations in Thailand, Indonesia, Myanmar/Burma, Bangladesh, The Netherlands, Azerbaijan, and Congo. In 1999, Unocal's North American exploration activities accounted for 45 percent of the company's crude oil production. Unocal's largest refinery in California was located in Rodeo, until it was sold to Tosco Corporation in 1997.[143]

Since the company's sale of its West Coast refining and marketing assets in 1997, Unocal is no longer a key player in California. However, some discussion of Unocal's record in the state is valid, since critics claim that the company is responsible for some of the worst pollution in California's history. In 1989, Representative Henry Waxman (D-Los Angeles) indicated that Unocal's La Mirada facility near Los Angeles was one of the most hazardous toxic emitters to nearby residents.[144] An EPA internal

database put the lifetime cancer risk of residents at greater than one in one hundred.[145] Unocal operated a refinery that some contend repeatedly created hazardous conditions in the town of Rodeo, California (located in Contra Costa County), until it was sold to Tosco Corporation in 1997. In 1994, the refinery leaked catacarb, an odorless hazardous chemical, for sixteen days. Plant managers told health officials, workers, and the public that the chemical was harmless. In 1996, the refinery emitted 580 tons of SO_2, a criteria air pollutant.[146] More than seven hundred workers and thousands of residents were exposed, and many fell ill. Unocal paid $3 million in criminal and civil charges to Contra Costa County in 1995 for the discharge and, in 1997, paid $80 million to settle private lawsuits with 18,000 individuals as well as a $375,000 penalty imposed by the EPA.[147]

During the time of its operations in California, Unocal was responsible for an oil spill that ranks as California's largest and the nation's fourth largest. In 1992, the state's Office of Oil Spill Prevention and Response held Unocal responsible for the onshore spill of petroleum thinner from 1986 to 1990 at Guadalupe Field near the San Luis Obispo county line.[148] Estimates of the volume of the leaks, registering 202,000 to 476,000 barrels, make the spill comparable to the Exxon tanker spill in Valdez, Alaska. One report indicates that, in 1994, Unocal acknowledged leaks of up to 8.5 million gallons of clear, diesel-like fluid into the ground over a forty-year period.[149] Evidence collected by the office of Oil Spill Prevention and Response indicates that, for fifteen years, some employees knew about the spill and covered it up.[150] The Oil & Gas Journal estimated that it would take ten years to clean up the contamination.[151] Not surprisingly, Unocal was voted one of the ten worst corporations of 1994 by the Multinational Monitor.[152] In 1998, the attorney general and Unocal settled California's largest civil action settlement, with Unocal agreeing to pay $43.8 million in exclusion of the clean-up cost.[153]

In another incident, after much suspicion, Unocal admitted in the mid-1990s that four hundred thousand gallons of petroleum products (crude oil, diesel fuel, and gasoline) had leaked from pipelines that the company had buried as long ago as 1906 in a town called Avila Beach.[154] After a suit against Unocal by the nonprofit Communities for a Better Environment, the clean-up and rebuilding of Avila Beach started in 1997.[155]

In September 1998, thirty citizens' organizations and individuals filed a petition with the attorney general of California to revoke Unocal's corporate charter.[156] The National Lawyers Guild's International Law Project for Human, Economic, and Environmental Defense (HEED), which prepared the petition, asserts that the law allows "the attorney general to go to court to simply dissolve a corporation for wrongdoing and sell its assets to others who will operate in the public interest."[157] The

petition alleges that Unocal has been involved in enough environmental, human rights, and labor rights violations to warrant such action.[158] While the petition has received considerable public support,[159] two attorney generals have rejected it.[160] In 1998, Unocal withdrew from Afghanistan; some believe that the efforts of the petitioners contributed to the company's action.[161]

Key Labor Issues in the California Oil Industry

CAP gleaned the following regarding California's oil industry from conversations with labor union representatives of the Paper, Allied-Industrial, Chemical, and Energy Workers International Union (PACE), which claims thirty-eight hundred oil worker members in southern California-based Local Chapter 8-675.[162] The union is concerned with unfair or unlawful termination of employment, inadequate measures to protect worker health and safety, restrictions on ability to organize/unionize, and negative repercussions for workers who speak out about these and other concerns. In addition, workers do not often find lawsuits a viable response to violations of their rights because of the considerable financial resources and time commitment such suits entail.

One concern is the recent trend of oil company mergers and associated worker layoffs. In the sale of Unocal facilities to Tosco in 1997, 20 percent of workers lost their jobs, in some cases in disregard for seniority or job performance. Workers with chronic illnesses, active political presence in the union, or a history of speaking out against unsafe practices were targeted for layoffs.[163] A similar complaint is union busting. While some oil companies have a high percentage of unionized workers, others are not union friendly and avoid unionized labor.[164]

Worker health and safety is another key issue for the union. Between 1999 and 2000, twenty-five major refinery accidents occurred in Contra Costa County, for example, leading to four worker deaths and what has been considered the deadliest two-year period in the history of oil refinery activities in the county.[165] Union representatives believe that employees are pressured to underreport accidents, citing that companies can award employees for number of man-hours without accidents, thereby giving workers incentive to forgo reporting smaller incidents.[166]

The union is concerned too that companies try to decrease liabilities and maintain the appearance of upholding OSHA standards by contracting out for the most dangerous work. Contractors can be under-trained for

high-risk work and underpaid (sometimes starting at minimum wage). Companies need not include the contractors' accidents and injuries in data reported under OSHA, leading to better than actual injury rates.[167]

DOING BUSINESS DIFFERENTLY

In this section, we discuss several key efforts by companies that demonstrate significant potential for broad replication within the industry. One effort represents the agreement by oil and mining companies to adopt human rights principles in undertaking security arrangements with governments. Another concerns the partnership between multinational companies and nongovernmental organizations on monitoring company emissions from their facilities that contribute to global warming. In addition, we present a more detailed analysis of Shell Oil's Camisea project in Peru, which, although it was abandoned, presents a positive initiative that other companies can replicate.

Unfortunately, we found few global operating "models of success" to demonstrate that the oil industry is making real progress in addressing the concerns raised in this study. Some models are limited in their applicability because they are either targeted to one country or to one environmental issue, such as global warming, rather than reflecting company-wide or systemic changes to the industry. Nevertheless, the following examples deserve consideration in reforming industry-wide practices. The final section of this chapter provides concrete recommendations for broader legal and policy reforms that can improve accountability to the public and affected stakeholders.

Adopting Voluntary Principles on Security and Human Rights

On December 20, 2000, the U.S. and U.K. governments joined with a number of companies in the extractive and energy sectors—including Texaco, Chevron, British Petroleum, Conoco, Freeport McMoran, Rio Tinto, and Shell—to adopt a set of Voluntary Principles on Security and Human Rights. NGOs—including Amnesty International, Human Rights Watch, Business for Social Responsibility, Fund for Peace, International Alert, Prince of Wales Business Leaders Forum, Council on Economic Priorities, and the Lawyers Committee for Human Rights—provided input and advice on the development of the principles. These principles seek to guide companies in maintaining the safety and security of their operations within an operating framework that ensures respect for human rights and fundamental freedoms. They address basic issues including risk assessment and relations with both public and private security.

While stakeholders have questions about implementation of the principles, the historic importance of private industry agreeing to a set of standards to govern oil operations should not be minimized. The agreement is the first to include formal participation by NGOs and government in the development of standards. The principles' implementation by signatory companies might pressure other companies to sign on or adopt similar provisions. Governments can also incorporate the principles into their contracts with multinational companies. Following are the main points set forth in the principles:

- Companies must assess the risks that are present in a company's operating environment as accurately as possible, including identifying and assessing the potential for violence, investigating past human rights violations of any and all parties seeking to be involved, and assessing the capacity for holding accountable those responsible for human rights violations if they occur. Also, where companies provide equipment, they must assess the risk of possible misappropriation for use in human rights violations.

- Companies should consult with host governments and local communities about the impact of their security arrangements on those communities; they should communicate their policies regarding conduct and human rights to the security providers and encourage host governments to make security arrangements more transparent. Companies should hold public meetings with security forces on a regular basis and consult with other companies that operate in the same region and have common concerns. Companies should record and report any credible allegations of human rights abuses by public security, actively monitor the status of the investigation, and press for proper resolution.

- When companies must hire private security because host governments are unable to adequately provide it, they should hire organizations with clear policies regarding the use of force, and these policies should be monitored by the company. The private security should not employ any individuals implicated in human rights abuses.

- Companies should support efforts by governments, civil society, and multilateral institutions to provide human rights training and education for public security as well as their efforts to strengthen state institutions to ensure accountability and respect for human rights.

- Finally, companies should include the principles outlined above as contractual provisions in agreements with private security organizations, and these agreements should permit termination of the

contract if evidence of unlawful or abusive behavior is found. Companies should review the background of security personnel, and monitor them to ensure they fulfill their obligations.

Stakeholders are uncertain how these principles will be internalized within the participating companies since they are still untested. Given their non-binding and legally unenforceable nature, the usefulness of the principles will be determined by the actual changes in *status quo* practices by these companies. If the human rights and environmental communities that advise the process do not see what they consider to be real results, they will undoubtedly view the principles as another code of conduct adopted for public relations enhancement.

Forging a New Partnership for Climate Action[168]

British Petroleum and Shell, along with several other large MNCs, joined with environmental organizations to create the Partnership for Climate Action (PCA) in October 2000. The goal of the PCA is to address climate change by using market-based mechanisms such as emissions trading to reduce greenhouse gas emissions. The partnership aims to demonstrate that market-based programs can provide the means to simultaneously achieve both environmental protection and economic development goals. By sharing lessons learned and best practices, the partnership hopes to encourage more companies to adopt efficient and affordable measures to address climate change.

Each company in the Partnership for Climate Action has set a firm target for greenhouse gas emissions reductions, most using the baseline year of 1990. The targets should annually reduce at least 80 million metric tons of carbon dioxide equivalent by 2010. The members have set goals to further reduce greenhouse gas emissions through point source reduction, improved energy efficiency, and the use of renewable energy for 10 percent of their global needs. The partnership also has impressive monitoring and transparency features. Companies are required to measure direct and indirect sources of emissions for specific greenhouse gases, including CO_2, CH_4, N_2O, and HFCs, at each of their operating units and then release annual reports to the public, employees, and shareholders.[169] This transparency, which could be emulated in other similar agreements, gives environmental organizations and other stakeholders access to the information needed to monitor implementation of the partnership and to compare companies' actual performance with their stated goals.

Improving Operations in Sensitive Environments:
Shell Oil in Peru

When, in the early 1980s Shell discovered one of the largest natural gas deposits in the Americas[170] in Peru's Lower Urumbamba region, it left an indelible mark on the local people—a deadly epidemic. Previously uncontacted natives were given gifts by Shell in order to calm ongoing conflicts. Those people contracted the flu and passed it on to their families, killing up to half of one tribe.[171] Other serious health impacts were registered from the contact between workers and the natives, including prostitution, fathering and abandonment of children, and violence. Environmental and indigenous rights organizations in Peru and elsewhere mounted protests. Shell returned to the region in 1994 as Shell Prospecting and Development Peru (SPDP—a partnership between Shell and Mobil) to undertake the Camisea Project, to do things differently.

Our discussion of the Camisea experience is meant to provide information about how one company changed the way it did business in a particular region, choosing to move beyond local law and policy to achieve closer interaction with affected indigenous communities and to implement better environmental strategies. Although SPDP withdrew from the project in 1999 after it was unable to reach agreement with the government of Peru on revenues from the project, it operated for several years under methods that provide key lessons for oil companies operating in sensitive environments.

Background

Located five hundred kilometers due east of Lima, the Lower Urumbamba region lies geographically isolated within the Amazon rainforest, a fragile and diverse ecosystem.[172] These rainforests contain the highest count of mammal species in the world (two hundred different species occur at the Madre de Dios, one hundred kilometers away from this area). At the Tambopata Reserve just 400 km away, scientists have recorded 92 species of mammals, 570 species of birds (a world record), and 71 species of amphibians.

Some ten thousand indigenous people from seven native culture groups inhabit the region. The predominant tribe—the Machiguenga—dates its history back five thousand years. Other native groups maintain sporadic contact with the outside world, while others have rarely, if ever, been contacted. The communities are strongly linked with each other through family ties and shared culture. The tribes practice subsistence agriculture and use what many believe are sustainable forest and river management

practices.[173] Most of the people have some primary schooling, but medical facilities and other types of infrastructure are limited.[174]

To address concerns that Shell's activities would seriously impair this pristine wilderness and the inhabitants' unique tribal structures, the Shell team agreed with the community to adopt three major principles for minimizing project impacts on the local environment and to maximize the sustainable benefit to the indigenous residents.

- "Net social benefit to the communities"—a policy of promoting social capital and sustainable development would govern the project and negotiations with the community. Special teams would be designated to manage relations with the local society and would be composed of a leader and eight people who would serve as an interface between Shell and native communities.

- "Offshore"—operations would take place as if this were an offshore facility—workers would have absolutely no contact with natives, villages, or surrounding communities. A small community liaison team would manage all contact with the natives. Additionally, all workers were to be vaccinated. To receive a boarding pass at the check-in counter for the flight to base camp, workers were required to present a health passport issued by the corporate medical advisor.[175]

- "No roads"—operations would rely primarily on river and helicopter transport to move equipment and materials to the site of their wells. It was determined early on that road construction was a serious concern to stakeholders, due to cultural and ecological impacts such as increased settlement, deforestation, degradation, and abandonment at the close of the project.

The consultation strategy contained explicit guidelines to actively seek out, inform, and get feedback from individuals and groups that had an interest in or influence over each aspect of the project's exploration, development, and export. It included: identification of and contact with all stakeholders (about two hundred organizations); dissemination and exchange of information; six rounds of consultation with over thirty native communities; a series of participatory workshops regarding design, operations, etc.; and incorporating stakeholders' recommendations to enhance the project's decision-making process.[176]

The program steered natives away from a purely compensatory approach, avoiding cash transactions in favor of community-wide investments such as clinics, schools, and scholarships.[177] It attempted to strengthen existing organizations like the Mothers' Club and undertook a

variety of community efforts to ensure a wider distribution of benefits through support of community-wide investments.[178]

To help it address the sensitive biological issues, the company engaged the Smithsonian Institution's Conservation Biology Institute (CBI), which prepared a biodiversity assessment and a long-term monitoring plan. The CBI provided data for the Environmental Impact Assessment (EIA) and contributed feedback that was incorporated into operational decisions, including the location of a proposed gas plant and the use of helicopters instead of roads. As a result, the EIA process went well beyond the requirements of Peruvian law.[179] The environmental measures adopted in the exploration stage of the project minimized the impact of the exploratory activities.

Lessons Learned

Independent analysis of SPDP's experience in Peru identified the following key lessons that the stakeholders and Shell learned in the process of the Camisea development.[180]

Operate with Cultural Sensitivity—SPDP learned that local indigenous people often acted in ways unpredictable to the company's conceptions of rationality. For example, when SPDP obtained a hovercraft to transport various items downriver, cultural as well as practical problems arose almost immediately with local residents. Local people complained about the noise, speed, size, and wake of the hovercraft, and were concerned that it harbored demons. This led some to shoot at the craft from the riverbanks.

The team addressed the problem by designing new hovercraft that were less intimidating and noisy. Red warning boats would precede the hovercraft to prevent accidents. Too, the team decided that an "inspection for demons" would be performed in every community prior to the start of operations, in order to address cultural concerns.

Facilitate Representative Community Participation in Contract Negotiation—SPDP initially negotiated a contract with a local leader who Shell believed was a legitimate community representative. When this proved erroneous, the company involved all community members in development of the agreements through their communal assemblies. This proved to be more effective than negotiating with one member.

Involve Managers and Design Personnel in Local Consultations—SPDP found that involving operational personnel directly in the local consultation process is critical because it builds internal understanding of social issues among Shell's managers, designers, and engineers, and it enables

operational personnel, rather than health, safety, and environment employees, to make an effective case for change to the rest of the team.

Commit Company at a High Level to Environmental and Social Policies— SPDP found that its efforts were more effective if it committed to policies from a high level in the company. For example, high level management committed early on to a "no roads" policy, even when field managers balked that such a policy was nearly impossible and would increase project costs. The high level involvement of managers provided a greater incentive for the team to develop solutions. The team did find financially feasible solutions that addressed major environmental concerns and increased positive relations.

Work with Advisers and International NGOs—SPDP's management team contracted with an international NGO, Pronatura, to develop an innovative corporate-community partnership model. The team met with representatives of thirty Peruvian environmental groups and with NGOs and experts globally to receive input. Shell engaged study teams from UC Berkeley's Energy Resources Group to study the process, and from ERM Peru S.A. to prepare an environmental profile that would appraise the potential impacts in this sensitive area. The reports of these consultants were distributed to the government and NGOs in Peru for comment. This broad consultation and collaboration was key to effectively changing how Shell formerly did business in Peru. NGOs and outside experts were able provide useful insights and methods unfamiliar to Shell's operational managers.

PUBLIC SECTOR RECOMMENDATIONS

Summary of Key Findings

The governance structure for oversight of oil extraction and production activities in many developing countries is widely considered inadequate to protect human rights, health, and the environment. At the national level, many developing countries lack consistent, specific, and enforceable regulations. Even countries that do have a fairly developed regulatory framework often face a dearth of resources and training when it comes to monitoring corporate activity and enforcing existing regulations. Corruption can impose barriers to effective *host* country regulatory enforcement. *Home* country oversight of multinational corporate activities is almost non-existent.

The environmental guidelines for oil operations, both at the international and the industry level, that companies often refer to in their contracts with

governments, are adequate as a general set of principles but are too vague to serve as benchmarks for company performance. They are also not generally designed to address the most pressing community or social needs associated with oil development. Where companies have adopted more specific standards, the public has no means of independently verifying performance because these contracts remain confidential.

Further complicating this scenario, communities affected by oil development have few rights of access to information about company practices and few remedies for toxic releases and human health impacts. There are also few fora in which communities can air their grievances or discuss how best to address community needs with officials and company leaders. The growing tension between local communities, private companies, and government is leading to more violent confrontations in oil-producing regions.

Consumers, investors, and officials in the U.S. frequently know even less about U.S. corporate performance overseas or how to best judge the polemics around controversial oil issues. As the California experience demonstrates, even where there is significant environmental regulation these issues still pose challenges for local government and communities. Current right-to-know laws provide limited information on environmental compliance and do not address the social issues raised by the affected communities.

The case studies demonstrate that there are limits to the use of global codes of conduct and voluntary initiatives in addressing the large environmental and social problems that continue to exist around oil operations. Both host *and* home country governments must exercise more oversight, and reform the legal and policy landscape to encourage better environmental and social practices.

Legal and Policy Reforms

The following recommendations provide guidance on the legal and policy reforms for the oil sector that could: a) empower local communities to become effective partners in the environment and development decision-making processes; b) provide incentives for companies to employ better environmental and social practices; and c) allow the public to better monitor and verify company performance.

Promote Respect for Human Rights and Environmental Protection—The abridgement of the rule of law, taking of property without just compensation, failure to clean up pollution that is harming human health, and the harassment of environmental protestors have become

commonplace in many oil-producing regions. Rights of redress and access to justice, which are absent for affected citizens of these regions, should be established to compensate victims of environmental harm and human rights abuses. The U.S. should promote the adoption of stronger human rights and environmental norms through bilateral diplomacy and financial aid. It should also adopt policies to encourage U.S. companies to act through example, such as by adopting the newly developed principles on security arrangements created by multinational companies and the U.K. and U.S. foreign offices, with input from NGOs and trade unions. As discussed in the previous section, these principles are a good start toward defusing, and preventing, human rights abuses. To ensure these commitments are effective in the field, the U.S. can promote company issuance of public and independently verified reports of their efforts.

Facilitate Effective Community Participation and Dialogue—Empowering affected communities to participate in environmental and development decision-making processes is critical to reducing conflict and minimizing environmental damage around oil development activities. One important step is for host and home countries to adopt laws improving the public's right of access to information and participation in official permitting, and environmental and economic decisions. As communities comprise diverse interests, rarely taking one position on development needs, governments should adopt laws and policies to facilitate stronger local involvement with developers and officials in contract negotiations. These should include better representation of community interests such as through communal bodies and assemblies. An important step will be to promote the development of projects that can provide net social and environmental benefits for affected communities. The U.S. government can encourage these reforms through its bilateral diplomacy and through the private sector by providing favorable subsidy and tax treatment.

There are precedents for facilitating community dialogue. Two approaches are presented in the lessons of Shell's Camisea project in Peru, discussed in the previous section, and California's Tanner Act. The state law establishes a framework to facilitate dialogue between the community and private companies on local concerns about proposed projects, be they cultural, political, or environmental.[181] A locally appointed committee, comprising community representatives, enters into dialogue with the company on specific measures to: 1) safeguard public health and welfare; 2) protect environmental values; and 3) extend economic benefits to the community as compensation for potential impacts on livelihood. The company provides resources to the committee for technical experts. Once the measures are agreed upon, they are incorporated as legal provisions in the government permits, ensuring implementation and accountability.[182] Projects cannot move forward until

this process is complete. This process improves community participation and support for local projects.

Promote Community Development with more than Selective Cash Payments—Compensating a few local leaders can foster corruption and divisiveness in local communities, yet this is the norm for many oil companies operating overseas. The U.S. and host country governments can adopt policies to foster wider distribution of benefits, working with the private sector directly in supporting community-wide investments, micro-enterprise, and gender-based local initiatives. Establishing environmental and economic development trust funds based on effective models, can limit corruption and promote the pooling of resources. One model would select a broad base of stakeholders—at the local, regional, or national level—to review and decide on project proposals benefiting local development. The stakeholder committee would oversee implementation and ensure greater accountability for resources spent in the community.

Improve Disclosure Laws for U.S. Domestic and International MNC Operations—An immediate driver of improved performance is consumer and shareholder choice. The public now has few options for obtaining information on company performance here and abroad: public reports on pollutant releases in the U.S., such as TRI, require secondary analysis by technicians; information disclosed by companies voluntarily, such as annual reports, are designed to keep and attract investors and can skew companies' actual performances; and the reports of NGOs monitoring corporate activities may be incomplete.

State and federal authorities should adopt laws and policies to encourage corporations to adopt independent monitoring and verification systems and to publicly disclose information on their practices, here and abroad, including their compliance with both domestic and international standards. U.S. policymakers should further adopt verification standards to ensure that officials, consumers, and shareholders can rely on the information disclosed—that companies are performing as they claim (and often advertise).

Encourage the Elimination of Double Standards—The U.S. should promote the use of best practices among both host and home countries. Policies should require that standards adopted by companies are transparent to communities and consumers and that commitments to using best practices apply to existing operations as well as any closure of facilities that require clean-up or restoration. The Shell Camisea project demonstrates the business feasibility for implementing this objective.

Clearly Delimit Relationships with Repressive or Abusive Governments—
The U.S. government should more clearly identify and prevent U.S.
commerce with those regimes that are persistent violators of human
rights. U.S. policies governing private sector relationships with abusive
governments are vague, creating uncertainty for, and in some cases
encouraging, companies to do business with repressive governments.
The U.S. Department of State should identify in its annual human rights
report those companies that consort with abusive governments so that
Congress can take appropriate action, including limiting the company's
access to federal contracts or subsidies.

REFERENCES

[1] See, e.g., J Bloom, *Political Corruption*, BBC News, http://www.bbc.co.uk/radio4/today/reports/politics/political_corruption.shtml; The results of the Transparency International's Bribe-Payers' Index have just been released. Based on an opinion poll conducted in 15 countries and with 835 interviewees, the survey reveals a shockingly high level of corruption between multinationals and foreign public official.   The most corrupt industries cited were public works and the arms industry followed by the oil industry. See "Why are Multinationals Corrupt?" Face Off (May 17, 2002), http://www.faceoffonline.com/170502/170502_why_are_multinationals_corrupt.htm.

[2] United Nations (UN) Report on Energy and Transport, E/CN.17/2001/PC20, UN Economic and Social Council (2001), p.2.

[3] It is possible that oil demand might slow in coming decades, tempered by conservation and a modest but growing trend toward renewable energy sources. The Worldwatch Institute envisions a bright future for renewables, reporting that wind and solar energy use have grown in the past decade by 24% and 17% respectively.

[4] D.H. Claus, *The Politics of Oil-Producer Cooperation* (Boulder, CO: Westview, 2001), p.51.

[5] Ibid., p.53.

[6] Ibid., p.56.

[7] Ibid., p.70.

[8] Ibid., p.83.

[9] ILO, "The promotion of good Industrial relations in oil and gas production and oil refining," *Report for Discussion at the Tripartite Meeting on the Promotion of Good Industrial Relations in Oil and Gas Production and Oil Refining* (Geneva: ILO, 2002), p.9

[10] Ibid., p. 9.

[11] Ibid., p. 8.

[12] Ibid.

[13] Ibid.

[14] A. Finizza, "The Future of Oil: Energy in the Twenty-First Century," *Business Economics* (Oct. 1, 1996).

[15] *The Economist* (Oct. 12, 2000).

[16] *The Economist* (Dec. 8, 2001).

[17] D.H. Claus, *The Politics of Oil-Producer Cooperation* (Boulder, CO:Westview, 2001), p. 85.

[18] G. Luciani, "The Dynamics of Reintegration in the International Petroleum Industry," *Oil in the New World*, K. Gillespie and C.M. Henry, eds. (Gainsville, FL: UP Florida, 1995), p. 49.

[19] M. A. Mehlman and W.N. Rom, "Petroleum Refining Industry", *Environmental and Occupational Medicine,* 3rd ed, William N. Rom, ed. (Lippincott-Raven Publishers, 1998), p. 1272.

[20] A. K. Fearneyhough, *Petroleum Report,* Environmental Research Foundation (Aug. 1994), p. 2.

[21] Smog is an unhealthful compound which is composed of ozone, a chemical product of a reaction between hydrocarbons and nitrogen oxides. Hydrocarbons are produces through the use of petrochemicals (such as gasoline). Nitrogen oxides come from industrial combustion.

[22] "Nigeria to Tighten Pollution Control," *The Oil Daily* (Dec. 17 1991), p.2 as cited in A. O. Ekpu, "Environmental Impact of Oil on Water: A Comparative Overview of the Law and Policy in the United States and Nigeria," 24 *Denver Journal of International Law and Policy* (1995), p.55.

[23] Center for Economic and Social Right, *Rights Violations in the Ecuadorian Amazon: The Human Consequences of Oil Development* (Mar. 1994), p.12.

[24] U.S. Department of State, International Information Program, recent report on the destruction of pipelines (Jun. 2001).

[25] A. K. Fearneyhough, *Petroleum Report*. Environmental Research Foundation (Aug. 1994), p.12.

[26] These compounds are not inclusive of all chemicals used and produced in oil production and refining operations.

[27] *Scandinavian Journal of Work, Environment and Health*, 22(1): 67 (1996), http://infoventures.com/osh/abs/oagi0003.html. This 1996 study on the link between employment in the petroleum industry and rates of mesothelioma (lung cancer) identified that, in Lambton County, Ontario, Canada between the years of 1976 and 1985, ten of the thirteen deaths from this type of cancer were of patients employed in the petroleum industry. The maintenance workers had a 24.5% chance of contracting this cancer.

[28] L. T. Flynn, *Public Health Concerns about Environmental Polychlorinated Biphenyls (PCBs)* (Academic Press, 1997).

[29] CBE, "The Effects on your Health", at: http://www.igc.apc.org/cbesf/health.html.

[30] M. A. Mehlman and W.N. Rom, "Petroleum Refining Industry", *Environmental and Occupational Medicine,* 3rd ed, William N. Rom, ed. (Lippincott-Raven Publishers, 1998), p. 1272.

[31] CBE, "The Effects on your Health," http://www.igc.apc.org/cbesf/health.html.

[32] A. K. Fearneyhough, *Petroleum Report*. Environmental Research Foundation (Aug. 1994).

[33] I. Iyioke, "Toluene", http://www.iet.msu.edu/Tox_for_Journ/Chemicals/toluene.htm.

The Occupational Safety and Health Administration (OSHA) has set a limit of 200 parts per million (ppm) toluene for air in the workplace averaged over an eight-hour workday, 40-hour workweek. The American Conference of Governmental Industrial Hygienists (ACGIH) and the National Institute for Occupational Safety and Health (NIOSH), recommend that toluene in workplace air should not exceed 100 ppm during an eight-hour work day period. The EPA has set a limit of one part per million toluene in drinking water.

[34] Ibid.

[35] "Rights Violations in the Ecuadorian Amazon: The Human Consequences of Oil Development," Center for Economic and Social Rights (1994), pp 9-13.

[36] Inter-American Commission on Human Rights: Organization of American States, "Report on the Situation of Human Rights in Ecuador" (Washington D.C., 1997), p. 87, 90. A consortium of indigenous groups surveyed 21 communities along Ecuador's Napo and Quinchiyacu Rivers and found that roughly three-fourths of the community members complained of gastrointestinal problems, half of frequent headaches, and one-third of skin problems.

[37] Ibid, p. 90.

[38] World Bank, "Nigeria-Community Based Poverty Reduction project" (2000), http://wwwds.worldbank.org/servlet/WDSServlet?pcont=details&eid=000094946_0005040 5323526.

[39] "Why are Multinationals Corrupt?" Face Off (May 17, 2002), http://www.faceoffonline.com/170502/170502_why_are_multinationals_corrupt.htm, and http://www.endgame.org/primer-facts.html.

[40] Rainforest Action Network, "The Jaguar's Black Spots: Western Amazon," *Drilling to the Ends of the Earth* (1998), http://www.ran.org/oilreport/amazon.html

[41] Shell Annual Report (2000).

[42] L. Belsie, "At the Intersection of Business and Human Rights," *Christian Science Monitor* (2000), http://www.globalpolicy.org/socecon/tncs/coresp.htm.

[43] EarthRights International, *Total Denial, and Total Denial Continues* (1996 and 2000), http://www.earthrights.org/pubs.html.

[44] John Doe, et al. v. Unocal Corp., et al. A trial is set for Sep. 2002. One article, by Brook Larmer, "The Rising Cost of Labor", *Newsweek* (May 21, 2001), provided the following account of a victim: *"*Chewing on a wad of betel nut near his hideout in rural Thailand, Maung (not his real name) recalls the abuses that accompanied the arrival of the Yadana gas pipeline, a $1 billion project financed in part by Unocal. The trouble began in the early 1990s, he says, when an Army battalion assigned to protect the pipeline corridor set up base near his village in southern Burma. Soldiers slept in his home, stole his food and forced him to act as their mule, carrying backbreaking loads through the jungle for nothing but a bowl of uncooked rice*."* Some 800,000 people in Burma are forced laborers on government projects, receiving little or no pay. Recognizing this, the U.S. government prohibits companies from undertaking new business in Burma. However, as Unocal already had contracts with the Burmese government at the time the prohibition was enacted, the company's operations were "grandfathered in."

[45] Doe v. Unocal, U.S. Federal Court Judge (Los Angeles, Fall 2000), decision.

[46] B. Larmar, "The Rising Cost of Labor," *Newsweek International* (May 21, 2001).

[47] Jota v. Texaco, Inc. (consolidates Aguinda v. Texaco and Ashanga v. Texaco) 142 F.Supp. 2d 534 (S.D.N.Y. 2001), dismissed on grounds of forum nonconvenience.

[48] 11 victims under the ILRF filed an Alien Tort Claims Act against ExxonMobil on Jun. 20, 2001 in the Federal District Court for the District of Columbia, Case No. 01-1357 CIV.

[49] World Bank, "Nigeria-Community Based Poverty Reduction project" (2000), http://wwwds.worldbank.org/servlet/WDSServlet?pcont=details&eid=000094946_0005040 5323526.

[50] Nigerian Oil and Gas, http://www.nigerianoil-gas.com/upstream/joint_venture_companies.htm.

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[52] H. Clark, et al., *Oil for Nothing: Multinational Corporation, Environmental Destruction, Death and Impunity in the Niger Delta,* a U.S. nongovernmental trip delegation report in which NHI representative, Emeka Duruigbo, participated (Sep. 6-20, 1999), p19, (http://www.essentialaction.org/shell/report/index.html)

[53] Ibid.

[54] P. Kofi, *Oil Development in the Caspian: A critical look at Chevron and Unocal's Environmental and Social Responsibility*, http://www.n-h-i.org/Publications/Pubs_pdf/Caspian_CorpAccountability.pdf.

[55] U.S. Department of State, *2000 Report on Human Rights Practices in Azerbaijan*, http://www.state.gov/g/drl/rls/hrrpt/2000/eur/index.cfm?docid=676.

[56] U.S. Department of State, *2000 Report on Human Rights Practices in Azerbaijan and Kazakhstan* (Mar. 8, 2001), http://www.state.gov/g/drl/rls/hrrpt/2000/eur/676.htm and (Mar. 8, 2001), http://www.state.gov/g/drl/rls/hrrpt/2000/eur/798.htm.

[57] J. Kimerling, "International Standards in Ecuador's Amazon Oil Fields: The Privatization of Environmental Law," 26:2 *Columbia Journal of Environmental Law* (2001).

[58] Ibid.

[59] C. Hull, Occidental's Worldwide Environmental Manager, describes the EMP as "the document which collates all regulatory, mitigation, and standard practices to be employed by the project."

[60] In a letter to CAP following the publication of Kimerling's study, Occidental has stated that its land-acquisition process is legal under Ecuadorian law - what's more, it is *required*

by the Ecuadorian Constitution and the country's Hydrocarbons Law. The company further asserted that it has always encouraged community leaders to seek independent legal counsel. However, land expropriation would appear to violate the EMP's provisions that the company should mitigate possible "conflicts with indigenous cultures, traditions and the way of life" and maintain open and cooperative relations with the communities.

[61] Contributing to this are other company community relations problems. For example, while the EMP states that Occidental is to disseminate the EMP among the communities in the area of "influence of the project," on three occasions the author and local representatives asked company officials for a copy of the EMP that governs the operations in their area, and each time the officials claimed that they were not able to divulge that information.

[62] There was reason to believe that the U'wa's threat was not idle: they committed mass suicide 400 years ago in this same manner after the Spanish Conquistadors arrived and enslaved their people.

[63] U'WA Defense Group, "Occidental Petroleum to Leave U'wa Land!" (May 3, 2002).

[64] Ibid.

[65] "Environmental Stewardship Pledge for CAREFUL Operations" (2001), http://api-ec.api.org/environ/index.cfm?bitmask=001003000000000000.

[66] "Industry Achieves Worker Safety Gains,"API Press release (Jul. 25, 2001), http://api-ec.api.org/AdvancedSearch.cfm, and *Workplace Safety for the U.S. Oil Petroleum Industry 1990-1999*, API report (2001), p.1, http://api-ec.api.org/filelibrary/StatWrkSafety99.pdf.

[67] "Unilateral Trade sanctions," API press release, http://api-ec.api.org/AdvancedSearch.cfm

[68] API Environmental Commitment, http://api-ec.api.org/frontpage.cfm.

[69] Joint E&P Forum/UNEP Technical Publication, *Environmental Management in Oil and Gas Exploration and Production: An Overview of Issues and Management Approaches*, (1997). The E&P Forum is made up of more than 60 members including oil and gas companies, national oil industry associations, and institutes.

[70] There are few exceptions such as a guideline stating that trees of a diameter of greater than twenty centimeters should not be cut in the absence of local regulations.

[71] For example, in order to protect drinking water from possible contamination by oil operations, California law requires facilities to adopt specifically identified measures to prevent oil or wastes from mixing with potential water supplies. Authorities may require facilities to monitor and report on injection wells on a monthly basis. The UNEP/Industry guidelines, on the other hand, provide a list of measures that may have the potential for preventing waste discharges or contamination of water supplies, but they do not provide the appropriate benchmarks and reporting measures that would give officials the information they need to adequately evaluate compliance.

[72] California "has the dubious distinction of having the most counties (11) on the most-polluted counties list." The top five most polluted counties in the US—San Bernardino, Riverside, Kern, Fresno and Tulare—are all in American Lung Association, *California. State of the Air (SOTA) Report 2001*.

http://www.lungusa.org/air2001/intro.html#introduction. This is even considered an improvement on 2000 records, http://www.lungusa.org/air2001/trends.html.

[73] Waxman, *Oil Refineries Fail to report Millions of Pounds of Harmful Emissions*, Committee on Government Reform, U.S. House of Representatives (Nov. 10, 1999), p. i.

[74] Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1997 Annual Report* (Sept. 1998), Table 2. Location of oil reserves in California: San Joaquin Basin, 76.6%; Los Angeles Basin onshore, 7.1%; Coastal region

onshore, 11.5%; Offshore, 4.8%. Bureau of Economic Analysis Regional Accounts Data, http://www.bea.doc.gov/bea/regional/gsp/action.cfm.

[75] Bureau of Economic Analysis Regional Accounts Data, Manufacturing and construction account for $200 billion of the State's gross product, http://www.bea.doc.gov/bea/regional/gsp/action.cfm.

[76] Department of Conservation, *A profile of California's Oil and Gas Industry 1992-1994*, (Sacramento 1996), p. 27.

[77] There is an exclusion under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

[78] Public Resources Code sections 21000, et seq.

[79] 42 USC 7401 et seq.

[80] Enacted as AB 2588; see section on "Hazardous Materials Use" below for further information.

[81] 33 USC § 1321.

[82] 42 USC 300(f) et seq.

[83] Division 3 (commencing with Section 3000) of the Public Resources Code.

[84] 42 USC 6901 et seq.

[85] 42 USC 9601.

[86] 15 USC Sec. 201 et seq.

[87] SPCC regulations 40 CFR Part 112 promulgated on Dec. 11, 1973 at 38 FR 34165.

[88] PL 101-380.

[89] 42 USC 11004 and 40 CFR 355.40.

[90] Waxman, *Oil Refineries Fail to report Millions of Pounds of Harmful Emissions*, Committee on Government Reform, U.S. House of Representatives (Nov. 10, 1999), p. 4.

[91] Ibid., p. i; see also "A Study by the National Oil Refinery Action Network," *Rag Newsletter*; see also S. J. Kay, "Chevron refinery tops nation in toxic waste: Study finds more than 944 million pounds produced by Richmond Plant," *The San Francisco Examiner* (Jun. 19, 1998), p. A5. Over half of all reported VOC and toxic emissions from refineries are fugitive emissions.

[92] Waxman, *Oil Refineries Fail to report Millions of Pounds of Harmful Emissions*, Committee on Government Reform, U.S. House of Representatives (Nov. 10, 1999), p. 4.

[93] Ibid.

[94] California Air Resources Board, *Air pollution Sources, Health Effects, and Controls*, (Oct. 7, 1998).

[95] EPA, *1997 Toxic Release Inventory*, (April 1999).

[96] CBE, *The Effects of Our Water!* http://www.igc.apc.org/cbesf/water.html

[97] California Air Resources Board, *Air pollution Sources, Health Effects, and Controls*, (Oct. 7, 1998).

[98] California Energy Commission, Publication No. P700-96-006 (Dec. 1996), Appendices B-24 and B-25, p. 1. Chevron has the largest refinery capacity, followed by Equilon (formerly Shell/Equilon), BP (formerly ARCO) and Tosco (formerly ARCO), in that order. California Energy Commission Fuels Office Staff, U.S. Department of Energy, Energy Information Administration. Petroleum Supply Annual, 1998.

[99] The specific case studies following this section discuss these issues in more detail. See state report of Manuel Pastor, Jr., *Racial / Ethnic Inequality in Environmental-Hazard Exposure in Metropolitan Los Angeles* (Berkeley, CA: California Policy Research Center, 2001).

[100] A. Aquilt, Citizens for Better Environment (Personal Interviews, Jul.–Oct. 2000).

[101] A. Israel and E. Duruigbo of the Natural Heritage Institute (NHI) interviewed residents of Wilmington.

[102] Meetings with Suzana Trevino, Los Angeles Representative for Communities for a Better Environment (Nov. 10, 2000 and throughout Spring 2001).

[103] While Unocal moved its official headquarters out of California in [YR], the company still has significant operations in the state.

[104] http://www.chevrontexaco.com/about/company_profile/.

[105] U.S. Environmental Protection Agency Toxic Release Inventory; see also S. J. Kay, "Chevron refinery tops nation in toxic waste: Study finds more than 944 million pounds produced by Richmond Plant," *The San Francisco Examiner* (Jun. 19, 1998), p. A5.

[106] Waxman, *Oil Refineries Fail to report Millions of Pounds of Harmful Emissions*, Committee on Government Reform, U.S. House of Representatives (Nov. 10, 1999), p. 7.

[107] Referring to the statement of a district spokeswoman, Terri Lee, see G. Martin, "Air Quality District denies Chevron Relief From Regulations," *San Francisco Chronicle* (Aug. 14, 1999).

[108] Project Underground, http://www.moles.org/ProjectUndergroud/motherlode/chevron/richmond.html, last updated Nov. 18, 1998.

[109] R. S. MacDonald, "Saving Grace: Chevron USA. Inc.'s Violation of the Clean Water Act of 1977," 5:3 *Buzzworm*, p. 18.

[110] Communities for Better Environment, *The Effects on our Water!,* http://www.igc.apc.prg/cbesf/water.html

[111] Ibid.

[112] A. Barnum, "Chevron Agrees to Settle Pollution Suit," *San Francisco Chronicle* (Oct. 16, 1998), p. A22.

[113] Ibid.

[114] U.S. Census data (1990).

[115] Personal Interviews with Henry Clark, Executive Director, West County Toxics Coalition, and NHI staff (2001 and 2002); see also, S. Sherman, "Environmental Justice Case Study: West County Toxics Coalition and the Chevron Refinery" (Apr. 17, 2001) http://www.umich.edu/~snre492/sherman.html.

[116] M. Pastor, Jr., *Racial / Ethnic Inequality in Environmental-Hazard Exposure in Metropolitan Los Angeles* (Berkeley, CA: California Policy Research Center, 2001).

[117] CBE, *Oil Rage-Issue #11* (Summer-Fall 1999) - Noran/CBE.

[118] CBE, *Oil Rage-Issue #11* (Summer-Fall 1999) - Noran/CBE..

[119] There are some 375 community advisory panels in the U.S. now but little analysis has been done as to their effectiveness in significantly changing company practices. See, e.g., B. Burton, "Community Advisory Panels: Corporate Cat Herding," PR Watch Archives (1999), www.prwatch.org.

[120] Discussion with Henry Clark, Executive Director, West County Toxics Coalition, and NHI staff (May 30, 2002 and Jun. 4, 2002).

[121] "ARCO to market low-emission regular gasoline," *Oil & Gas Journal* (Aug. 21, 1989), p. 31; "ARCO Selling Second Reformulated Gasoline," *Oil & Gas Journal* (Sep. 17, 1990), p. 46; "ARCO claims advance in gasoline formula," *Oil & Gas Journal* (Jul. 22, 1991), p. 37.

[122] R.J. Peula, "Additives to have key role in new gasoline era," *Oil & Gasoline Journal*, (Feb. 11, 1991), p. 53.

[123] "ARCO to Introduce Cleaner Diesel for CA City," 10:9 *Greenwire* (Dec. 15, 1999).

[124] "ARCO had opportunity to refute pollution data," *Los Angeles Times* (Mar. 29, 1998), p.14, Part D.

[125] G. Stein, "Wilmington Turns Up its Nose at Pollution Report," *Los Angeles Times* (Apr. 22, 1990); NRCD, "Flying Off Course: Environmental Impacts of America's Airports" (1996).

[126] "For the Record—ARCO Pollution Penalty List," *Los Angeles Times* (Jun. 14, 1991), p. 7; also "ARCO Pollution Fines*," Platt's Oilgram News* (Jun. 14, 1991).

[127] G. Stein, "Wilmington Turns Up its Nose at Pollution Report," *Los Angeles Times* (Apr. 22, 1990).

[128] Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1997 Annual Report* (Sep. 1998), Table 2. Over three-quarters of California's reserves are located in the Central Valley.

[129] Occidental Petroleum Corporation, Oil and Gas Locations, http://www.oxy.com/html/oilgaslocations.htm.

[130] Ibid.

[131] Ibid.

[132] Ibid.

[133] Ibid.

[134] Tinoqui-Chalola Council of Kitanemuk & Ors. V., The United States Department of Energy (filed on Jan. 29, 1998); Also, Certified Habitat Program, Occidental Petroleum Corporation, Elk Hills Conservation Area, San Joaquin Valley, California (Certified 1999).

[135] U.S. Fish and Wildlife Service, draft Recovery Plan for Upland Species of the San Joaquin.

[136] L. Reynolds, attorney in the Law Firm of Adams Broadwell Joseph & Cardoza, in a letter to Tribal Chairwoman Dee Dominguez (Dec. 9, 1999).

[137] J. Phyllis Fox, Letter to Lizanne Reynolds (Nov. 11, 1999), p.1-2. Occidental's Environmental Assessment (EA), the preliminary portion of the federally mandated National Environmental Protection Act (NEPA), concluded that emissions generated by seismic activities would be "minimal in amount" and that the plant would result in "no significantly measurable increase in air pollutants."

[138] D. Zimmerman and A. R. Shain, Department of Energy, on behalf of the California Unions for Reliable Energy (Nov. 11, 1999). on file with the Natural Heritage Institute, 40 C.F.R. Part 51, subpart W, S 51, 850 et seq.

[139] San Joaquin Valley Unified Air Pollution Control District, *Guide for Assessing and Mitigating Air Quality Impacts* (Aug. 20, 1998,) sec. 4.

[140] J. Phyllis Fox, Letter to Lizanne Reynolds, Nov. 11, 1999, p. 14.

[141] Interviews with Dee Dominguez, a tribal leader (2000 and Jun. 2001).

[142] The agreement to proceed with data recovery was signed by the Office of Historic Preservation in Colorado and by California's State Historic Preservation. In this case, the artifacts would be removed and housed at a museum at California State University at Bakersfield. Tribal members approached California Indian Legal Services to attempt legal protections for the sites; however, in Jun. 2000, Ms. Dominguez indicated that they received a letter from California Indian Legal Services stating that the sites could not be protected. Interviews and meetings of NHI staff with Dee Dominguez and tribal members (Jul.-Nov. 2000 and Jun. 2001).

[143] Phillips Petroleum Company currently plans to buy Tosco, including the Rodeo refinery, for $7 billion.

[144] D. Jehl, "High Risk of Cancer Found Near Santa Ana Food Plant," *Los Angeles Times* (Jun. 9, 1989), p. 1.

[145] Ibid.

[146] Environmental Defense Fund (EDF) (1996), http://www.scorecard.org.

[147] C. Anderson-Baker, et al., Complaint Lodged with the Attorney General of California under California Code of Civil Procedure 803, California Corporations Code 1801 to Revoke the Corporate Charter of the Union Oil Company of California (Unocal) (1998).

[148] "Unocal Blamed for Onshore Chemical Spill," *Los Angeles Daily News* (Nov. 23, 1992), p. N3.

[149] R. C. Paddock, Unocal is Coming to Terms with Spill that Grew for Years, *Los Angeles Times* & *Arizona Republic/Phoenix Gazette* (Apr. 1, 1994), p. A28.

[150] Ibid.

[151] Unocal Goes to Extremes to Remediate Two California Petroleum Spills, 97:21 *Oil and Gas Journal* (May 24, 1999), p. 33.

[152] R. Mokhiber, "The Ten Worst Corporations of 1994," *Multinational Monitor* (Dec.1994), http://www.essential.org/monitor/hyper/mm1294.html.

[153] C. Anderson-Baker, et al., Complaint Lodged with the Attorney General of California under California Code of Civil Procedure 803, California Corporations Code 1801 To Revoke the Corporate Charter of the Union Oil Company of California (Unocal) (1998).

[154] M. Beyeler, "Radical Surgery at Avila Beach," 16:1 *California Coast and Ocean* (Spring 2000), p. 4.

[155] P. Rosta, "California Beach Town takes Replenishment to Another Level: Cleanup Required Major Excavation and Reconstruction," 244:20 *Engineering News Record* (May 22, 2000).

[156] For more information, see R. Benson, Challenging Corporate Rule: The Petition to Revoke Unocal's Charter as a Guide to Citizen Action, Apex Press (2000).

[157] "Environmental, Human Rights, Women's and Pro-Democracy Groups Petition Attorney General of California to Revoke Unocal's Charter," HEEED, *Unocal Corporate Charter Action Center* (1998), http://www.heed.net.

[158] See Unocal statement, "Unocal in Myanmar", www.unocal.com/myanmar. The petitioners allege that Unocal has had business dealings with the repressive Taliban regime in Afghanistan and the military dictatorship accused of numerous human rights violations in Burma (Myanmar). Unocal states that it withdrew from a project that would have crossed part of Afghanistan in 1998 and does not support the Taliban in any way. Many inside Burma have called for foreign owned businesses to withdraw operations. Unocal asserts that "engagement is… the more effective way to strengthen emerging economies and promote more open societies."

[159] Appendix: Unocal Petitioners List, http://www.heed.net. Apart from the 30 initial petitioners, more than 100 other organizations and individuals, including 50 law professors from across the country, eventually endorsed the petition.

[160] *Petition Re-Filed with Attorney General Lockyer and Governor Davis*, Press Release (April 14, 1999); http://www.heed.net. Attorney General Dan Lungren rejected the petition without explanation. The petition was re-filed with his successor, Bill Lockyer, in April 1999 and rejected by his office in May 1999.

[161] S. LeVine, "Unocal Quits Afghanistan Pipeline Project," *New York Times* (Dec. 5, 1998).

[162] This section draws on information gathered during personal meetings between CAP researchers and union representatives and members of PACE whose names are omitted to protect them potential for harassment. Further information was provided by Dave Campbell, the Treasurer of PACE Union between Jul. 2000 and 2001 to NHI.

[163] Ibid.

[164] PACE representatives indicated in discussions with CAP researchers that in 1994, when members of PACE's predecessor OCAW presented union recognition to an Occidental chemical plant in West Virginia, workers were immediately dismissed and the

plant dismantled. The Union indicated that Occidental has 1,700 Occupational Safety and Health Administration (OSHA) citations—the highest in the US.

[165] Communities for Better Environment (Apr. 3, 2001), http://www.cbecal.org/alerts/alerts_070701b.htm.

[166] Personal meetings between CAP researchers and union representatives and members of PACE whose names are omitted to protect them potential for harassment.

[167] Ibid.

[168] http://www.environmentaldefense.org/PCA/

[169] PCA, "The Partnership for Climate Change," discussion paper, published by PCA (Mar. 2002), p. 10-19. All of the companies use direct measurement practices such as continuous monitoring or estimation that is based on recognized best practices by industrial associations or countries where they operate and have systems to ensure accuracy, completeness and consistency of the data. However, some data does not exist for companies on which to benchmark reductions and estimations can be skewed. Issues of accuracy and uncertainty are still of concern.

[170] Shell Prospecting and Development Peru (1996). Camisea and Block 75: Legacy from the Exploration Campaign 1981-1987.

[171] P. May, "Corporate Roles and Rewards in Promoting Sustainable Development: Lessons Learned from Camisea," (UC Berkeley: Energy Resources Group, 1999). These past problems remain part of the company's troubled history. It would undertake an appraisal and exploration project that could demonstrate radical change in the way the company had previously approached environmental and cultural issues.

[172] The area of the project's influence was the territory between the Pongo de Mainique (a dangerous and often impassable gorge) and the downstream town of Sepahua. Due to high humidity, heavy rainfall, nutrient-poor soils and a continual recycling of those nutrients, the area is considered ecologically fragile, tolerating only a minimal loss of nutrients through leaching or other influences.

[173] Shell Report / Executive Summary to the EIA, by ERM Peru S.A. (1996), p. 5

[174] P. May, "Corporate Roles and Rewards in Promoting Sustainable Development: Lessons Learned from Camisea," (UC Berkeley: Energy Resources Group, 1999).

[175] Ibid. Initially, there were many employees who were skeptical about viability of these procedures. It would be all but impossible, they said, to prevent workers from mingling with members of nearby communities, and that to attempt it would make their workers feel as if they were prison inmates. However, there appeared to be strict adherence to these procedures and apparently no instances of abuse were cited.

[176] The teams visited more than 30 villages on six consecutive consultation rounds, presenting project design features using various media and three-dimensional models, and airing local problems for potential solution by the company. The team incorporated feedback from local residents into design decisions.

[177] P. May, "Corporate Roles and Rewards in Promoting Sustainable Development: Lessons Learned from Camisea," (UC Berkeley: Energy Resources Group, 1999).

[178] Ibid.

[179] Ibid, p. 10

[180] Ibid.

[181] The Act pertains to hazardous waste facilities but the framework it constructs can be tailored to various settings. See, e.g., M. Leighton and M. Wolfe, "Reevaluating the California Tanner Act: Public Empowerment v. Efficient Waste Disposal," *California Real Property Journal* (State Bar of California, Spring 1995).

[182] Ibid.

CHAPTER THREE

HIGH TECH COMPANIES: DODGING DILEMMAS?

INTRODUCTION

This chapter examines the dilemmas, as well as the promise, of the high tech industry in terms of global environmental sustainability and worker rights and welfare. It focuses primarily on the "hardware" part of the industry—the manufacture of silicon chips and semiconductors, as well as the assembly of circuit boards and computers.

Many companies have made substantial efforts to reduce their environmental impacts. However, it is not clear that *any* companies have come to terms fully with either the sustainability or human rights challenges stemming from their global operations. Despite its clean and green image, the high tech industry is plagued by problems related to:

- Highly toxic and hazardous materials used in production and assembly and embodied in consumer products;

- High intensity of water and energy use in manufacture and assembly of silicon chips and semiconductors;

- Inadequate standards for working conditions, protection of worker health and safety, and protection of labor rights; and

- Poor oversight of global supply chains.

Solving these problems will require substantial innovation borne out of constructive dialogue between companies and local communities, NGOs, workers, scientists, health professionals, investors, and other stakeholders. For many stakeholders, the centerpiece of a more robust commitment by the high tech industry to corporate social responsibility is the willingness to disclose worker health data.

This chapter is based largely on commissioned case studies spanning Taiwan, India, Malaysia, and Thailand, as well as a field investigation in Costa Rica and a policy analysis of high tech regulation in the U.S. and California. Every study revealed significant environmental health and

safety problems, including insufficient monitoring of worker health and workplace safety, inadequate waste management infrastructure, and severe watershed pollution.

In the next section we explore the rationale for investigating the high tech sector. This is followed by an examination of the global structure of the semiconductor industry. In *Clean and Green or Toxic and Mean?* we outline the major environmental and social concerns generated by the industry's phenomenal global growth. We then detail specific insights from the case studies, including the California experience. The final section in this chapter examines what is, and is not, being done doing to improve corporate accountability. It first examines voluntary company initiatives to improve social and environmental performance, and then explores the potential for innovative and complementary policy initiatives, at both the national and state levels.

WHY FOCUS ON HIGH TECH?

Compared to smokestack industries like petroleum or steel, high tech is "clean," at least in terms of reported air and water pollutants. Moreover, many industry jobs are highly paid and highly skilled, especially relative to other options in developing countries. Many high tech CEOs are socially progressive and support corporate philanthropy to improve community welfare.

Planners around the world have tried to reproduce the Silicon Valley high tech growth model. A successful high tech cluster generates upstream linkages to local suppliers, driving local industrial development. No wonder countries and communities from New Mexico and Costa Rica to Malaysia, China, and India compete hard to attract investment by American, European, and Japanese high tech multinationals.

Why, then, focus advocacy and policy attention on high tech? First, despite its clean and green image, the high tech industry struggles with major environmental and social problems. The most serious problem is the use of toxic materials. Embedded in the current production of silicon chips, semiconductors, and computers are highly toxic substances, which, even under the best current standards, can pose threats to worker and/or community health and safety. In the absence of adequate product stewardship and disassembly standards, high tech products end their useful lives leeching toxic wastes into landfills and rivers—even if they are exported to developing countries for recycling.[1]

The high tech industry also has serious social, especially labor, issues to confront. The industry's widespread reliance on mandatory overtime,

subcontractors, and temporary, often immigrant, workers raises ethical questions about fair treatment and family values. A large gap between the highest and lowest paid workers suggests that the industry may be spawning not just a "digital divide" but an occupational and, in some cases, racial divide as well. [2]

A second reason to focus on high tech is to gain more information about performance and risk. Compared to other industries, high tech companies have strong Environmental Health and Safety (EHS) policies. Little is known, however, about whether and how companies actually comply with their EHS policies, especially in their overseas operations.

Moreover, despite the use of known carcinogens in chip production— arsenic, benzene, cadmium, lead—companies to date have refused to divulge internal data that would allow greater scientific understanding of risks to occupational and community health. In the past decade, workers have brought high profile suits against high tech companies such as National Semiconductor and IBM, charging that chemical exposure led to miscarriages, birth defects, and cancer. In the face of insufficient scientific evidence, one case was settled out of court. Others are pending.

Finally, with its high rate of managerial and technological innovation, the global high tech industry has the potential to contribute significantly to ecologically sustainable development. With sufficient corporate attention, non-toxic and resource-conserving process and product designs could be built into new generations of products. Through external engagement and internal leadership, the high tech industry could live up to its potential.

The Regulation Gap

Many of the social and environmental problems of high tech companies afflict both domestic and overseas operations. In developing countries, however, the problems are exacerbated by three factors: 1) lack of adequate environmental regulation and enforcement; 2) insufficient waste management facilities and expertise; and 3) an absence of protection for civil and political rights that allow workers and communities to advocate for themselves.

U.S. and other multinationals operating in developing countries confront the problem of managing their subsidiaries, which operate in different legal, socio-economic, and regulatory contexts. Moreover, the emergence of global product and supply chains, often involving piecework at home or in tiny shops, bedevils regulatory as well as corporate oversight in any country.

The management problems of operating in a global economy are not unique to the high tech sector. Multinationals in all sectors confront the fundamental dilemma of a global "regulation gap." Regulation and/or enforcement are missing at two levels: *international*— there are no binding, enforced environmental, labor, or human rights norms, either for multinational corporations or governments;[3] and *local*—regulatory oversight by national or municipal governments is often lacking or inadequate in many developing countries.

In this context, multinationals confront fundamental ethical choices: should they follow local practice, set and follow their own company-wide standards, or peg their performance to global industry norms of best practice? Many U.S. companies have embraced at least some aspects of best practice, especially on environmental management. However, it is not clear how well these voluntary initiatives are working.

One problem is lack of information. Disclosure requirements are minimal and those that do exist, such as the Toxic Release Inventory, cover only domestic operations. Many companies provide information about environmental performance in annual reports or on their websites. However, it is based on internally generated data—there is no external verification of performance. Even under management systems like ISO 14001, externally verified reports rely on self-selected and often non-comparable goals.

Another problem is the lack of comprehensive sustainability planning by local and regional governments where high tech companies are located—whether in northern California or Hsinchu Province, Taiwan. In the absence of regional environmental objectives where high tech companies cluster, companies individually set their own standards. Even if met, these company objectives may fall far short of what could be considered sustainable resource use—and of what would be possible if targets were set in concert with regional environmental indicators and sustainability plans.

GOING GLOBAL: THE EMERGING STRUCTURE OF THE INDUSTRY

The high tech or Information Technology (IT) sector is one of the fastest growing and most important segments of the U.S. and the global economy.[4] The Standard Industrial Codes manual defines the IT sector to include hardware, software, and communications. Hardware includes computers and printed circuit boards, semiconductors, office equipment,

other electronic components, and instruments for measurement and laboratory analysis.

The IT sector's share of U.S. GDP grew from 4.9 percent in 1985 to an estimated 8.2 percent by 1998.[5] Revenue is expected to be $175.4 billion in 2001, down from $204.4 billion in 2000. Global demand for high technology is broadening in geographic terms. The Semiconductor Industry Association (SIA) forecast reports that the two largest semiconductor markets—the Americas and Asia-Pacific—today make up less than 60 percent of the total worldwide market. Ten years ago, the United States and Japan alone accounted for two-thirds of the global market.[6]

Global Division of Labor

For the most part, IT hardware is sold under the brand name of some thirty manufacturers, most of them U.S., European, or Japanese (Table 5). Very few—Santa Clara-based Intel Corporation is the significant exception—produce and assemble their own products. Beginning in the 1990s, hardware firms, both semiconductor manufacturers and computer makers, increasingly began contracting out parts of their production to third party suppliers. Many American and Japanese computer manufacturers, for example, obtain semiconductors fabricated in Taiwanese plants, and assemble computers in locations around the world. Companies who supply components, like Seagate Technology, do not produce their own chips at all: they are "fabless" and depend entirely on suppliers to provide parts that Seagate assembles.

A growing proportion of the industry is serviced by contract manufacturers like Flextronics and Solectron, which produce to the specifications of the name brand manufacturers, and also produce wireless telecommunications and related products. Begun in earnest in the 1980s, contract manufacturing had grown into a $120 billion worldwide industry by 2001 and is forecast to skyrocket to over $250 billion by 2004 (Figure 3).[7] Throughout the industry, flexible production is the goal: keeping costs low while being able to switch product lines or technical specifications quickly in response to changing demands.

The most elaborate production networks have appeared in Asia, where the electronics sector has been a driver of export-oriented growth since the 1960s.[8] Japanese, U.S., and European firms define product characteristics, spearhead research and management functions, and produce the highest-value systems and components domestically. Korean firms have emerged as "fast followers" in appliances and components with large-scale economies. Taiwanese firms are prominent in computer

chip production and produce both low value components and high value niche products.

Table 5			
Overseas Sites of California-Based High Tech Companies			
Company	**Product**	**Net Revenue (U.S.$ billions, FY 2001)**	**Sites of Overseas Operations**
Advanced Micro Devices	Semiconductors, Memory chips	4.6	China, Europe, Japan, Malaysia, Thailand, Singapore
Agilent Technologies	Semiconductors	10.8	Australia, China, Europe, Japan, Korea, Malaysia, Singapore
IDT Technologies	Semiconductors, Memory chips	0.7	Philippines, Malaysia
Intel Corporation	Semiconductors, Memory chips	33.7	China, Costa Rica, Europe (Ireland), Israel, Malaysia, Puerto Rico, Philippines
Hewlett-Packard	Hardware, Peripherals	48.8	Canada, Europe, Mexico, Brazil, China, India, Japan, Korea, Malaysia, Singapore
National Semiconductor	Semiconductors, Memory chips	2.1	Malaysia, Philippines, Singapore, Scotland
Seagate Technology	Hard drives	*	China, Europe (Ireland), Malaysia, Singapore, Thailand
Solectron	Product manufacturing	14.1	Australia, Brazil, Europe, India, Indonesia, Japan, Mexico, Singapore, Malaysia, Taiwan, China

*Private company, figure not available. (Source: company websites and annual reports)

Figure 3

**Percentage of Outsourced
Information Technology Manufacturing**

(Source: Technology Forecasters) (E = estimate)
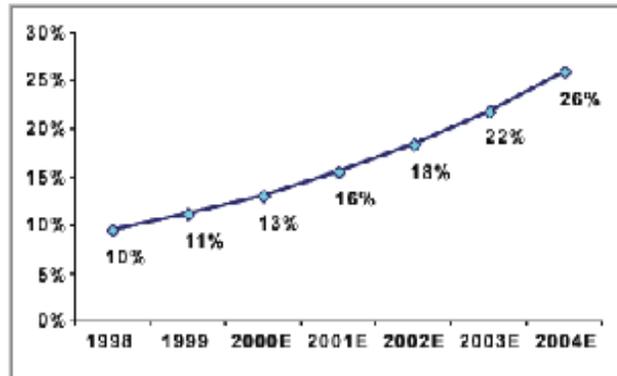
Singapore is the regional administrative base and acts as an assembly platform for high value products. Malaysia is an intermediate value assembly platform. Thailand, the Philippines, Vietnam, Indonesia, and increasingly, China, undertake mostly low value assembly.[9] India, already a leader in the software sector, is aggressively trying to improve its manufacturing capabilities; on a smaller scale, Costa Rica is trying to develop a Latin America-focused software industry.

Since 1989, U.S. and Asia-based multinationals have concentrated their European investments in the established investment zones in Great Britain. Scotland, for example, hosts computer plants belonging to Sun Microsystems, National Semiconductor, NEC, and IBM, and has earned the name "Silicon Glen." Ireland is also an important site for semiconductor production, while assembly is now extending to Central Europe.[10] Contract manufacturers have been especially aggressive in that region, opening plants in Hungary, Poland, and the Czech Republic. With the exception of an Intel assembly plant in Costa Rica, an assembly corridor in Guadalajara, Mexico, and a few Brazilian firms, little high tech manufacturing takes place in Africa or Latin America.

Firms do not simply seek out the lowest labor costs. Specialized product and process capabilities, adequate infrastructure (especially energy), and skilled labor are equally or more important. According to industry officials, the main reasons for overseas expansion, at least in semiconductors, are to diversify risk and be close to markets. The location of peripheral and final assembly operations in a range of electronic products is more likely to be driven by labor cost concerns.

Seagate Technology, for example, the world's largest disk drive manufacturer, is heavily invested in Southeast Asia. Seagate set up shop in Singapore in 1982 and rapidly expanded operations in Malaysia and Thailand. By the mid-1990s, Seagate employed over forty thousand in Thailand and twenty thousand in Malaysia, most of them of non-managerial status and the overwhelming majority low-paid women. In the last few years, however, jobs have been shed rapidly as the disk drive has shrunk in size and cost. The impact on local electronics-dependent communities has been devastating.[11]

Industry structure is highly dynamic. Taiwanese companies, for example, are beginning to shift some of their low-end manufacturing operations to China, creating complex supply chains that reach from China through Taiwan, then to Singapore or directly to the U.S. or Japan. A recent poll by the Taipei Computer Association found that 90 percent of Taiwan-based high technology companies had invested or planned to invest on the mainland. By some accounts, China could become the world's largest producer of high tech hardware within a decade.[12]

Leaders and Laggards

The world of multinational chip, semiconductor, and other IT hardware companies is divided into two tiers. On the first tier are leading edge companies whose competitive advantage is based in large part on being technological innovators. These name brand companies invest heavily in research and development, have a technically skilled workforce, and push the envelope in terms of production processes and products. They tend to have newer plants and more employees. Most sell to consumers or industry under their own brand name and invest significantly in building and protecting their reputation.

Leading-edge companies tend to have relatively sophisticated environmental management systems (EMSs) and dedicated environmental health and safety staff, including internal monitoring of environmental impacts. They generally provide some public information on their environmental commitments.

On the second tier are companies who derive their competitive advantage not from being innovators but from serving mass markets with relatively stable products. Second tier companies also include contract suppliers who sell everything from peripherals to full low-end computers, but generally do not put their own name on the final product. These companies spend less on research and development, utilize older and dirtier production technologies, and employ lower skilled and lower paid

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labor than first tier companies. Laggards in technology, they tend to lag in EMS implementation and staffing, make available less information on environmental and social practices, and generally have a worse environmental record.

Both leaders and laggards are heavily enmeshed in external subcontracting and sub-subcontracting relationships, primarily for generic products such as motherboards. Companies in Taiwan, for example, are major suppliers for brand name U.S. companies, while they themselves have extensive subcontracting relationships with companies in southern China.

Within the U.S., subcontractors span the gamut from small and medium-sized *bona fide* companies to shady sweatshop operations involving piecework done at home. Whether in Silicon Valley or South China, little is known about the extent or the conditions of home-based production. It is completely unregulated in terms of labor conditions, worker (and family) exposure to toxic substances or emissions to the environment.[13] These supply chain relationships make the division between leaders and laggards a fluid one.

CLEAN AND GREEN OR TOXIC AND MEAN?

The high tech industry enjoys, relative to other industries, an image of being clean and green. In the U.S., the high tech sector has often been embraced by Socially Responsible Investment (SRI) funds. These funds manage retirement and mutual fund accounts by investing in corporate stock in accordance with ethical values and performance. SRI funds evaluate and engage companies on a variety of ethical issues, including their environmental practices, employee and community relations, and human rights policies.

In the bull market of the 1990s, SRI funds had a large exposure to "new economy" technology companies, including semiconductor and silicon chip manufacturers. The British Financial Times Stock Exchange (FTSE) 4 Good index, for example, which offers a series of benchmarks and indices to determine a socially responsible company, includes Intel and Texas Instruments. The oldest ethical index, the Domini Social Index, includes Microsoft, Intel, and Cisco Systems in their top ten holdings.[14]

Some high tech companies rank high in SRI funds because of specific ethical indicators, such as board diversity or the production of regular corporate environmental reports. By and large, however, high tech companies have not been subject to intense scrutiny either of their overseas operations or of a broader range of labor, human rights, and

environmental issues. Calvert Funds, one of the oldest SRI firms in the U.S., is an important exception. Calvert has recently unveiled the first socially responsible technology-focused mutual fund, and indicates they will begin to engage the semiconductor companies on workplace safety and toxics.[15]

Despite its clean and green image, the high tech industry is beset with significant ethical and public policy challenges, including the use of highly toxic materials in production. In addition, high tech companies tend to agglomerate in geographic pockets like Bangalore in India or Penang in Malaysia. Rapid growth in the absence of adequate physical infrastructure, including housing and transport, has triggered a host of social impacts such as traffic congestion and high housing costs.

Another concern is the digital divide. The global spread of information and communication technologies may exacerbate the difference between plugged-in elites and poor people who may not have access to electricity, much less state-of-the-art information technology. A number of high tech companies have identified the digital divide as both a problem and a market opportunity.[16]

Toxic and Hazardous Materials

The semiconductor manufacturing process involves the use of a wide variety of gases and materials to etch, clean, and process the chips. Many of those substances are toxic to humans or other life, whether absorbed by workers during the production process, or emitted as waste into air, water, or land. The bunny suits worn by workers in "clean rooms" are intended to protect the purity of the product, not necessarily the exposure of workers. Due in large part to careless use of such chemicals in the past, Silicon Valley has the largest concentration of Superfund toxic sites in the United States.[17] As the industry has expanded its global reach, the risks have spread as well.

When pressed by clear scientific evidence of hazard—and the threat of regulation—the high tech industry has been able to respond quickly. The rapid reduction in the industry's use of ozone-depleting chemicals, long used for cleaning chips, is a telling example. The Semiconductor Industry Association reports on its website that reportable ozone-depleting emissions from the industry have dropped by 75 percent from their 1987 level.[18] SIA members have also signed a Memorandum of Understanding with the EPA to significantly reduce use of perfluorocompounds (PFCs), one of the most widely used chemicals and a potent greenhouse gas.

However, two structural problems make it difficult for the industry to make steady progress toward improvements in health and safety. First, the speed at which new products and technologies are introduced makes it difficult to assess potential risks. Risk assessment takes years of trials, while production processes change continually.

According to industry analyst Jan Mazurek, "Chip plants use, emit, and transport a host of constantly shifting substances that are known to be among the most toxic used in contemporary industrial production."[19] Because the chemical mix is constantly changing, it is difficult to determine precisely which chemicals may cause problems.

The speed at which new products and technologies are introduced is driven in large part by marketing. Companies work hard to gain market share by being "first movers," that is, by creating and marketing new products and new features. Moore's Law, which decrees ever-smaller chips, is both an engineering and a marketing strategy.

Industrial hygienists working in the industry admit that accelerated product cycles mean that, for many substances, they have little idea what, if any, occupational or community health hazards exist. For others, the chemicals themselves have been around for years, but the combinations of chemicals, and their potential cumulative effects, are new. And in the case of substances with known hazards, such as PFCs, no substitute chemical or process has yet proven viable on an industrial scale.[20]

The second structural problem stems from lack of information. Industry leaders complain that they themselves are often in the dark in relation to the characteristics and risks associated with different process chemicals because they receive inadequate information from the chemical manufacturers. Regulators, who largely depend on company-produced studies for their information, are even further behind in identifying potential problems.

Nor is it clear how a chemical-by-chemical control regulatory strategy could ever keep up with the continuing changes in production processes. In this area, traditional exposure limits may always be inadequate. New approaches are sorely needed, especially product and process design innovations that reduce or eliminate the use of toxic chemicals.

Air and Water Pollution

The earliest environmental problems in Silicon Valley involved toxic solvents and wastes seeping into groundwater, often from underground tanks or pipes that ruptured or leaked. There are more than 150

contaminated groundwater sites in Santa Clara County.[21] The problem is not nearly as significant today in California, as tanks and pipes are generally maintained above ground, underground tanks must be double-walled, and wastes are recycled or reused. However, semiconductor production sites overseas still grapple with significant problems of waste storage and disposal.

In Taiwan, for example, local villagers have complained about severely polluted rivers and groundwater, including major sources of drinking water caused by toxic discharges traceable to the high tech industry. The high tech companies contract with licensed waste handlers to transfer the waste off-site, but these then subcontract with unlicensed haulers, who dump some of the waste into the local rivers.[22]

In the Philippines and Costa Rica as well, the lack of appropriate hazardous waste disposal facilities means that companies must ship their wastes back to the country of origin, creating transport hazards and the risk of careless handling by hauling and disposal firms. In India there are only three licensed hazardous waste dumps in the entire country, and much solid waste containing heavy metals and other hazardous substances is simply landfilled. Despite the tightening of regulations in 2000, the government of India still has not produced guidelines for waste management in the IT sector.[23]

Conventional and hazardous air emissions were once a significant source of air pollution in Silicon Valley.[24] Conventional air pollutants contribute to smog, and in high tech manufacturing come largely from the use of volatile organic solvents used in cleaning. Rapid innovation, and a combination of better pollution control, process changes, and chemical substitution has allowed leading edge firms to reduce both conventional and hazardous air pollutants in their facilities. For example, between 1990 and 1994 Intel's semiconductor production increased by 98 percent, but volatile organic compound (VOC) emissions during the same period increased only 18 percent.[25]

At this point, air pollution problems in Silicon Valley stem more from the number of cars choking local roads than from the high tech industry. In the developing countries where much low-end manufacturing has moved, however, air pollution problems may be significant and may come from surprising sources. In India, for example, the use of diesel generators to provide a reliable power source to high tech companies has exacerbated air pollution problems in urban areas.[26]

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End-of-Life Waste Disposal

Once computers and other high tech devices are born, they have to go somewhere to die. Accelerated product cycles and rapid technological change mean that the lifespan of a given IT product gets shorter and shorter. According to a report for the National Safety Council, some 315 million computers will become obsolete in the U.S. between 1997 and 2004.[27]

What happens to all those old computers? Many remain stored in people's closets and garages. Others end up in local landfills. According to the EPA, only 13 percent of the 20 million computers that became obsolete in 1998 were reused or recycled.[28] Recycling efforts have been slow to gain momentum, largely because the market for scrap metal and plastic does not pay enough to make disassembly and reuse profitable.

Consumer demand for recycling, however, is increasing. According to a March 2002 report, "Exporting Harm: The High Tech Trashing of Asia," some 12.75 million computers (including monitors and keyboards) will be recycled in 2002. The report estimates that 50 to 80 percent of these recycled computers will be exported to developing countries, especially China, India, and Pakistan, for disassembly.[29]

Computers include a host of substances that make it impossible to safely dispose of them in a landfill, including lead, cadmium, chromium, and mercury, as well as brominated flame retardants. Each computer monitor contains an average of four to eight pounds of lead, which can leach into landfills and into groundwater. In China, open burning of wires and other parts is common in recovering metals such as steel and copper. Dioxins and furans can be expected due to the presence of polyvinyl chloride (PVC) and brominated flame retardants in the electronic refuse.[30]

Computers and peripherals also use plastics and other potentially recyclable materials that have not been engineered for easy or safe disassembly or reuse of parts. Disposal of plastics by incineration, the preferred alternative in many parts of Europe, releases dioxins, extremely toxic substances now subject to international phase-out.

One strategy for dealing with end-of-life computer and electronic device disposal is to make producers responsible for it. Beyond cost internalization, the concept of Extended Producer Responsibility for the product from birth to grave means that producers have powerful incentives to minimize waste and maximize reuse. At its most effective, these incentives can spur redesign of production processes to eliminate the use of toxic substances altogether.

The U.S. debate over producer responsibility has been driven largely by a European Union directive on Waste from Electrical and Electronic Equipment (WEEE Directive). Under the directive—approved by the European Parliament in April 2002—companies must pay for the collection and disposal of computers and other electronic goods from consumers as well as businesses. To protect against "free riders," the law requires companies to provide upfront guarantees of future financing of disposal.[31] Spurred by European regulatory efforts, a global coalition of NGOs, municipal governments, and others have created an international network on e-waste (GAIA) to push for industry take-back.

Industry response has been mixed. The U.S. Electronic Industry Association fought the WEEE Directive tooth and nail, claiming that it is unnecessary, that it would single out the industry and saddle it with the costs of cleaning up historic waste, and that it is a barrier to trade.[32] On the other hand, individual companies have implemented voluntary take-back programs, arguing that no legislation is needed.

Sony, for example, now runs a take-back program in Minnesota, and IBM and HP have implemented customer take-back plans in the U.S. In addition, the Electronic Industries Alliance is participating with governments and NGOS in the National Electronics Product Stewardship Initiative (NEPSI). NEPSI aims to establish a take-back and recycling infrastructure for the U.S. [33]

Industry consortia, including U.S. EPA's *Design for the Environment Printed Wiring Board Project* (and Japanese companies in the *Global Environmental Coordination Initiative*) are also working to develop alternatives to lead for soldering.[34] A few companies including Sony, Kodak, and Matsushita have announced they will switch to lead-free solder. To date, a majority of the industry has not followed suit.

Rather than mandatory take-back and toxic phase-outs, the U.S. industry has proposed shared responsibility with municipal waste handling systems, or fees levied on consumers to fund take-back programs. Even where such programs formally exist, however, it is unclear how well they are being implemented, outside of European and U.S. markets. Field studies revealed, for example, that the Indian sales office of a well-known U.S. computer maker had no knowledge of the company's much-touted take-back programs. On the other hand, the existence of a vast "gray market" for used computer components in India may alleviate pressure on companies to resolve the disposal problem.

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Water and Energy Use

The manufacture of silicon chips and semiconductors requires large quantities of both clean water and reliable energy. A fab producing six-inch silicon wafers uses two million gallons of de-ionized water per day.[35] Indeed, industry officials have indicated that a lack of adequate water and energy infrastructure has limited investment in new silicon chip and semiconductor fabs in developing countries.[36]

Within the U.S., large semiconductor plants have been built in arid or semi-arid areas like Arizona and New Mexico, creating local concerns about the impact of large-scale water use on aquifers and water quality. Intel's water use at its New Mexico facilities, for example, rose by 30 percent between 1994 and 1995. As Intel has expanded its operations in New Mexico, water tables have concurrently dropped by as much as ten feet per year in some areas as a result of over-pumping.[37]

Intel's thirst for water has forced it to buy from a finite supply of water rights that independent *acequia* farmers depend on, a move that prompted widespread local opposition. In its 2000 EHS report, the company reported a $15 million investment in water reclamation and reuse facilities that had saved 800 million gallons of water in New Mexico.[38] While this is a significant improvement, the statistics do not indicate whether it represents best practice or if it is enough to ensure the sustainability of water supply in New Mexico.

The energy impact of the high tech industry is complex. The industry overall uses relatively little energy in production compared to "old economy" sectors like chemicals or steel. However, the manufacture of semiconductors and other high tech components is highly energy intensive.

Energy use may comprise up to 40 percent of a semiconductor manufacturer's total costs, primarily because semiconductors must be produced under extremely sterile conditions. Clean room facilities run high-powered fans, air pumps, and vacuums to circulate the air and maintain the proper conditions. High energy costs mean high potential for savings through energy efficiency. According to Amory Lovins of the Rocky Mountain Institute, a 92 percent reduction in carbon emissions per microchip is currently profitable.[39]

For several reasons, however, most high tech manufacturers have failed to aggressively pursue energy efficiency. There is a general reluctance to disclose internal company data that would enable the creation of an industry-wide benchmark for energy use. There is a paucity of information

on state-of-the-art building designs that are transferable to mainstream users. Companies, in their quest to be first to market, focus research and development on products and leave building design and operation to traditional systems.

Energy use is a prime example of rhetoric falling short of action. The semiconductor industry prides itself on its climate change mitigation partnership with the EPA while largely ignoring the energy intensity of its own operations. The industry has responded to energy concerns primarily through the EPA's voluntary Energy Star program and through the development of sleep functions that minimize the use of energy when the computer is not being used.

One company that has aggressively pursued energy efficiency as a key component of profit-making is the European firm STMicroelectronics, the largest chip manufacturer in Europe. It may be the only company in the industry with a Corporate Environmental Steering Committee chaired by the CEO. The company is on its way to achieving its goal of being carbon neutral by 2010. At the company's state-of-the-art facility in Singapore, energy consumption per unit of production was reduced by a factor of 2.5 from 1991 to 1997. Energy savings increased by 29 percent over the period 1994–2000.[40]

In addition to its own use of energy, the growth of the high tech industry has significant implications for societal energy use. Expanding use of computers increases demand on the energy grid. Rising demand, however, may be offset by gains from reduced driving through e-commerce and telecommuting, less construction of new stores and offices, inventory reductions, and an increased ability to monitor and pinpoint energy-saving possibilities. A recent study concludes that the U.S. economy is becoming somewhat less energy intensive, due in large part to expanding use of information technology.[41]

Worker Health and Safety

The highly toxic character of silicon chip, semiconductor, and computer production poses potential health and environmental risks to both communities and workers. The American high tech industry has, to date, been unwilling to seriously grapple with potential long-term risks to human health. Companies have consistently refused to carry out or permit studies on the health effects of working in different aspects of high tech production, especially so-called clean rooms.

Only one large-scale health study has ever been undertaken and made public. Carried out by Dr. Joseph La Dou in the 1980s, that study found,

among other things, significantly higher miscarriage rates among women who worked in clean rooms.[42] Industry concluded that the most likely culprit was glycol ether, a class of solvents that has since largely been phased out of use, at least in the U.S. Other studies were less conclusive, finding that glycol ether was only one of seven chemicals linked to higher spontaneous abortion rates.[43]

Moreover, other chemicals such as replacement solvents and etching chemicals may be equally or even more problematic. Follow-up studies of miscarriage rates have not been done. Companies that report on their occupational health and safety records often combine accident rates, which are below average, with illness rates, obscuring the true frequency of chemical exposure incidents. According to a recent medical study, the manufacture of microelectronics products is accompanied by a high incidence of occupational illnesses, which may reflect the widespread use of toxic materials.[44]

Moreover, while most of the focus has been on clean rooms, significant risks may arise even from exposure to well-known hazards like lead. A UC Berkeley master's thesis documented potential sources of lead ingestion beyond OSHA limits in circuit board assembly plants in Silicon Valley. Surprisingly, the most prevalent source of high exposure was the cleaning and maintenance of wave solder machines, which can be done either by solder machine operators or by separate maintenance services.[45]

According to the same study, inadequate monitoring and communication of hazards, especially to a largely limited English-speaking workforce, exacerbated the potential risks of overexposure. Small and medium-sized assemblers tended to have far fewer protections in place. Although companies often point to a dearth of OSHA violations to argue that no problem exists, the study interviewed a number of OSHA inspectors and concluded that both inadequate staffing and limited monitoring techniques (especially of night/weekend maintenance work) could easily result in underestimating violations.[46]

Lead is used as solder in circuit board assembly. It is also released upon disassembly, for example for recycling, creating new hazards for workers in the nascent computer recycling industry. Management standards for exposure to hazardous metals and organic substances in disassembly operations do not yet exist in the U.S., much less overseas. These hazards can only grow as states and countries discourage disposal of old computers in municipal waste streams.

In general, however, the industry has been largely reluctant to proactively confront health and safety issues. Companies fear litigation brought on

behalf of workers claiming that their cancers and other illnesses were caused by exposure to toxic substances at work. Suits have been filed against IBM and National Semiconductor on behalf of workers in New York, California, and Scotland. Another group of workers in Taiwan has accused RCA (now owned by French conglomerate Thompson Multimedia) of exposing them to substances that caused high rates of cancers.[47]

The case against IBM in California, for instance, alleges that the company maintained a "corporate mortality file," a database showing disproportionately high rates of brain and other cancers among IBM workers. According to the complaint, deaths from brain cancer occurred at a rate two and a half times greater among IBM workers than among the general population.[48] Alleged exposure pathways include the concentration of organic chemicals caused by the re-circulation of clean-room air, exposure to known carcinogen xylene in epoxies, and the use of hazardous solvents.[49]

The British Health and Safety executive reported in December 2001 that its study of National Semiconductor workers in Scotland showed higher than average rates of four different kinds of cancer, including brain cancer, but also found that overall worker mortality was lower than average. The report urged more studies before definitive conclusions could be reached.[50]

One of the cases against IBM was recently settled for undisclosed terms, but the continuing threat of litigation has made companies hunker down and refuse to investigate. In 1998, after initially agreeing, the Semiconductor Industry Association refused to cooperate in a health study proposed by the U.S. Environmental Protection Agency and the California Department of Health Services. The EPA-funded study was to examine cancer and birth defect rates among California semiconductor workers.

Under intense pressure, the SIA agreed in 1999 to appoint a scientific advisory committee to review existing data and decide if broader impact studies are needed. In 2002 the SIA announced that it would "conduct a preliminary review to determine if it is possible to conduct" a study of health risks.[51] The results of such a study may require substantial innovations in chip production. But public health is at stake. As the San Jose Mercury, Silicon Valley's leading newspaper, opined, "Chip makers must do toxic chemical studies, not just consider them." [52]

Labor Rights and Working Conditions

Much of the focus on corporate social responsibility in chip and semiconductor manufacturing has been on improving environmental

performance. Almost all companies refer to EHS commitments in their mission statements and provide some data as to environmental impacts.

Labor standards and working conditions, however, are not on the industry's radar screen, whether in the U.S. or globally. Despite early academic and activist concerns about women workers in high tech assembly lines,[53] the prevailing view is that the industry employs mostly highly paid and qualified engineers. In terms of U.S. public policy, the industry's main labor concern has been the lack of sufficient highly trained personnel, a gap that the industry has tried to overcome by the practice of "bodyshopping," especially in India.[54]

Public concerns about labor rights have also largely bypassed the high tech sector. In high profile campaigns, a wide array of consumer, student, ethical investor, faith-based, labor, and other groups have targeted the apparel, retail, footwear, and sporting goods industries for the employment of sweatshop labor in their global supply chains. At the heart of their concerns are low wages, mandatory overtime, and the lack of protection for workers' right to advocate for themselves.

The blindness to labor concerns means that most high tech companies have no internal manager or function within human resource departments corresponding to EHS in terms of corporate accountability issues related to labor. Indeed, researchers for this report generally found it hard to find the right company person to interview about any issues relating to labor standards and worker protections beyond health and safety. If such functions exist, they are dispersed among human resources, community, government, or investor relations, and legal and procurement/supply chain functions.

One reason that high tech companies are slow to recognize the importance of a social responsibility approach to labor management may stem from the actual or mythological origins of some of the leading companies. These leaders originated with a "bunch of guys in a garage shop" who worked long hours for no pay to pursue an inspired vision. Years and thousands of employees later, some companies continue to scoff at the notion that labor rights and standards are as much or even more a part of the new economy as the old.

Temporary Workers, Mandatory Overtime, and Occupational Stratification

Flexibility—the ability to grow and shrink in size, composition, and location of its staff at all levels—is one of the industry's primary needs. The demands of just-in-time manufacturing and rapid product turnover have made flexibility even more of an imperative. Yet by pursuing labor

flexibility at all costs, the industry has created not only a footloose labor force with little commitment to a company or location, but also a tiered—and a tired—labor force.

The tiered structure of the labor force stems from the industry's widespread reliance on independent contractors and temporary labor. Independent contractors ostensibly work for themselves, and bring their own tools and work techniques to each jobsite. They are not considered employees so the company need not pay them benefits, pension, or give them vacation and sick time. The company is also not generally liable for their actions or their injuries. Temporary workers generally are employed by a private employment agency, which contracts them out as needed. Workers from several employment agencies may converge at a single site.

Both independent contractors and temporary workers are widely used in the high tech industry. Companies will often spin off parts of their operations to separate, independent companies. For example, IBM's San Jose facility uses independent contractors to handle chemicals stored on site, while Intel in Costa Rica spun off their janitorial service.[55] As mentioned, waste handlers are typically independent contractors. The strategy insulates the core company from liability or labor problems, and may also multiply employment opportunities if the spun-off business finds additional customers. But it also makes it more difficult for both the companies and outsiders to track responsibility, measure performance, and prevent problems.

Temporary workers may include packers, maintenance crews, and line workers, but also highly skilled engineers, software designers, and writers. The word "temporary" is a relative term: at Microsoft's Redmond, Washington campus, some temporary workers have been at the company for many years. They work on the same projects as permanent employees, but they get no health insurance, overtime pay, vacation leave, or stock options.[56] In Silicon Valley, temporary packing workers complained of headaches and respiratory problems after working with HP printers, but neither the company nor the temporary agency was willing to take responsibility for investigating health and safety problems at the packing operations.[57]

For an industry whose image connotes horizontal management structures, casual dress, and a single cafeteria for the CEO and assembly worker, the high tech industry remains highly stratified by ethnic origin and gender. At the top are white and Asian men. Under them are immigrant engineers and technicians, especially from South Asia, who will accept wages and working conditions that are light-years better than those at home but still far less than their non-South Asian counterparts. At

the bottom are the line workers, who in California are largely Mexican, Vietnamese, and other Asian immigrants; and the cleaning crews, who are largely Mexican.

In overseas locations as well as in Silicon Valley, an overwhelming majority of assembly and testing workers are women, mostly young women. In 1998, a survey of sixteen large multinational electronics companies in Penang, Malaysia, showed that 77 percent of the jobs described as managerial, professional, supervisory, or technical were held by men, while women held 87 percent of the jobs classified as clerical, general, or semi-skilled (i.e., assembly).[58] Similar percentages characterize labor forces in Silicon Valley.[59]

To their credit, some employers have recognized the problem and have tried to expand educational and training opportunities for women that would allow them to advance through the ranks. Other companies support technical education programs through universities or technical schools. Intel's Teach for the Future program promotes computer literacy, while other programs seek to enhance technical education at the university level, although without a specific focus on women. Most major high tech MNCs have supported technical education in the countries where they operate. But the persistence of these disparities two decades after the gender gap in high tech production was first analyzed and discussed with the companies suggests that more may be required.

The U.S. high tech industry has also been plagued with problems of racial stratification and exclusion. According to the Bureau of Labor Statistics, only 175 of 1,434 Silicon Valley high tech companies working on federal contracts reported statistical information about the racial composition of their staff. Within the 175 companies, minorities made up 35 percent of 172,000 employees—a glaringly low figure in the context of California's heterogeneous population.[60]

In a 1999 report, a White House advisory group noted that African Americans, Hispanics, and Native Americans make up 25 percent of the total U.S. workforce, but only 6.7 percent of the information and computer science workforce and 5.9 percent of the engineers. Asian Americans, who compose 4 percent of the nation's population, tend to be over-represented, at least double their proportion to the general public.[61]

Freedom of Association and Unionization

In an industry where flexibility, management prerogatives, and secrecy are paramount, labor unions are unlikely to be welcomed. Indeed, the high tech sector has been highly resistant to the creation of workers' organizations. In part, technical workers are unlikely to see themselves as

workers in need of unionization. The relatively high salaries and superior working conditions, at least compared to other industries, means that people are reluctant to jeopardize their positions by making trouble. There is, in many companies, a sense of ownership, encouraged by stock options, as well as perks such as access to exclusive schools or housing areas. Companies will often set up worker committees to air grievances or consult with management.

Structural characteristics of the industry also make it hard to organize. Many technical workers are considered exempt from National Labor Relations Act protections. Temporary workers are considered employees of the temporary personnel agency, not the company they report to in the morning. In order to create a bargaining unit, they must involve all the temps working for a given agency, who they have no way of identifying or contacting, and whose interests and concerns may be quite different.

Contracted workers, like janitors, may also find that no one—not the contracting agency nor the client company—takes responsibility for working conditions. In some countries like Malaysia, local law prohibits meetings of more than five people, in effect making any type of organizing drive impossible.

Supply Chain Management

The oversight of global supply chains presents particular ethical dilemmas and management challenges for the high tech industry. Even for a single manufacturer, companies, regulators, and the public have trouble keeping track of the environmental and social impacts. With the exception of Intel, however, almost all high tech hardware producers now use outside suppliers to make part or all of their products. These long and increasingly complex supply webs span many countries and may include different combinations and collaborations among companies.

The amount of information and monitoring needed to assure that suppliers are acting in environmentally and socially responsible ways (leaving aside the definitional problems) is daunting for any company. Procurement and supply chain managers are hard-pressed simply to coordinate and manage time-to-market, product mix, and quality issues, much less these additional tasks.

The diffusion of responsibility through supply chains can exacerbate problems. Subcontractors tend to be small or medium-sized firms, with razor-thin profit margins and less ability to dedicate staff to monitoring environmental or social concerns. Moreover, the potential pressure for improvement that comes with brand name identification is absent.

Silicon Valley Toxics Coalition's annual ranking of access to information about social practices showed that those manufacturers who put their own names on the final product scored consistently higher than those who produce under contract for other brands.[62] Labor problems in Silicon Valley have concerned smaller companies who sell to the large industry leaders. Toxic hazards, and lack of knowledge about them, are also worse among small companies. The problem of managing suppliers afflicts both leaders and laggards. Indeed, laggards are often suppliers to leaders.

Many name brand computer companies have supplier policies that say they will prefer environmentally responsible suppliers. Advanced Micro Devices' Total Supplier Rating System, for example, includes an annual assessment of suppliers, which covers their environmental initiatives. Intel's supplier contracts contain EHS requirements, and the company says it is committed to working with suppliers on improving environmental performance. IBM requires all suppliers to comply with applicable laws and regulations, and carries out substantive environmental evaluations for those suppliers whose operations entail significant environmental risk or where their work is unique to IBM. Hazardous waste and product disposal vendors are periodically scrutinized as part of EHS audit procedures.

Hewlett-Packard (HP) has the most extensive requirements for suppliers. The company says that it requires its suppliers to develop and adhere to an environmental improvement policy, have an implementation plan with defined metrics, and eliminate certain substances from manufacturing. Wastes must be disposed of "in compliance with local waste disposal regulations," and substances that may be problematic in disposal, like nickel-cadmium batteries, must be labeled. In addition, HP encourages a wider range of environmentally responsible behavior from suppliers. Apple, Sun Microsystems, and other major manufacturers likewise encourage suppliers to be environmentally responsible and to minimize waste, packing materials, and the like.

It is difficult to evaluate, however, whether these policies are operative in practice. Suppliers with an adequate environmental management system in place might be more likely to achieve superior, or at least adequate, performance. ISO 14001 itself encourages but does not require supplier adherence to the standard, and to date that seems to be the dominant response of large IT firms as well. Few firms require an outside ISO certification of their suppliers. The main monitoring and enforcement mechanism for all supplier-related policies appears to be questionnaires; there are just too many suppliers to make on-site inspection feasible for more than a handful of the most sensitive suppliers. Only if a problem

arises, or, in some cases, if the good supplied entails particularly acute environmental risks, do compliance officers from headquarters pay a visit.

From the suppliers' point of view, the various requirements of multiple buyers, each with their own questionnaire and set of conditions, can be overwhelming. The smaller the supplier, the more onerous these requirements can become. The area of supplier performance cries out for sector-specific standardization of requirements and for greater monitoring, especially independent monitoring and/or verification.

Unfortunately, attempts at independent monitoring confront the companies' unwillingness to disclose the names and locations of suppliers. In a rapidly changing industry where profit margins on any one component can be miniscule, companies worry that disclosing the names of suppliers to the public (or even to independent verifiers) could result in the information being passed on to competitors. A credible monitoring system would have to build confidentiality concerns into its design, and balance them against the public's need for disclosure of health or environmental hazards.

CASE STUDIES

High tech has been seen as a cutting edge industry, offering great economic development benefits in terms of jobs, knowledge, technology transfer, and boost to local supplier companies. In large part, however, environmental and social costs have been ignored.

This section presents synopses of the case studies commissioned for this report spanning Taiwan, Thailand, India, Malaysia, and Costa Rica.[63] It also scans some of the key environmental and social issues at stake in Silicon Valley. The studies were based on extensive interviews with company and government personnel, as well as academics, NGOs, and labor groups.[64]

Taiwan: Toxic Legacy

Taiwan's rapid ascendance into the global market by way of the Information Technology industry has wrought an economy envied by most developing nations. The government of Taiwan played a strategic role in the development of a high tech sector by promoting policies that attracted IT investment and by building the needed infrastructure. A highly

successful IT industry has been a major provider of employment. IT workers are generally highly educated and skilled—approximately 38 percent have a bachelor's or an advanced degree.

Between the 1970s and 1990s, Taiwan emerged as an important player in the global IT industry. It became an original equipment manufacturer for leading U.S. and Japanese personal computer firms including Compaq, Dell, Hewlett-Packard, IBM, Mitsubishi, Motorola, and Toshiba. The most important procurement relationship is with Compaq, which accounted for a third of the value of hardware production in Taiwan in 1998. Hewlett-Packard is also an important player—in 1998, 50 percent of HP personal computers were manufactured and assembled in Taiwan. Taiwanese companies also produce directly for consumer markets under the Acer and other brand names.

In terms of industry growth, Taiwan's economic development plan has clearly worked. But the untold story is that the IT sector has produced a legacy of environmental devastation and growing economic inequality. Moreover, the real impacts are just beginning to unravel.

Directed by Dr. Shenglin Chang and the Taiwan Environmental Action Network, this case study focused on the Hsinchu Science-Based Industrial Park (HSIP), where $60 billion over seventeen years has been invested to develop the infrastructure for high tech production facilities. Unfortunately, investment did not include adequate environmental infrastructure such as waste management facilities with sufficient capacity for the amount and types of waste generated. Nor did it include adequate monitoring capabilities or regulatory oversight. Indeed, for two reasons, companies operating in the Park largely ignored the environmental laws and control mechanisms enacted in Taiwan in the 1990s.

First, the dynamic growth of high tech industries that were based on short product cycles and intensive chemical use made it impossible to develop comprehensive toxic inventories. Such inventories play a key role in controlling and monitoring toxic waste. Second, the local environmental authority in Hsinchu was unable to force the administratively separate HSIP to obey the law. The long-term pro-development policy of the national government and the lack of local autonomy under the fifty-year one-party rule of the Kuomintang, crippled the environmental practice of local governments.

The lack of adequate environmental protection has created a severe and widespread problem of water and coastal pollution. Lacking adequate waste management infrastructure and regulatory oversight, the toxic and

hazardous wastes of the HSIP were apparently—and secretly—dumped in the Kaoping and other rivers.

In July 2000, one of Taiwan's largest waste handlers, the Shengli Chemical Company, was caught in the practice after a dumping incident that severely polluted the Kaoping and left the people of Hsinchu without water for two days (see Box). The incident was widely reported and set off alarm bells throughout Taiwan. For the first time, the public questioned whether the IT industry was in fact clean and what hidden costs they would have to pay for the fabulous wealth accumulated in the last twenty years.

The problem, however, continues. Local NGO environmentalists claim that sixty thousand tons of toxic water is generated daily in the HSIP. However, the HSIP confirms that only twenty thousand tons of wastewater is treated. Investigations by NGOs suspect that the discrepancy, some forty thousand tons, is dumped into the water system and in neighboring villages.

Furthermore, IT companies in the HSIP are not only major polluters but major users of water, accounting for about 31 percent of the region's daily water consumption of 3.5 million tons. Already, four dams have been built in Hsinchu County to meet the region's water demand and a fifth will be completed by 2007. The construction of dam projects has seriously threatened the regional ecosystem, including fish. No well-documented environmental impact assessment was conducted before the dam construction projects started.

The impacts of the IT sector on human health, both for workers and the general public, are largely uncharted. Little data is available and workers are reluctant to report illness or injury or even discuss occupational health and safety issues. There are no labor unions in the HSIP and no attempts by employees to form one. Employees are also shareholders and anxious to protect the company's image. The only health concern HSIP workers reported was gout, which is a general concern in the Taiwanese population.

While data is lacking, public concern is rising, not least because of health problems encountered by former workers in high tech companies, including outside of Hsinchu. A group of former workers has filed suit against RCA, accusing the company of contaminating the ground and drinking water at its Taoyuan facility in the 1980s. The workers have collected evidence of over 1,375 cancer cases, including 216 deaths, among those who worked at the plant and drank the contaminated water.[65]

Shengli Toxic Dumping Incident

When the local nursery owner on Poshan Road noticed white dried dots on the leaves of his plants, he stopped using the groundwater for irrigation. The nursery is located next to the Hsinchu Science-Based Industrial Park (HSIP), the Silicon Valley of Taiwan.

Three years later, the source of what may have caused white dots, as well as the death of thousands of fish along the Ker-ya riverbank and the black and yellow stains with the strong burning-sugar cane smell, has been unearthed.

On July 18, 2000, in a front page story in the China Times, the Shengli Chemical Company was discovered to be illegally dumping hazardous and toxic chemicals in the Kaoping River—one of two major water systems and reservoir for the second largest city in Taiwan. More toxic dumps were found in several creeks in northern, central, and southern Taiwan. For years, Shengli had legally transported waste from the HSIP. However, it had commissioned unlicensed companies to dump it in the river.

The discovery sent shock waves throughout Taiwan, not least because Shengli was ISO 14001 certified. The EPA immediately revoked Shengli's license. Still, it was the largest licensed contractor to manage chemical toxic waste from the HSIP. About 52,000 tons of toxic solvents and 78,000 tons of non-toxic solvents are produced each year in the HSIP. For years, Shengli handled the waste from eighty-four companies, about 80 percent of all the companies operating in the HSIP, including 20 percent of all the solvents.

Jeopardizing drinking water and agricultural production for millions throughout the Hsinchu region, the Shengli incident set off alarm bells in Taiwan. A Cabinet study found gross failures and inadequacies both in waste management capacity and regulatory oversight. Although the HSIP had been in operation for sixteen years, no toxic waste treatment plants had been built. A good part of the waste was apparently dumped in the river, raising questions about long-term health and environmental consequences for the entire water system in Hsinchu.

Source: Shenglin Chang et al., Environmental and Social Aspects of Taiwanese and U.S. Companies in the Hsinchu Science-Based Industrial Park, Nautilus Institute, April 2001.

Company-Community-Government Engagement

The challenge of improving environmental protection and worker and public health and safety in Taiwan will require initiatives by both government and companies. The manufacturing process is divided among firms, with each firm possessing partial knowledge of the chemical uses. Although firms may routinely check the safety of new chemicals, the sophistication of the formulas makes the potential risks unlikely to be known in the short term. Because of the structure of the HSIP, it is impossible to tell which firms are generating the odors and pollutants that end up in the wastewater stream.

The most important initiative is to increase the authority and capacity of local environmental agencies. The only authority the local government has currently is to review and monitor the environmental management system of each company application. Local government also generates very little tax revenue from firms in the HSIP.

Under the policy that created the HSIP, IT companies receive tax exemptions for the first five years of investing and then an additional four years if they invest in another start-up. Tax exemptions translate into huge losses in tax revenue from sales generated at the HSIP.[66] Firms also pay reduced rent in order to lower production costs and attain a comparative advantage in the global market. Finally, the application and review process is expedited, spanning just two months from authorization to start-up at HSIP. All these factors combined to form a weak local governance structure that encourages abuse and mismanagement.

The immense wealth created by the IT sector has dramatically tipped the social and political balance of the Hsinchu region and Taiwanese society. Though many are employed in the industry, local communities have suffered both health problems and social ills, including traffic congestion. The IT elite bear tremendous influence over policymaking by the new government regarding IT industrial development and Chinese-Taiwanese economic relations. There is growing unrest by non-IT personnel and non-HSIP residents over the disparity in public services and the unaccounted burdens placed on Hsinchu as a result of the IT industry.

As a result of growing public pressure, companies have begun to invest in cleaner production, particularly with the help of public and private groups aiding in the establishment of environmental management systems such as ISO 14001, eco-labeling, eco-efficiency, and life cycle analysis. Tax credits and investment incentives have been offered to industry to control pollution, promote energy efficiency, conservation, recycling, and waste reduction. For example, a manufacturer would be eligible for a 5 to 20

percent tax credit for environmental protection equipment or energy conservation technology. To encourage research in innovative technologies, low-interest loans are available for anti-pollution investment plans and construction projects. These resource conservation practices have led to significant economic gains for these companies.[67]

Despite these efforts, it is clear that local residents need to advocate for policy reform in the Hsinchu province. Environmental and labor laws need to be strengthened to ensure the safety of workers and residents in the HSIP. Part of this strategy should include disclosure laws that require information to be easily accessible to the public. Currently, there is no right-to-know law, and local communities and governments have little or no access to information. All these changes will require that the HSIP and Hsinchu city government establish and maintain a good partnership.

In addition to promoting domestic policy changes, it is crucial for Taiwan to seek international expertise on investigating and monitoring high tech industries. The need for information sharing with transnational NGOs is vital, particularly environmental groups with expertise in waste management.

Furthermore, since many firms in the HSIP are semiconductor producers that mainly supply to Silicon Valley companies, this poses a rare opportunity for Taiwanese to engage U.S. stakeholders to use their consumer purchasing power to enforce international labor and environmental standards. In addition, many NGOs in developed economies have insights regarding company-community partnership, which could help Hsinchu residents encourage high tech corporate involvement and philanthropy at the local level.

Thailand: Workplace Hazards

Thailand has experienced dramatic economic growth in recent decades through a strategy of export-oriented, low cost manufacturing. The IT sector, particularly U.S. and Japanese affiliates, makes a substantial contribution to Thailand's overall manufacturing growth. In 2001, electronics accounted for 18 percent of Thailand's total exports.[68] IT companies enjoy a favorable reputation in Thailand for being clean and providing higher than average wages to workers.

Conducted by Thai consultant Tira Foran, this case study focused on nine multinational electronics firms in Thailand. Six firms have significant commercial ties to California:

- Seagate Technology
- Advanced Micro Devices

- Read-Rite

- IBM

- Lucent Technology

- Hana Microelectronics (Thai-owned)

The first three of these companies make hard-disk drive components; the last three assemble and test semiconductors. None fabricate semiconductor wafers. The study focused on occupational health and safety management and labor relations.

The growth of the IT sector in Thailand has come at a significant price in human health, due particularly to workplace exposure to toxics. The response of the Thai government and the companies to chronic worker illness and a series of workplace deaths has been one of obstruction and avoidance.

An overwhelmingly female workforce with minimal union representation and weak government oversight characterizes the IT sector in Thailand. Only one company out of the nine that were studied (Philips) has a union, and there are no current attempts to unionize workers. Regulatory capacity is fragmented and overshadowed by the Board of Investment (BOI), which has a mandate to attract foreign investment to Thailand's low cost industries. On at least one occasion, the Board of Investment used high level government contacts to seriously disable the Ministry of Public Health's only occupational medicine clinic after it investigated the practices at Seagate, an incident described below.

Occupational health problems became visible in Thailand in the early 1990s when four workers at a Seagate disk drive facility died after a pattern of fatigue and fainting. In response to the occurrence, the country's most prominent practitioner of occupational health, Dr. Orapan Metadilogkul,[69] was asked to investigate the deaths. She concluded that approximately two hundred employees had blood levels that suggested chronic lead poisoning, possibly aggravated by solvent exposure. Seagate responded by disputing the study and the causes of the illnesses, and pressuring Thailand's government to prohibit Dr. Orapan from practicing occupational medicine.

Seagate's position on the case was that job applicants already have high levels of lead in their blood due to high levels of exposure from the extensive use of leaded gasoline in urban areas; and that no Seagate employee has ever reached the blood level that is considered dangerous by the Thai government. The divergent viewpoints illustrated that the

evidence was inconclusive and called into question the effectiveness of the Thai occupational safety standards for lead exposure.

In 1993, while the illnesses were heading toward litigation, a separate pattern of illness and death among electronic workers occurred at the Northern Region Industrial Estate (NRIE) near Chiang Mai. Half the companies in the Estate are in the electronics sector, many of them Japanese-owned component makers. By September 1994, between ten and twenty-three people were reported as having died after working in electronics factories.[70] Industry spokespeople denied any connection to the deaths; a Ministry of Public Health team sent in by the government to investigate never made its report public. According to one researcher, "neither government agencies nor researchers have been able to get permission to conduct research on health and safety in the Estate."

Local laws exacerbate the lack of access to reliable health and safety data. Employees have no right to know about occupational hazards, nor do they have a right to decline certain types of work. Firms must set up employee safety committees, but are free to choose their members. The law requires employee medical exams, and many firms have in-house clinics, but employees have no right to choose the doctor, define the scope of examination, or see the results. Each labor inspector monitors, on average, over a thousand sites. Third party organizations are unable to assist in monitoring conditions due to the same lack of information that workers face.

The same issues plague environmental protection in Thailand. Although environmental regulation generally dates from the 1990s, overlapping and confusing jurisdictions among agencies, and the predominance of Ministry of Industry-based agencies in the administration of industrial estates, mean that environmental agencies usually have little clout.

Emergence of Citizen Advocacy

The prevailing state-business alliance marginalizes the environmental NGO community. As a consequence, NGOs are largely not party to the process of environmental policy formulation for important issues such as the controversial Yadana pipeline running from Burma to Thailand. Some toxics such as dioxins are still completely unregulated. Although some companies, such as Seagate and Advanced Micro Devices, emphasize their ISO 14001 compliance, none of the firms appeared to invite third parties to help formulate policies or establish performance targets.

The reluctance of industry managers to make health and safety information available may derive from fears that such information could spur unionization drives. Indeed, one reason for the aggressive reaction

of local Seagate managers to reports of occupational illness may have been a 1991 union organizing drive at Seagate, which resulted in some seven hundred workers being fired.[71]

In 1998, frustrated by a lack of government action in the wake of the Seagate and NRIE incidents, a coalition of civil society groups began campaigning for legislation to set up an independent national institute for occupational safety, health, and environment. The firms themselves had reacted, often under pressure from home offices, by implementing environmental management systems, improving internal health monitoring, and/or looking for ways to cut down on solvent and lead use. On the other hand, none of the firms visited had posted health hazard disclosures.

The proposed legislation contains such measures as independent review of workers' compensation cases and more power sharing between government regulators and victims of workplace injury and illness. At the time of this writing, this proposal and a more modest Ministry of Labor proposal were still under consideration.

The workplace accidents of the 1990s galvanized Thai civil society to organize and demand improvements. Firms in the IT sector pledge "continuous improvement" and claim to keep regular employee health records. However, because they do not disclose this information, it is impossible to tell whether improvement has taken place. Moreover, baseline information such as historical blood lead levels, is lacking. Are Seagate facilities in Thailand safer than at the time of the deaths in the early nineties? Seagate recently opened a new, automated plant, which should result in far less exposure for workers to hazardous substances—although the plant will employ fewer workers.

Another basic unanswered question is whether voluntary health and safety systems in general reduce the risk to workers of chronic occupational illness. The kind of science-based advocacy that has been useful in North America and Europe in applying essential pressure to enforce voluntary systems is minimal in Thailand. An effective environmental health and safety system and the progress of corporate social responsibility in Thailand will depend on the development of this type of credible grassroots advocacy.

The Thai government has a pivotal role to play in increasing worker protection and environmental health. The first steps are stronger disclosure laws, which would strengthen and improve the quality of citizen and labor advocacy. The government could also play a convening role, working to strengthen ties and collaborative initiatives between firms and local communities. Stronger and clearer international environmental,

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labor, and product content/take-back standards will also play a critical role in encouraging both the Thai government and electronics firms operating in Thailand to improve manufacturing processes.

India: Growth without Regulation?

The electronics industry has emerged as the fastest growing segment of Indian industry in terms of both production and exports. Since 1990, market liberalization and new fiscal incentives have led Indian subsidiaries of multinational corporations to make significant investments in the software and increasingly the hardware parts of the IT industry. Centered largely on Bangalore and more recently Hyderabad, India's IT industry has been propelled by active government support and is poised to explode in the coming decade.

The growth of the IT industry is not only transforming India's economy but is also creating new environmental and social problems that the government of India has yet to address. In order to minimize the concomitant pollution, hazardous waste, and quality of life issues that accompany high tech growth, farsighted planning by the government, corporations, and civil society will be crucial.

Conducted by Dr. Radha Gopalan of the Environment Management Centre in Mumbai, this case study analyzed the evolution of the Indian IT sector, the existing and emerging environmental and social issues, and the associated regulatory framework.[72] It also made recommendations on how policy and governance measures can ensure accountability and environmental and social responsibility of the IT industry.

The primary environmental and social issues facing the existing and emerging Indian IT industry are:

- Solid and hazardous waste management both during manufacturing and at the end of IT products' useful lives;

- Phasing out ozone-depleting substances from the electronics sector;

- Implications of the increasing energy demands, given the power scarcity in the country and congestion; and

- Pressure on local infrastructure such as land, roads, housing, water, and power.

India does not currently have fabrication facilities for silicon chips and semiconductors. The industry is concentrated on software and some assembly operations. The magnitude of issues like hazardous and solid

waste management in manufacturing are not, therefore, as large as in countries where there are fabrication facilities. However, solid and hazardous waste management at the end-of-life stage could very soon become a significant issue in India.

There are insufficient facilities in India to deal with waste created either from production or product end-of-life. No reliable statistics on hazardous waste generation exist. There are some 116 industrial incinerators, which are likely to release significant amounts of dioxins and furans, especially if disposing of plastics. There are no official guidelines for waste management in the IT industry to promote take-back programs or hazardous material phase-out.

The current, centralized environmental protection regime in India is inadequate to manage the problems associated with high tech sector growth. While comprehensive environmental laws exist, the government lacks sufficient resources to properly enforce them. Moreover, until very recently the electronics industry has been designated as non-polluting, which has exempted it from most environmental regulations. Environmental impacts have been exacerbated by India's insufficient energy supply. High tech companies are forced to rely on highly polluting diesel generators to maintain production.

The issue of hazardous materials is a special case in India due to the large gray market and scavenging that occurs when computer and other equipment is discarded. In the absence of recycling facilities and regulations, people simply discard equipment in garbage dumps. Other people, the enterprising urban poor, scavenge for the equipment and recycle it by selling either parts or reassembled products in local street markets. As they pick apart motherboards and disk drives, the recyclers release into the environment and are themselves exposed to lead, cadmium, and other toxic heavy metals. This is an immediate environmental and human health problem in India and a portent for other developing nations that pursue an IT-led development strategy.

The emergence of the gray market was stimulated in part by protectionist policies that make hardware parts expensive. In addition to being a public health hazard, the extensive gray market poses a challenge for the phase-out of ozone-depleting substances (ODS). India is a signatory to the Montreal Protocol and has a manufacturer phase-out date of 2003 with the exception of medical purposes. However, small and medium-sized enterprises still use large volumes of ODSs in an informal manner, which makes government control very difficult.

The labor issues facing the industry center on:

- retaining the intellectual property in the country;
- prevailing and changing working conditions;
- health and safety at the workplace; and
- wages and the role of collective bargaining in the Indian IT industry.

New Roles for Government

The IT industry has virtually no unions. Even so, a number of labor laws that the government deems overly stringent are being simplified to further promote high tech investment. The Indian government sees the more relaxed labor markets and union-free export processing zones in Southeast Asia as its major competition. Workers in IT companies have few avenues by which to raise concerns or register grievances.

The industry's response to the challenge of being socially responsible differs distinctly between MNCs and domestic players. MNCs have, by and large, adopted corporate codes of conduct covering environmental management, including take-back programs and workplace health and safety. For domestic companies, environmental and health and safety issues are not a priority at present. Most Indian companies disclose little or no information on environmental or workplace safety performance and have no product stewardship mechanisms such as take-back programs. Even for the MNCs, however, it is far from clear whether and to what extent the codes translate into better on-the-ground performance.

With the Indian government moving toward simplifying environmental and labor laws, the oversight role of corporations and stakeholders has increased. Global competition has essentially created regulatory freeze in India. To be effective, environmental and labor protection must be flexible and involve the companies and third party stakeholders.

A tripartite regulatory framework is needed in which the government's role is to enact legislation, set benchmarks, and facilitate engagement among all sectors. The role of stakeholders is to monitor performance and apply pressure on companies, while the role of corporations is to engage with government and stakeholders, develop internal management and monitoring systems, and disclose information to government and stakeholders. To lay the foundation for such a framework, the central government should:

- Enact legislation to improve monitoring, measurement, and disclosure of key indicator issues, particularly facility-specific information;

- Create uniform zoning of hardware and software facilities in light of expansion into less-developed states;

- Create incentives for resource efficiency in the IT industry to reduce the long-term demand for energy;

- Promote proactive and preventive approaches to environmental management as well as product stewardship and asset recovery;

- Ensure a balance between flexibility and worker rights within labor law reforms, especially in regards to gender issues; and

- Strengthen the role of civil society organizations in order to improve stakeholder engagement.

Emerging regulatory reforms attempt to address many of these issues. A National Program on Environmental Management in the Semiconductor and Printed Circuit Board Industry is taking the first steps. A partnership between the newly formed Ministry for Information Technology and the UN Development Programme, the project will focus on gathering baseline information, clean technology, waste minimization techniques, and institutional reform to improve environmental management.

The most glaring need at this time is to improve measurement tools and performance indicators. Better information tools would provide decision makers with the necessary outlook on the current state of environmental and labor issues and what future challenges are likely to be. For civil society, improved access to information could be the impetus it needs to organize and begin demanding better performance by IT companies.

Malaysia: Economic Growth with Social Deficits

High tech is Malaysia's leading manufacturing industry. Electronics and electronics components make up about 60 percent of Malaysia's total exports, and the U.S. is the second largest market.[73] Since the early 1970s, Malaysia has worked to maintain rapid economic growth through an export-oriented industrialization strategy based on foreign direct investment. The main industrial centers are located on the west coast of Malaysia in the states of Selangor (near Kuala Lumpur), Johore Bahru, and Penang.

Conducted by Professor Arne Wangel, this case study examined the structure and the regulation of the high tech industry in Malaysia, with a special focus on Penang.[74] In 2000, more than a third of Malaysia's electronic exports were manufactured in Penang.[75] Electronics industries employed nearly 172,000 workers in Penang in 1999, accounting for about 70 percent of all industrial employment.

The high tech industry in Penang was launched in November 1969, when the Penang Development Corporation (PDC) was formed. The Malaysian government commissioned an American consulting firm, Robert Nathan and Associates, to draw up a Master Plan for Penang. The Nathan Report called for the restructuring of Penang's economy and the establishment of Free Trade Zones under attractive conditions, including the operation of subsidiaries wholly owned by foreign firms.

In the early 1970s, Bayan Lepas was established as Penang's first Free Trade Zone. Seven companies—five American, one German, and one Japanese—began operations: Advanced Micro Devices, Hewlett-Packard (now Agilent Technologies), Intel, Litronix (now owned by Siemens), National Semiconductor, Bosch, and Clarion.

The first phase of Penang's industrialization process (1970–1986) was largely based on the abundant local pool of cheap and trainable labor, as well as the availability of pioneer status incentives. A global glut in 1984–1986 forced several small, mainly local, electronics firms to close. During the late 1980s, another wave of investment began in Penang, this time including participation from Taiwan. During this period, utilization of robotics and automation increased.

By the early 1990s, Taiwanese companies had become the largest high tech investors in Penang and drove the emergence of peripherals manufacturing. Also, Kulim High Tech Park was established in the neighboring State of Perak. Enjoying strong land and tax incentives for high tech and strategic industries, it managed to attract wafer fabrication and other redesigning projects, primarily as government-directed spillovers from Penang.

American companies continue to be heavily involved in Penang. In June 2001, subsidiaries of sixteen U.S. companies were manufacturing electronics or components in Penang, including Seagate Technology, Agilent Technologies, Advanced Micro Devices, Intel, and others (Table 6).

Despite the large inflows of foreign direct investment in the past thirty years, high tech-manufacturing Malaysia has not moved up the value chain and continues to rely on low wages for competitive advantage. Sequestered in Free Trade Zones and kept by government policy at arm's length to local markets, the high tech sector has not built strong linkages to the local economy.[76] With shallow roots, Malaysian high tech manufacturing is vulnerable to pullout by large multinationals attracted to other locations by cheaper wages and lucrative terms.

Table 6

U.S. Electronic Companies in Penang, June 2001

(Source: Penang Development Corporation and American Malaysian Chamber of Commerce)

Advanced Micro Devices	Linear Semiconductor
Agilent Technologies	M.C.M.S.
Dell Asia Pacific	Motorola Technology
Fairchild Semiconductor	Quantum Peripherals
Integrated Device Technology	Seagate Technology (Penang Seagate Ind.)
Intel Corporation	Solectron Technology
Iomega	Xircom Operations
Knowles Electronics	
KOMAG USA	

Penang is caught in a "medium technology trap," squeezed at one end by Singapore, which remains the first choice for high-end technology investors in Southeast Asia, and at the other end by other low-wage countries in Asia, including China.[77] As a result, environmental and labor protections are low priorities for government regulators.

Major foreign-owned subsidiaries have put in place systems of self-regulation, either on their own initiative or as instructed by corporate headquarters. All companies have implemented environmental management systems, either as certification to an international standard such as ISO 14001 or as a set of company-specific policies.

Foreign-owned companies are considered the leaders. Intel is considered the top performer, with twelve employees devoted to its Environmental Health and Safety department. For a number of reasons, including cost and business culture, most Malaysian firms, often suppliers to foreign firms, have not followed suit.

A survey of 136 companies in the high tech sector in 2000, conducted by the National Institute for Occupational Safety and Health (NIOSH), showed that twenty-two companies (16 percent) had not even yet established a committee to address OSH issues. Fifty-three companies had active committees, while forty-five committees were barely active, and eleven were inactive. Five companies did not respond.[78]

The lack of private sector, as well as government, attention translates into a number of social and environmental problems that are not sufficiently addressed. The most pressing issues are toxic waste disposal and an absence of social security to assist workers and their families during frequent company retrenchments.

Since high tech production began in Malaysia in the early 1970s, the most serious environmental problem has been the disposal of toxic industrial waste. Before a private toxic waste disposal facility, Kualiti Alam, was established in the mid-1990s, some companies, mostly foreign-owned, stored the waste on-site. Often private contractors were employed whose methods of disposal were unknown.

It took several years for the Kualiti Alam facility in Bukit Nanas to become fully functional. Surveys concluded that only major companies would utilize the facility, due to the lack of enforcement of environmental regulations, as well as the resistance to any added cost by small and medium-sized enterprises (SMEs). In response, a pricing system was proposed that caused a lengthy dispute with industry. The alarming result is that the incinerator capacity is one hundred tons per day while as much as three hundred tons per day has been arriving on-site. The remainder likely finds its way into the local environment.

Another problem facing workers in the Malaysia high tech sector is the absence of social security. During the Asian financial crisis of the late 1990s, companies laid off workers with very little in the way of retraining or compensation. The investigation discovered that the modest welfare schemes that are available target only the hard-core poor, that is, old and jobless people, broken families, and children without parents. Moreover, the Training Scheme for Unemployed Workers has only benefited a small number of workers (572 in 1998 and 426 in 1999).[79]

Government and Company Initiatives

The case study outlined recommendations that would improve environmental and social outcomes in the Malaysian high tech sector:

- Enforcement of already-enacted laws is sorely needed. Enforcement could be facilitated by greater transparency and empowerment of workers in relation to companies and government regulators.

- Workers generally lack awareness on occupational health and safety and regard illnesses and ailments as normal. This should be addressed, by both companies and the Malaysian government, with improved education and training.

- Disposal of and worker exposure to toxic substances should be immediately addressed. There is currently an acute lack of expertise in Malaysia in this field.

Workers and citizens have traditionally been denied a role in the monitoring of the environmental, health, and safety performance of the companies in their communities. This issue should be re-evaluated, possibly in a "dialogue for the future" among the stakeholders of Malaysia's high tech sector. The government, firms, and workers have a common interest in the enfranchisement of workers through skills training, OHS education, and performance monitoring. Such a partnership could be instrumental in lifting Malaysia out of its current medium technology trap.

Costa Rica: Responding to Stakeholders

In the mid-1990s, Intel sought to expand its presence in Latin America, both to gain global market share and as part of an overall strategy to reduce risk by diversifying production sites. After intense lobbying by a number of Latin American markets, Intel chose Costa Rica. In 1998, the company opened an assembly and testing plant in San Antonio de Belen, near the airport and several industrial zones. The plant currently employs some two thousand people and assembles Pentium processors and other components for export around the world.

Conducted by law professor Naomi Roht-Arriaza, the field investigation in Costa Rica focused on the interplay between local NGOs and Intel management decisions.[80] In many ways, the Costa Rica experience offers a model of how stakeholder engagement can work to improve company environmental and social performance.
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Intel selected Costa Rica because it offered a critical mass of technically qualified labor, "legal certainty," that is, a lack of widespread corruption and violence, a working judiciary, and an easy-to-understand political and legal system. Costa Rica also had other large global companies, reasonably developed infrastructure, quality of life sufficient to attract management personnel, and a compatible national work culture.

From the viewpoint of the Costa Rican government, the Intel plant fit nicely into a development strategy focused on attracting and growing local industries around leading firms from service, high tech, pharmaceutical, and other sectors. The government provided extensive tax breaks, ran new electrical lines, and provided land for the new plant.

Local concerns about the plant surfaced before the plant was built. Initial concerns centered on its location over several groundwater sources and

near a river. Intel was allowed to build partially on land that had been designated a reserve because of its proximity to a watershed. In addition, the Health Ministry re-designated the plant as "inoffensive" based solely on Intel's assurances that they were engaged only in assembly and testing, not chip production. However, there was no independent investigation of Intel's environmental impacts. As a result, an environmental NGO—Justicia Para la Naturaleza (Justice for Nature)—brought an administrative challenge to the Ministry's re-designation. In response, the environmental ministry (SETENA) established a list of conditions that the plant had to comply with in order to operate:

- Application of the strictest possible environmental standards, at a minimum California standards;

- Implementation of ISO 14001;

- Establishment of an Environmental Manager who monitors the plant monthly, with a counterpart in the government (paid for by Intel);

- Those hazardous wastes that cannot be adequately treated in the country had to be exported per the terms of the Basel Convention. A bilateral agreement with the U.S. was subsequently concluded specifically in order to export Intel's waste;

- Support for SETENA in the preparation and instrumentation of monitoring for the electronics sector;

- Support and cooperation with a Monitoring and Supervision Commission coordinated by SETENA that included representatives of state institutions, the company, and the local government and community;

- Provision of funds for external environmental audits to be conducted at SETENA's request; and

- One percent of total investment funds held as a guarantee of environmental performance.

As of July 2000 when this field study was conducted, both Intel and the local government person in charge of environment agreed that the company had fulfilled these conditions. The plant has an on-site treatment plant for conventional wastes (i.e., from lunchrooms and offices) and recycles some 35 percent of its waste. In terms of emissions from production processes, especially to water, Intel's aim is not to exceed the permit limits for a similar-sized plant in California. Company officials insist there is not a problem with trace amounts of lead and other heavy metals being washed off the boards after soldering and into the water supply.

The company has dug a number of perimeter wells around the site, and tests groundwater monthly. All biological loads are composted and used for fertilizer on company grounds. Intel has installed protective membranes and secondary containment systems in all areas where chemicals or oil are handled. In terms of air quality, the goal is to remain a "minor source" under California law, and to date they have managed to do so (less than twenty-five tons per year of any conventional pollutant).

The city has an air monitoring program for conventional pollutants only and Intel says it is not venting toxics. The company uses Class II ozone-depleting substances in coolants, and has installed systems to recapture fugitive emissions of these substances. Lead is the major indoor air quality worry, generated because of touch-up soldering that uses a 60 percent lead compound. There are tubes to remove lead-laced gases, and there is protective clothing for workers. The plant monitors the composition of air within the lead-using areas, but has found it impossible to eliminate use of lead altogether. Hazardous waste is exported to the U.S., about three quarters of which is lead, and the rest solvents and oils. In general, in applying California law where no Costa Rican law exists, Intel tries to use the spirit of the law, not the details where they're inapplicable.

The export of hazardous wastes remains something of an Achilles heel. Wastes must be trucked over mountains to the sea, then shipped to Houston, and then to a hazardous waste site in Arizona. The company initially given the contract, Romic, based in California, has been cited for worker health and safety violations. It is not clear how much oversight of its contractors Intel employs, although to date no major incidents have been reported.

Sustaining Community Participation

One of the results of initial community concern was an increase in prescribed levels of monitoring. The Monitoring and Supervision Commission at first met every two weeks. Intel came prepared with environmental indicators, plans, and problems, and listened to suggestions and problems. Every three months, the Health Ministry or another regulatory authority sends an inspector to the plant. The plant is also subject to regular inspections from Intel's corporate-wide EHS department. Local government officials appreciate the company's willingness to provide environmental data, even if it is not legally required.

Community interest in the Commission dwindled, however, as feared problems did not materialize, as the head of the local community watchdog group was elected mayor, and as other NGOs ran out of money to support the group. In 1999, meetings were held every three months. As of July, no meeting had yet been held in 2000. The experience provides

lessons both about the efficacy of NGO advocacy and about the support needed to sustain community input into decision-making.

New issues are emerging. Livability concerns are becoming a bigger issue as the surrounding area develops. Once Intel received permission to build in what had been a protected area, other companies sought the same benefit. The result is growth without adequate infrastructure. Housing prices have skyrocketed, making it difficult for some local families to remain in the area. Condo construction may prove to be more of a drain on local resources than the plant itself.

In terms of labor issues, Intel applies U.S. occupational safety standards to its contractors, especially for construction work, and is proud of changing local safety practices. Three quarters of the two thousand employees are production workers, and of those 80 percent have a post-secondary technical degree. Only 18 percent are women, which Intel attributes to the lack of women in technical and engineering careers in Cost Rica. Intel is focusing on improving education to increase the number of women in their workforce. The plant pays about the average of other firms their size. They also provide stock options and bonuses in the same proportion (although not the same amount) as other Intel sites worldwide.

As to suppliers, Intel applies an EHS evaluative screen to large international suppliers, but not to small local suppliers because none of them have adequate policies in place. They import most supplies and inputs. One issue raised by a local NGO was the outsourcing of many support services that would normally be done by employees, including things like maintenance.

The company has extensive community relations and community development programs. It has agreements with the University of Costa Rica and two Technical Institutes to promote technical and engineering education (equipment, scholarships, exchanges) and underwrite the national science and technology fair. Intel has been extremely active in supporting local schools, creating school recycling and environmental education programs, supporting the local Red Cross, police and fire departments, and helping build an air quality monitoring station.

According to Intel, they ask the local community what the priorities are before deciding where to invest. However, it is unclear what form this process takes. Although not required by law, Intel recently decided to pay its local taxes to the municipality, out of a sense that they were causing extra strain on local infrastructure. Intel's contribution will come to one third of the municipal budget. Although the company does pay some

taxes and contributes voluntarily to community programs, it also receives enormous tax breaks. As a result, the company gets to choose what community benefit programs to support, rather than paying into a tax fund and having elected local officials decide on local priorities.

In general, the initial opposition to the project motivated Intel to pay attention and make positive changes. The government-imposed conditions both improved the project and enhanced the incentives for the company to monitor and evaluate performance on its own. Currently, reviews are largely positive, even from local government officials and NGOs who had previously expressed doubts.

California: From Revolution to Planning?

The high tech revolution began in northern California and, through the enormous wealth and innovation that it created, spawned a community and state of mind known as "Silicon Valley." From what began as garage operations during the 1960s, the engines of technology that drive Silicon Valley are now highly diversified, ranging from computer design and information services to bioscience and aerospace. In the 1990s, 220,000 new jobs were created in Silicon Valley,[81] a large number of which were highly paid technical positions.

The technology-led growth that has propelled California and the U.S. to global supremacy is an attractive model. Around the world, local and national development planners seek to attract leading edge technology industries, especially MNCs from the U.S., Europe, and Japan.

The strategy, however, poses new risks and challenges for the world's aspiring "Silicon Forests and Glens." As the California experience shows, if the growth of a high tech cluster is not accompanied by adequate investments in public infrastructure, the quality of life for everyone may suffer through social stratification in the workplace and community, environmental impacts such as groundwater contamination, congestion, and urban sprawl.

The first generation of problems connected to high tech expansion in the Valley centered on water, groundwater, and ground contamination from toxic chemicals. After years of organizing, lawsuits, administrative hearings, and public pressure, the industry has changed its practices to make further contamination less likely.

To the extent these new practices—and government knowledge of the severity of potential problems—infuse global operations, new high tech clusters elsewhere may be less prone to repeat the same mistakes. But

intense market competition and the diffuse structure of production offer great temptations to cut corners. In addition, even as the industry has stopped the worst groundwater contamination practices, other problems have arisen.

Working Too Hard? Piecework, Mandatory Overtime, Social Capital

One of the dark sides to California's revolution is the emergence of largely immigrant-based sweatshops. A number of investigative journalist reports have documented practices of piecework and homework by subcontractors to major computer manufacturers.[82]

The use of household work raises possible violations of minimum wage and hours laws, child labor laws, and health and safety laws. Pieceworkers may not make the equivalent of the minimum wage, may involve underage family members in production, and may work with dangerous chemicals or lead solder without adequate information or precautions about the hazards involved. The immigrant labor force involved may be unaware of labor law protections or afraid to make a complaint.

In California, hearings on overtime abuses were held in 2000 in the state legislative Labor Committee. Federal and state investigators provided evidence that the practice was more widespread than previously thought, including among subcontractors who produced components for large brand name manufacturers. However, no further action was taken and the probes were closed. A proposal to increase the number of labor investigators assigned to Silicon Valley died in a state legislative committee. A lawsuit by a Cambodian immigrant worker resulted in a settlement and a pledge by the subcontractor to cease industrial homework. A coalition of women's, labor, and immigrant rights groups has formed to combat the practice.[83]

A different set of issues confronts technical and professional staff of high tech-related firms. Excessive work hours, and a work culture that requires complete devotion to the company, are one common complaint. Certain technical and managerial employees in the U.S. technology sector making over $27.63 an hour are not subject to the requirements under the Fair Labor Standards Act such as overtime pay beyond a certain number of hours.[84]

Excessive use of these provisions has resulted in admonitions from the Labor Department that the employee categories involved should be narrowly defined. While an exemption from overtime rules for those running start-ups seems reasonable, the grueling hours required of many middle and upper-level employees of even well-established companies

means less hours available for child rearing, family, and community life. In the long run, the quality of collective and individual life suffers.

The dangers became evident in the 2001 meltdown of the dot com sector, when reports surfaced that highly paid technical staff, now laid off, were seeking refuge in San Jose homeless shelters. These "techies" had lived at the office, falling asleep on office sofas and showering at the local health club, and suddenly found they had nowhere to go.

A recent study showed that the communities of Silicon Valley indeed lag behind the United States in terms of cohesion and "social capital."[85] Coined by political scientist Robert Putnam, social capital refers to the norms, networks, and trust that enable people to work together in the pursuit of shared objectives.[86] According to the study, although Silicon Valley residents display a high level of social and interracial trust, it also shows low levels of community and involvement and social interaction.

The lack of civic engagement hinders the region's ability to creatively address communal problems such as education, affordable housing, and transportation gridlock. In the long run, the lack of civic and cultural innovation jeopardizes the region's technological and economic progress. [87]

Gridlock and Urban Sprawl

Silicon Valley's population has grown by 31 percent since 1980.[88] One of the most visible manifestations of this influx is the choked freeway on any given weekday morning or evening. By some measurements, the San Francisco-Oakland Bay Area now has the nation's third worst traffic congestion. Some $3 billion annually is lost in wasted fuel and lost time.[89] For workers without access to public transportation, congestion means countless extra hours on top of an already long workday.

Technology was supposed to alleviate traffic congestion through telecommuting. A decade ago, federal research predicted that as much as 10.4 percent of the nation's work force would, by decade's end, routinely work out of their homes or nearby telework centers several days a week. In Seattle, another high tech city burdened with a critical mass of automobiles, only 0.6 percent of workers telecommute more than two days a week on average, according to a survey of the state's largest employers.[90] Although statistics are not available for Silicon Valley and Northern California, the story is likely to be similar.

Gridlock on freeways is indicative of the general pattern of land use in Silicon Valley and all over the United States. Cities sprawl outward through economic and population growth and public transportation does not keep pace. In Silicon Valley, only 37 percent of new housing and 32

percent of new jobs in 2000 were located near public transit.[91] Environmental regulators have done a respectable job of maintaining the region's air quality in the face of the growing number of cars. However, watershed health has suffered under the strain of proliferating non-point sources of pollution, increasing demand for water, and loss of open green space.

Indicators: Toward Regional Sustainability Planning

Complex environmental management issues resulting from broad social patterns of production, consumption, and habitation generally fall outside the purview of the command and control regulatory system. They represent the new horizon that regulators are attempting to come to terms with. Unlike point source air and water pollution, targeted by the first generation of environmentalists, these issues have complex causes that will require rigorous involvement on the part of governments, private firms, and the public to address.

One emerging California strategy to deal with these issues is the development of indicators that enable close monitoring of overall environmental health in a region or watershed. Quantitative flows such as hazardous waste generation are measured at time intervals and the trends are analyzed to determine whether current policies are effective and what issue areas should be prioritized. The use of indicators was pioneered in the Netherlands and has been adopted by municipalities worldwide, including in Silicon Valley.

The Silicon Valley Environmental Partnership (SVEP) released the latest version of its Environmental Outlook in 1999.[92] Despite California's famously stringent environmental regulations and progressive policies of the region's high tech companies, the report revealed that overall environmental quality was diminishing and more needed to be done to reverse the decline. Some of the most telling trends are a 20 percent rise in energy use over the last eleven years and a rapid increase in the number of endangered species in Silicon Valley's Santa Clara County.

Other coalitions, including the Bay Area Alliance for Sustainable Development (BAASD), also have urged integration of environmental, economic, housing, transportation, and other related policies as necessary to maintain and improve the region's quality of life. BAASD is developing a set of indicators as part of its *Compact for a Sustainable Bay Area.*[93] Natural Resource Defense Council tracks five broad regional environmental health indicators that reveal mixed progress toward sustainability in the Bay Area. Per capita energy consumption is

increasing, which is exacerbating regional air quality problems. Although more wetlands are being protected or restored, the number of endangered species in the Bay Area is increasing.[94]

The SVEP report and similar efforts illustrate the importance of monitoring and information disclosure to environmental protection. Many of the trends indicate that in high growth areas such as Silicon Valley, factors such as population growth must be accounted for in the design of effective policies. Increasing numbers of residents and workers put added strain on green space and water quality, and often negate gains in areas such as energy efficiency.

There is increasing movement toward an information-intensive, performance-based approach to environmental protection. The State of California is in the process of creating a set of statewide indicators that could inform a sustainability plan in the coming years. As the state and region attempt to tackle previously unregulated issues such as climate change and non-point water pollution, the role of the private sector will increase in importance. California high tech companies could be on the cutting edge, building on their policies of "beyond compliance" and publicly available environmental health and safety reports.

These companies, however, will need to do much more than they are currently doing to contribute to regional and global sustainability. "Beyond compliance" only refers to issues that are currently regulated such as point source air pollution. Key issues such as greenhouse gas emissions and local water use are often missing from company environmental strategies and reports. To their credit, many companies do monitor these issues, disclose their information, and show company-wide improvement. However, linkages between regional environmental health studies such as the one carried out by the SVEP and site-specific company environmental targets are almost entirely missing. It is therefore nearly impossible to measure the company's regional environmental impacts.

As companies attempt to improve their environmental policies, a crucial step will be the addition of site-specific information that includes overseas facilities. The inclusion of overseas information will enable those communities to apply the lessons of Silicon Valley as their own IT sectors grow, and to ensure that Silicon Valley is not simply exporting its most intractable problems elsewhere.

TOWARD CORPORATE ACCOUNTABILITY

The global IT industry faces serious ethical challenges and dilemmas. The dynamic worldwide growth of the industry and increasing use of IT products offer the potential of enormous economic, social, and environmental benefits. Under a business-as-usual scenario, they also portend large social and environmental costs. Eliminating or reducing these costs will require a variety of mutually reinforcing initiatives from companies, governments, and civil society groups.

Leading-edge, multinational firms in the U.S., Europe, and Japan have a special responsibility—and opportunity—to solve the dilemmas. Companies can direct research and development efforts to design more benign substitutes for toxic and hazardous materials, or to change basic engineering logic to eliminate them altogether. They can design products to be easily upgradeable and recyclable. They can embrace corporate social responsibility—a commitment to environmental sustainability, occupational and community health and safety, and transparency and stakeholder accountability—as a fundamental part of corporate governance. And they can work with subsidiaries, suppliers, governments, and community groups in developing countries to improve their performance and CSR capacities.

Defining new roles for government in strengthening corporate social responsibility is still largely uncharted territory. In the U.S. high tech sector, a variety of government-industry pilot projects have explored new, performance-based approaches to regulation. These pilots, however, have not yet developed into programs with clear regulatory guidelines. American high tech companies have generally resisted both mandatory disclosure and community pressure for more voluntary disclosure. Lack of information makes it hard to evaluate the robustness and credibility of the commitments that companies *have* made to improve environmental management.

This section first surveys and evaluates voluntary initiatives underway in leading California-based high tech companies. It then examines the shortcomings of a global best practice approach to raising performance. Drawing from a report by industry analyst Jan Mazurek commissioned for this project, it describes government-industry pilot projects that offer regulatory flexibility in exchange for better performance.[95] It concludes by pointing toward greater mandatory disclosure of environmental and social information as the cutting edge of a new approach to enhance corporate social responsibility through public accountability.

Voluntary Codes of Conduct

Most high tech companies have adopted codes of conduct for Environmental Health and Safety (EHS), including adherence to best practice environmental management. IS0 14001 certification is rapidly emerging as the industry's *de facto* standard for sound environmental management. ISO 14001 requires that a company develop an environmental management system that includes environmental goals and objectives, internal auditing, and continuous improvement.

ISO certification, however, lacks two crucial elements: public disclosure of environmental performance statistics and substantive performance standards. Without public disclosure, it is difficult or impossible to verify whether a company is truly improving its performance or not. Even companies that provide public information often use worldwide data, which can hide the poor performance of specific facilities.

As a universal application, ISO 14001 does not set substantive performance standards; it only suggests the *form* that environmental management must take. Thus, ISO 14001 at best clouds and at worst misleads external judgments of environmental quality. It enables companies to claim superior environmental performance without demonstrating real performance improvement.[96]

The credibility and robustness of the codes of conduct depend on four key factors:

- Specific targets for improvement and performance;

- Facility-specific, as well as company-wide performance data;

- Comprehensive coverage of EHS aspects, including in-supply chain management; and

- Enforcement mechanisms, such as public disclosure and third party verification.

Table 7 provides a survey of semiconductor and electronic component manufacturers based in California. Overall, three companies—Intel, Agilent, and Advanced Micro Devices (AMD)—provide the most comprehensive and convincing information on their Environmental Health and Safety policies and goals. AMD is the only one to provide detailed site-specific statistics *and* company-wide benchmarks for greenhouse gases as well as resource conservation. Intel provides such statistics but lacks complete information on company benchmarks and site-specific emissions and resource use. Agilent also provides detailed statistics and

targets under the Global Reporting Initiative framework. However, the targets are not site-specific and targets are lacking for certain impacts such as water use.

<table>
<tr><td colspan="5" align="center">

Table 7

California Semiconductor and Component Manufacturers: Environmental, Health, and Safety Disclosures

</td></tr>
<tr>
<th>Semiconductor Manufacturers</th>
<th>Advanced Micro Devices</th>
<th>Agilent Technologies</th>
<th>Intel Corporation</th>
<th>National Semiconductor</th>
</tr>
<tr>
<td>**Greenhouse gas policies**</td>
<td>Site-specific statistics, targets</td>
<td>Company-wide statistics targets under development</td>
<td>Company-wide statistics targets under development</td>
<td>Limited, outdated statistics, targets under development</td>
</tr>
<tr>
<td>**Supply chain management**</td>
<td>Risk-based, supplier selection process</td>
<td>Suppliers required to meet applicable EHS laws</td>
<td>Environmental content guidelines, supplier EHS report card</td>
<td>Seeks suppliers dedicated to EHS</td>
</tr>
<tr>
<td>**Hazardous materials/ product design**</td>
<td>Advanced material review, Energy Star</td>
<td>Lifecycle design, re-marketing</td>
<td>Lead reduction program, recycling; energy efficiency measures</td>
<td>Electronic Scrap Information data sheets for all products</td>
</tr>
<tr>
<td>**Energy/water conservation**</td>
<td>Detailed statistics targets</td>
<td>Detailed statistics, energy targets, no water targets</td>
<td>Statistics, targets being developed</td>
<td>Limited, outdated statistics, no specific targets</td>
</tr>
<tr>
<td>**Overseas disclosure**</td>
<td>Site-specific</td>
<td>Company-wide</td>
<td>Company-wide</td>
<td>Minimal, outdated</td>
</tr>
<tr>
<td>**Verification of EHS performance**</td>
<td>Third party audit</td>
<td>Internal audit</td>
<td>Internal audit</td>
<td>Internal audit</td>
</tr>
<tr>
<td>**ISO 14001**</td>
<td>All sites certified by 2001</td>
<td>Principle used in internal audits, all sites by 2003</td>
<td>Process in place for company-wide compliance</td>
<td>Scotland facility certified, no goals listed</td>
</tr>
<tr>
<td>**Best practice**</td>
<td>Commitment in policy</td>
<td>Commitment in policy, uses GRI principles</td>
<td>Commitment in policy</td>
<td>Meet or exceed EHS regulations</td>
</tr>
</table>

Table 7 (cont'd) California Semiconductor and Component Manufacturers: Environmental, Health, and Safety Disclosures				
Component Manufacturers	*Apple Computer, Inc.*	*Hewlett-Packard*	*Seagate Technology*	*Solectron*
Greenhouse gas policies	No information	Company-wide statistics targets under development	No information or statistics	No information or statistics
Supply chain management	Policy of encouragement but minimal information	Encourages policy of continuous improvement	No information	No information
Hazardous materials/ product design	Energy Star, life cycle design, environmental data sheets	Energy Star, life cycle design, environmental data sheets	No information	No information
Energy/water conservation	Limited information for products	Limited information for products, statistics available for U.S. facilities, targets under development	No information	Minimal information
Overseas disclosure	Limited site-specific information, no statistics	Minimal information	No information	No information
Verification of EHS performance	Internal audits	Internal audits	Internal audits	Internal audits
IS0 14001	All sites certified	Company-wide compliance	14 facilities certified	19 facilities certified
Best practice	Commitment in policy	Comply with laws and company objectives	"Best in class" EHS policy	Meet or exceed EHS regulations

AMD also describes the most systematic supply chain management program, though all the companies listed have at least a pledge to communicate EHS policies to suppliers and associates. Laggards in this category, such as National Semiconductor and Solectron, merely make a pledge and provide no information about how policies are enforced. Even at the best companies, practical integration of EHS personnel and priorities into procurement departments is just beginning.

Greenhouse gas emissions policies reflect the widest range among the companies. All of the companies cite the EPA energy reduction partnership. In the case of National Semiconductor, this is the only information provided. The other semiconductor manufacturers such as Agilent and Intel have pledged a reduction of 10 percent below 1995 levels by 2010. Advanced Micro Devices has a 50 percent reduction goal by 2010. None of the components manufacturers provide information about greenhouse gas emissions.

In terms of regulatory compliance, every company (except HP) states a commitment to meet or exceed existing regulations. Five out of eight companies state "best in class" as a company policy. In terms of product stewardship, all companies provide information on recycling and Energy Star progress, as well as commitments to finding environmentally sound technologies. Very little is mentioned about such issues as lead-free soldering. Agilent and HP are the only companies that state a policy of life cycle design. The pattern among laggards, notably National Semiconductor and Solectron, is to provide general policies on the hot button issues along with token statistics on such things as solid waste reduction and ISO 14001 certification.

Overall, the lack of company-wide data and/or information about action and enforcement strategies makes it difficult to evaluate both performance and commitment. Leaders provide substantial environmental performance information but lack comprehensive benchmarks and third party verification. In the middle are HP, Apple, and Seagate, which display a mixed bag of EHS commitments and performances. For example, while HP is a leader with its life cycle policy, it lags on requiring suppliers to meet EHS standards. Many companies advocate the use of best management practices but fail to explain how they are implemented. National Semiconductor, for example, has not updated its website in years.

In terms of workplace conditions and labor standards, every company has a long-term policy to eliminate workplace injuries and illnesses and comply with all existing laws and regulations. Some companies, such as Intel and Apple, pledge to go beyond existing laws if necessary. Most companies present steady declines in reportable incidents of injury and

stress their commitment to educate workers about workplace safety. However, all the companies insist that their manufacturing processes present no risk, although Intel reports the establishment of a Scientific Advisory Committee to the Semiconductor Industry Association to look into the health risks associated with semiconductor manufacturing.

Companies that do not rely on brand recognition are less likely to have stringent policies for their suppliers. For example, Solectron is a self-described "supply chain facilitator" that manufactures products for the biggest consumer electronics companies in the world. Solectron's EHS policies are not nearly as stringent as Agilent's. It is possible that the efficiency gains that drive Solectron's business depend on lower workplace standards in places like China and the flexibility of using independent contractors who are not subject to most workplace safety laws, even in the U.S.

Even if a company is in compliance with local laws and has a modern environmental management system, problems may exist that will receive little public attention. For example, the only information on Seagate's website about its Thailand operations is a series of awards that includes "Best EHS Committee" from the national government. An earlier section of this chapter describes the deaths of several workers at a Seagate facility that happened in the early 1990s. Excessive lead and solvent exposure was suspected to be the cause. Following the event was a protracted struggle to improve occupational health and safety laws in Thailand. Because there is no union representation at Seagate's Thailand facilities, it has been a long and inconclusive fight with a government that seems to intentionally maintain low labor standards to attract foreign investment.

Overall, companies tout in their codes a high regard for worker safety in relation to accident and injury. However, there is substantial evidence—especially the reluctance to undertake health studies of worker exposure to toxics—that the industry has yet to come to terms with the "health" part of the EHS equation.

Company-Wide Standards: Is Best Practice Good Enough?

One way to improve the environmental and social performance of the global IT industry is for leading multinationals to embrace and disseminate best practice throughout their global operations. Most large high tech firms take a no-regrets approach and adopt company-wide standards. For reasons of administrative convenience, training, and creation of a worldwide corporate culture, they generally aspire to

implement the same standards in facilities around the world. Thus, even where local law is more permissive, Intel, for example, will use the tougher of California or Arizona air pollution standards in their overseas firms.[97]

Company-wide standards, however, can suffer in the implementation by overseas subsidiaries. Far from headquarters, subsidiary managers may be driven more by the pressure to perform financially than to uphold good environmental practice. Moreover, even if the same standards are scrupulously applied, the actual environmental and social impacts can be very different in developing countries than in the U.S.

The differences in context include lack local of infrastructure, including emissions monitoring and waste management, as well as effective local enforcement. In our case studies, companies seeking responsible disposal options turned to local waste handlers, who promised to either dispose of the waste safely in-country or re-export it to the company's home country. However, many developing countries have no adequate waste disposal facilities, and waste handlers may be unscrupulous.

Not all companies embrace global standards. Some follow local standards or, in the absence of standards, local practice. Even companies that generally claim to have company-wide global standards, however, do not apply them evenly to all environmental management issues or in all countries. For example, the Silicon Valley Toxics Coalition has documented that U.S. companies operating in Europe, where legislation on producer take-back is either in place or pending, have more and better take-back programs than they do in the U.S. In another example, companies do not provide information on toxic risks and pollutants, required in the U.S. under the Toxic Release Inventory, about their overseas operations. In our case studies, the Material Safety Data Sheets required in the U.S. were nowhere in evidence in plants producing for U.S. firms.

Moreover, companies sometimes ignore international standards where they do exist. Long-standing International Labor Organization (ILO) standards on occupational health and safety, including access to information on workplace risks, are rarely part of company codes of conduct. In our case studies, workers in overseas high tech plants remained largely ignorant about the chemicals in the workplace and their potential risks.

In some cases, global standards may provide inadequate or irrelevant guidance. For example, ILO Conventions require businesses to respect freedom of association, but the application of this provision has been difficult in countries like Malaysia where gatherings of more than five

people without state permission are banned. In effect, companies for the most part simply ignore the dilemma.

Roles for Government: Planning and Benchmarking

The rapid growth of the IT industry in many countries, and its key role within national development strategies, creates a need for new planning and governance structures. A number of the studies noted the wide-ranging and unexpected nature of the environmental and social impacts of locating a burgeoning industry in previously undeveloped and underserved areas.

For example, in Bangalore, India, one of the high tech industry's major demands is for reliable energy. In order to meet the needs of the software and hardware industries, the government has subsidized firms to buy their own generators while the public grid builds capacity. The generators run on diesel fuel, and their fumes greatly exacerbate local air pollution problems. Similarly, in Taiwan, demand for energy for the high tech industry has led to a massive dam-building program, with tragic effects on river health. These second-order effects need to be part of the environmental and social balance sheet for companies.

Even broader effects reveal a need for increased planning for the negative as well as positive effects of industry growth. Silicon Valley famously suffers from livability problems: gridlocked traffic, skyrocketing housing prices, and inadequate public services. Little replicas of the Silicon Valley model in high tech clusters around the world reproduce these problems. The public services crunch is often exacerbated because the underlying infrastructure is already deficient, and government is not up to the task of quick and dramatic improvement. In addition, high tech firms are exempted from many local taxes, often as part of the terms of establishment in export zones or industrial parks.

As countries (as well as states within the U.S.) compete for high tech investments, plants obtain sizeable subsidies that shrink the public coffers, and skew decisions about location in environmentally problematic ways. Intel's decision to locate a large semiconductor plant, with its enormous water needs, in arid New Mexico, was largely a result of the tax breaks the state government offered the company.

To attract an Intel wafer fabrication plant in the southern city of Kiryat Gat, the Israeli government contributed about $600 million of an estimated $1.6 billion investment.[98] In February 2001, the government offered the company a subsidy of $440 million of a total $3.5 billion investment in another fab.[99] The Irish and Costa Rican governments have also

exempted their Intel plants from one or more taxes. In India as well, land subsidies are provided to the IT industry in Karnataka and Andhra Pradesh state.[100]

At the same time, many high tech companies have made significant contributions to community development in the countries where they operate. While companies may (and do) contribute generously to maintain the local firehouse or symphony, decision-making still shifts from the public to the private sphere. In countries where corruption is rampant and non-governmental groups tend to deliver services more efficiently, this shift may be positive. In other cases it leaves local authorities with few options but to acquiesce to company demands and let potential problems slide.

The ability of local authorities to adequately enforce the laws and protect community health and welfare also suffers where high tech facilities are insulated from application of these laws by concentration in industrial parks (also called industrial estates). These parks provide water, power, wastewater treatment, security, and other services to IT firms. In principle, industrial parks can achieve economies of scale and uniform application of superior environmental, health, safety, and labor standards. By creating a critical mass of companies in a given industrial sector, they can also create synergies and linkages that multiply the economic benefits of each firm. However, in practice they have been problematic.

First, these parks are removed from the jurisdiction of the local authorities, so that many laws either do not apply or are enforced directly by park administrators. These administrators are often either private or from export promotion bodies, with little interest or expertise in environmental or social regulations and clear incentives not to discourage potential tenants by overly onerous regulations. As expectations about environmental performance rise, industrial parks are insulated from local communities' increasing demands for performance.

Second, the parks obscure the individual responsibility of each firm for toxic or harmful discharges. In response to problems with water quality, for example, it is much more difficult to pinpoint the problematic discharger in an industrial park setting. The problem is exemplified by Hsinchu Science Industrial Park in Taiwan, where many IT firms share wastewater treatment and local authorities are unable to enforce most environmental laws within the park. In Thailand, administration of environmental laws within industrial estates was originally vested in the Industrial Estate Authority, but over time awareness of the potential conflict of interest involved resulted in the transfer of regulatory authority to the agency in charge of industry environmental compliance generally.

Third, competition among parks within a single country, or among countries, drives standards down. Global operating standards for industrial parks, appropriately enforced, would counter the downward pressure of competition.

Governance issues within the industry itself are also crucial. We have already noted the challenges posed by ever more complex supply chains. Thus, a workable scheme to oversee and independently verify supplier environmental and social/labor rights performance is a first priority. This would include standardizing minimum supplier requirements, creating technical training and capacity-building resources for small and medium producers both in the U.S. and abroad, and developing both periodic independent monitoring and complaint mechanisms that include significant participation from local and international NGOs. Only then will company reports of superior performance be credible to industry critics.

Another area of concern involves the dissonance between industry claims of social and environmental leadership and the actual positions taken by industry associations, especially in relation to public policy. The American Electronics Association's (AEA's) opposition to European take-back legislation—even as AEA members were touting their end-of-life programs—provides a striking example.[101] The industry's opposition to studies of long-term worker health, while at the same time insisting on the strength of their EHS programs, is another example. The long-term credibility of the industry will require a commitment at the very top of each company to make words and deeds correspond in both voluntary initiatives and public policy stands.

The industry will increasingly face scrutiny of its labor practices. Companies will be asked to put in place systems to manage labor and human rights issues that are as sophisticated as environmental management systems. The primary focus of efforts to improve labor and environmental standards will be suppliers.

Even if all the links in the global supply chain follow the industry's best practice, however, current problems involving toxic hazards and energy intensity cannot be eliminated without product redesign. It is unclear how much effort the industry is expending on the redesign that sustainable production will require. For example, nano-technologies or use of biologically based plastics may eliminate the need for metals and fossil fuel-based plastics in high tech products. Dematerialization, long-term lease arrangements, and other ways of lessening environmental impact

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are now possible.[102] While companies have toyed with these ideas, it is not clear they have backed them with solid research and development budgets.

Similarly, the industry will eventually have to confront its willingness to make long-term commitments to workers and to local communities, an issue obscured during the 1990s by the industry's phenomenal growth. The recent market volatility will test the industry's commitment to support the communities where it operates in the face of layoffs or slowdowns. As the value of stock options evaporates, long-suppressed issues of wages and overtime are likely to come to the fore.

From Pilots to Programs? New Approaches to Regulation

Developed in the 1970s, U.S. federal and state laws set out a framework for regulation of solid and hazardous waste, emissions to air and water, and basic labor standards. Under this regime, the IT industry has reduced its air emissions and contributions to groundwater contamination. Some improvement—it is impossible to tell how much—is undoubtedly due to better process technologies. Some stem simply from changes in the quantity of output or location of manufacturing facilities.

Despite past improvements, the current regulatory framework is ill-suited for further improving the environmental or social performance of IT firms. It employs uniform standards for an ever more highly differentiated group of processes and products. It has great difficulty keeping up with the economic restructuring and innovation that characterize the industry and virtually ignores problems related to the industry's increased outsourcing. And risk-based standard setting provides disincentives to chemical manufacturers to provide knowledge.[103]

The continual introduction of new substances, emerging greenhouse gas and energy issues, water use, livability, and supply chain management concerns are all largely unregulated by current environmental laws. On the labor side, the current U.S. legal framework provides a series of exemptions and gaps that make it largely irrelevant for many high tech workers. And in both the U.S. and elsewhere, enforcement resources are scarce and cannot adequately police behavior, even in those cases where the legal framework is adequate.

Given these shortcomings, it is not surprising that policymakers, advocates, and companies themselves have been experimenting with a second generation of environmental protection strategies that rely on facility and company-wide management systems, combined with publicly set goals and reporting of results to the public. Based on environmental

management systems like European Management and Audit Scheme (EMAS) or ISO 14001, they go further in setting substantive benchmarks and have been dubbed "EMS-plus" approaches.[104]

One set of U.S. initiatives involves collecting and comparing the results of pilot projects throughout the country, including some large high tech firms, to see whether and how implementation of an EMS improves actual environmental performance. An EPA initiative called National Environmental Performance Track seeks to reward companies that combine implementation of an EMS with superior environmental performance, by providing a higher degree of regulatory flexibility and technical support.[105] A number of states have their own versions of performance track. It is not clear yet how much corporate support such two-track strategies will generate and, importantly, whether government will have the oversight resources available to make them credible.

During the 1990s, a number of U.S. second-generation initiatives focused on the high tech sector. The Common Sense Initiative brought together stakeholders from industry, government, NGOs, and local community groups to focus on improving performance and regulation in six industry sectors, including high tech.[106] The participants came up with an industry-specific set of performance metrics based on the information now required under different laws. They also agreed on a vision statement, which proposes that firms that seek substantial regulatory flexibility—a euphemism for relaxing some regulatory requirements—must demonstrate equally substantial improvements in environmental, health, and safety performance beyond what is currently required.

Translating this vision into practice, however, foundered on problems of information: the initiative required non-industry participants to know as much about industry production processes and alternatives as did the industry. Another pilot initiative, Project XL, similarly foundered on disagreements about how to measure performance, from what baseline, as well as on coordination problems among public agencies. The challenge is to build on these efforts at the federal and state levels, while extending them to cover both manufacturers and suppliers based elsewhere. Simple adoption of an EMS, as the Taiwan case study shows, is not enough.

Mandatory Disclosure

The centerpiece of a new approach to regulating the high tech industry is to increase the quality and quantity of information gathered by companies and disclosed to regulators and the public. Disclosure of information on environmental risks and impacts, as well as worker health and safety and labor standards, would work in a myriad of ways to help raise

performance. It would prod companies to create better information gathering and monitoring systems, thus making its practices and impacts more transparent to itself. More information would allow companies to do better planning, including the allocation of research and development funds to improve environmental and social performance in ways that make the most financial sense for the company. It could help to spur efforts at product and process redesign.

Disclosure of information to regulators is crucial in developing integrated, regional sustainability approaches to environmental protection. In Silicon Valley, for example, the way that companies manage toxic and hazardous materials is central to any attempt to set and achieve benchmarked improvements in environmental protection. State and local governments would not necessarily set specific emissions standards. Rather, they would set broad benchmarks, allowing individual companies flexibility in achieving them. A credible reporting process is key in making this flexible approach work. For communities, more information would help them apply external pressure in ways that are most effective in changing company practice. For investors and consumers, more information could strengthen the market impacts of ethical investing and green shopping.

Given the global nature of the industry, mandatory disclosure requirements should cover not only local but global operations and extend to supply chains. As intimated in an earlier section, the IT sector has made an enormous contribution to the social welfare of Silicon Valley and California in terms of jobs and an innovative, entrepreneurial culture that has become the envy of the world.

The costs of IT-led growth—a legacy of toxic water contamination, a rapid influx of people who overloaded public infrastructure and created an acute housing shortage, the explosion of car use and traffic congestion, and shrinking natural space—remain to be grappled with. Given the political will, the region could mobilize its extensive capacities, including a vigorous civil society and many companies working toward sustainable communities, to face these issues.

In other parts of the world where these companies operate, such as India and Taiwan, the story is not the same. Many of the same problems are emerging without the policies and organizations that are needed to address them. In many developing nations pursuing IT-led growth, worker safety and environmental quality are low priorities to the central government. The role of the company—and of their home governments—therefore increases in ensuring that worker, community, and global environmental health do not suffer as a result of their business.

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CHAPTER FOUR

MOVING AHEAD: TOWARD A CSR POLICY FRAMEWORK

INTRODUCTION

The case studies commissioned for this report and reviewed in Chapters Two and Three show that as companies go global, specific environmental and social impacts and dilemmas differ substantially on a sectoral basis. In both oil and high tech sectors, however, the performance of individual companies is highly variegated—some grab the nettle much more than others. Moreover, in both sectors, multinationals face some similar challenges and opportunities, especially the inadequacy of local regulatory oversight, the importance of engaging with local communities, and the transformative potential of greater public accountability.

Most importantly, the case studies show that the missing link is government. A public policy framework is needed to complement and strengthen voluntary initiatives. Public policy needs to work hand-in-hand with companies and their stakeholders to define and implement corporate social responsibility as a mainstream business management concept.

After drawing lessons from the case studies, this chapter considers the potential of policy initiatives to define expectations, set a floor for performance, and empower investors, NGOs, and the public through information. It first describes policy initiatives emerging at the global level. It then outlines elements of a national public policy framework, especially the role of government in improving the quality of and access to performance information. The chapter concludes with a look at sub-national policy initiatives—essentially the role that the state of California could play as an innovator in developing a public policy framework for corporate social responsibility.

CASE STUDY LESSONS

Industry Sectors are Characterized by Leaders and Laggards—Both oil and high tech sectors are characterized by leader and laggard companies in terms of environmental and social performance. Leader companies tend to set benchmarks rather than make vague commitments, provide more quantitative data about their performance to the public, and are usually more willing to engage with communities and other stakeholders. Leaders tend to be large and well capitalized, with highly visible brand names and reputations to protect. Interestingly, the studies confirmed that when companies lead, either on particular issues like air and water emissions, or on general management systems like labor rights and protections, they do so both at home and overseas. The same is true for laggards. The overseas performance of a company tends to be a continuum of its domestic record.

Smaller companies and large companies that act as suppliers tend to be much less visible. Much less information is available about their environmental and social performance and the little there is indicates less attention than the leaders. These less visible companies include smaller oil exploration and production companies, contract computer manufacturers, and the thousands of contractors and subcontractors integrated into the high tech production chain. The market pressures on these companies to implement CSR are weak or nonexistent.

Regulatory Oversight is Inadequate Everywhere—In both the oil and high tech sectors, regulatory oversight is inadequate in developed and developing countries alike. On the one hand, governments are either unable or unwilling to adequately monitor and enforce compliance with existing laws. On the other hand, the laws and standards themselves are often nonexistent or inadequate.

A multinational following local law in a developing country where the standards are lower than in developed countries for either reason will, in fact, operate under double standards. But even companies that follow best practices globally operate under conditions of inadequate oversight. The inability of regulators to keep up with the potential health hazards in the evolving chemical stew used by semiconductor manufacturers is a good example.

Voluntary Initiatives Alone Cannot Solve Environmental and Ethical Dilemmas—Many companies in both sectors try to address the lack of adequate regulation by developing and imposing their own set of global standards on their facilities. In the oil sector, it is hard to disentangle to

what degree of specificity such worldwide standards were implemented, and there was some evidence that different standards of care applied at home and abroad.

However, because the context in which companies operate varies greatly, environmental and social impact will vary even when companies use the same management standards wherever they operate. For example, the regulatory and cultural context in which worker-management relations or citizen advisory groups must function will result in vastly different outcomes with the application of the same standards. In addition, best practice cannot necessarily address the most intractable environmental impacts of both industries, which can only be solved through product redesign and substitution.

Micro-Macro Gap: Companies Cannot Adequately Deal with the Cumulative Impacts of Sectoral Development—Our field investigations found that large-scale investment by multinational corporations created planning and resource dilemmas for surrounding communities. These generally had to do with the cumulative impacts of several companies' operations in a limited geographic space. The degradation of land, water, and air, and the perceived inequity of large oil revenues amidst growing poverty, for example in the Niger Delta area, can be attributed to the oil sector as a whole more easily than to individual companies.

The toxic waste, water demands, or livability problems of Hsinchu Industrial Park or other Silicon Valley look-alikes also reflect cumulative impacts of the high tech sector. Without a better public planning and goal setting process, individual companies—no matter how advanced their codes of conduct—will not be able to adequately address sustainability in economic development.

Engaging with Local Communities and Other Stakeholders is Useful to All Concerned—One of the most strident stakeholder critiques of company social performance is the failure to adequately engage with and respond to the needs and demands of local communities. Oil companies have been particularly vulnerable to such criticism, especially when lack of engagement is coupled with widespread environmental damage, like in the Amazon and Nigeria. Where companies made a serious effort to engage stakeholders, as in Shell Oil's Camisea project or Intel's Costa Rican advisory groups, better projects and plans emerged and the local perception of the company improved.

Lack of Adequate Information Hampers Efforts to Evaluate Progress— Companies in both industries suffer from a lack of adequate internal and external information about how actual environmental practices and

performance stack up against either the companies' own stated goals, industry benchmarks, or public expectations. We found that no one— often including the companies themselves—had a set of comparable and complete information, including from suppliers.

In the oil sector, the variations in social and environmental conditions from one site to another make it hard for outsiders to know if best practice in one context is even minimally adequate in another. The same insufficiency of benchmarking data is true in the high tech sector. In this sector, worries about differentiated standards are replaced by worries about supplier performance. The move toward a contract-manufacturing model, with long and complex supply chains, diminishes the ability of either companies or outsiders to evaluate claims of responsibility.

Best Practice isn't Good Enough: Public Policy is Needed—The case study lessons point to two broad conclusions. First, individual companies can do much on a voluntary basis to improve their own environmental and social commitment and performance. The performance span between leading companies, especially those committed to best practice, and lagging companies, is substantial.

Second, without change in the policy frameworks that set rules and determine market incentives for all players, voluntary initiatives can go only so far. They cannot fully resolve the human and labor rights dilemmas that multinationals face in a highly differentiated global economy, nor deliver broad social objectives such as sustainability at home or abroad. Without complementary policies that change market incentives and generate a new, common floor of corporate social obligation, voluntary initiatives will generate limited and incremental change. At the macro level, and often the micro as well, best practice is not good enough.

GLOBAL POLICY INITIATIVES

As a matter of logic, global corporations can only be adequately regulated at a global level. A global regulatory framework would create a level playing field and a minimum set of obligations for companies no matter where their operations are located. Global minimum norms can be developed either through top-down exercises of global diplomacy, or bottom-up approaches based on harmonizing national regulation.

The idea of regulating transnational corporations is not new: In the 1970s, developing countries led an effort to develop a binding code of conduct for transnational corporations, proposals that faded in the 1980s as the

countries vied for foreign direct investment.[1] A new generation of initiatives is slowly gaining currency.

Treaties and Conventions

No overarching convention defines corporate social and environmental obligations. However, a host of treaties—directed primarily at states—provide guideposts. States have taken on labor, environment, and human rights obligations with the expectation that each state will turn them into national law binding on private actors, including companies.

The International Labor Organization, for example, negotiates detailed treaties and agreements on employment and workers' rights. Human rights treaties bind states to respect freedom of association and protect the rights to physical integrity, health, education, and welfare. Multilateral environmental agreements prohibit or restrict the use of certain resources or substances, or require inventories of resources and emissions. A few bilateral and regional trade agreements include minimal provisions on labor and environmental rights. To date, states have resisted calls for such provisions to be included more broadly in trade and investment agreements.

An emerging body of international law governs the obligations of states to provide information. The Aarhus Convention in Europe provides detailed standards for disclosure of environmental information, public participation in environmental review processes, and access to the courts.[2] To date, these obligations refer to government information only.

Despite significant growth in international human rights, labor, and environmental law, existing obligations remain piecemeal and have been ratified by only some states. Moreover, only a fraction of those states that have ratified have implemented the obligations by enacting local laws.

The Universal Declaration of Human Rights, the cornerstone of all human rights treaties, is not by its terms limited to states. Its preamble refers to "every individual and every organ of society" which is to "promote respect for these rights and freedoms." While the Preamble is not binding law, it does reflect the drafters' intent that the Declaration's substantive provisions apply to more than states.[3] Recent efforts by scholars and policy institutes have attempted to delineate the legal responsibilities, direct and indirect, of corporations in the human rights area. They have concluded that companies have such responsibilities at least within their sphere of influence, and that imposing legal obligations on companies is both desirable and the wave of the future.[4]

Soft Law Initiatives

A number of *soft law* initiatives also encourage improved corporate accountability. Agenda 21, the blueprint for action approved at the 1992 Rio Conference on Environment and Development, calls on corporations to take a proactive role in improving both performance and disclosure.[5] The World Bank publishes best practice environmental standards for a number of industries and project types.[6] For the most part, these initiatives are voluntary for both states and corporations. For example, the International Labor Organization (ILO) has promulgated a nonbinding Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy.[7]

The Organization for Economic Cooperation and Development (OECD) has also been actively engaged in developing voluntary global corporate norms. The original OECD Guidelines for Multinational Enterprises go back to 1976. They were revised most recently in 1999 and approved by the governments of the twenty-nine member countries of the OECD.[8] Argentina, Brazil, Chile, and the Slovak Republic also signed on in 2000. The new draft was updated to include a range of human rights, labor rights, and environmental issues, in addition to general ethics, consumer protection, tax compliance, and antitrust issues. The guidelines also include recommendations for corporate disclosure. They are recommendations from governments, and intended to be voluntary.

An implementation mechanism for the OECD Guidelines is, to date, largely untested. The mechanism entails complaints by workers, NGOs, or any interested party to National Contact Points that have been assigned within each state to handle inquiries and problems related to the guidelines. The National Contact Points are supposed to use their good offices to resolve disputes involving multinational enterprises operating within their country. If the issue cannot be resolved through mediation or otherwise, a National Contact Point may issue public comments on the dispute. The U.S. has signed on to the guidelines, and a National Contact Point is located within the State Department. It is still early to tell whether corporations or NGOs are prepared to take the mechanism seriously.

International initiatives aimed directly at corporations rather than governments have focused on non-binding, voluntary efforts. In 1999, UN Secretary General Kofi Annan unveiled the UN's Global Compact, calling on corporations to help the UN implement the standards found in the Universal Declaration of Human Rights, the ILO's Declaration on Fundamental Principles and Rights at Work, and the 1992 Rio Declaration. The Global Compact's nine principles cover human rights, labor, and environment, but are framed at a high level of generality.

Moreover, the Compact includes no monitoring or outside verification mechanisms: companies simply sign on and often use their sign-on in their public relations. A website provides tools, case studies, and resources to allow business leaders to translate the principles into management practices.[9]

The UN Environment Programme has joined the Global Reporting Initiative (GRI), a coalition of NGOs, corporate health and safety officers, accountants, and consultants. GRI aims to encourage corporate reporting to the public by providing guidance on issues to be covered, format, and measurement and assessment tools that will allow corporate reports to be more comparable and credible.[10]

Launched as a separate institution in February 2002, the GRI is the leading effort to provide a template for corporate disclosure, though NGOs and others have criticized it because it is based only on company-wide, rather than facility-based reporting. There are also a number of private efforts led by accountancy federations, social auditing firms, or others to create social and ethical accounting standards by which to measure corporate social performance.[11]

In 1998, the UN Sub-Commission on the Promotion and Protection of Human Rights established a working group on transnational corporations. The working group, chaired by Professor David Weissbrodt, agreed to prepare a code of conduct for transnational corporations based on existing standards, devise a mechanism for implementation, and consider the possible liability of states and corporations that fail to fulfill obligations.[12]

Voluntary global norms allow leaders to create a "moral floor" and set an agenda that can generate the momentum to pull along laggard states and corporations. Many NGOs contend, however, that such voluntary schemes are insufficient to change behavior on a broad enough scale.

In preparation for the 2002 World Summit on Sustainable Development conference in Johannesburg, a coalition of groups led by Friends of the Earth (FOE) promoted the idea of a "corporate convention"—a set of mandatory global environmental, labor, and human rights obligations.[13] It is not clear, however, that enacting such standards top-down at the global level is politically feasible. Even if states agreed to a global convention, enforcement would likely be stymied by corporate opposition at the national level. A global bottom-up approach simultaneously targeting national law in a number of key capital-exporting states might be a slower but surer route toward enacting global corporate norms.[14] Indeed, FOE and other NGOs are exploring such a strategy.

Beyond the enforcement difficulty, only a very minimal set of obligations will resonate across industries, locations, and levels of development. Global norms march forward at the pace of the slowest marchers. In many cases, national requirements or voluntary commitments will be more detailed and substantive than what can be negotiated in a treaty, raising fears that harmonization will push down, not up. Much of the substantive standard setting in this area will have to come at the sectoral level, given the level of specificity required to be useful. Such standards are now being developed for some industries on a voluntary basis and will only happen after a period of national and regional experimentation and experience.

Regional Initiatives

At the regional level, governments are assuming a more prominent role in the debate over corporate social responsibility. The European Parliament has called for an EU-wide code of corporate conduct, and its Employment and Social Affairs Committee voted in May 2002 to require triple bottom line reporting for large companies.[15]

The Commission of the European Communities (the EU's executive and administrative body) in May 2001 promulgated a Recommendation on the recognition, measurement, and disclosure of environmental issues in the annual accounts and annual reports of companies.[16] The Commission has initiated a consultation process to formulate the most appropriate ways for the EU to promote CSR. The options the Commission is considering include "developing an overall European framework aimed at promoting transparency, coherence, and best practice," including for evaluation and verification of performance information.[17]

The Commission for Environmental Cooperation of the NAFTA countries is also looking at how to support voluntary corporate initiatives to improve both better compliance with existing laws and better environmental performance beyond compliance.[18] Other advocacy efforts have targeted trade and investment agreements, such as the Free Trade Area of the Americas, as an arena in which to build common environmental and social norms in the global economy.[19]

Europe has shown leadership at a national level as well. The United Kingdom appointed a Minister for Corporate Social Responsibility. U.K. law requires pension trustees to disclose how they take account of social, environmental, and ethical factors in their investment decisions. A recent guidance for companies (the Turnbull Report) asks them to take into account environmental, reputation, and business probity issues in reporting. A legislative Corporate Responsibility Bill launched in June

2002 would make social and environmental reporting mandatory, and place specific duties and liabilities on company directors with respect to environmental and social issues.[20]

France requires publicly traded companies' annual reports to include auditable information on social and environmental issues, including greenhouse gas emissions, occupational hazards, and pay equity. The Nordic countries, as well as the Netherlands and Australia, also mandate corporate disclosure of environmental information. The Dutch government announced it would establish an information center on CSR. The Danish government is working to establish a European Academy on CSR.[21]

TOWARD A U.S. POLICY FRAMEWORK FOR CSR

The U.S. lags behind other OECD countries in embracing a proactive role for government in encouraging CSR, and importantly, there has been little public debate or discussion about whether and how government could and should play a role in encouraging corporate social responsibility and accountability. Being a laggard is ironic: the U.S. was an early leader in the area of information disclosure and, in terms of government information, remains far more transparent than many European countries. But the laws requiring corporate disclosure to regulators or the public are piecemeal and under-enforced.

We propose a policy framework with four elements. First, government should act to increase the quantity and quality of information about environmental and social impacts flowing from companies. Second, government should act as a convener, bringing together companies with a range of stakeholders, including local officials, communities, NGOs, investors, workers, and the wider public. Third, government should provide technical assistance to both companies and citizen groups to improve the practice of CSR and the public's ability to evaluate gains and setbacks. Fourth, government should leverage its considerable clout as a public investor, including through public pension funds, and as a purchaser of goods and services, to improve corporate social performance.

Improving Access to Quality Information

Information is a public good, one that is key to making markets work. Information must be generated, standardized, provided, managed, verified, and disclosed to the public to fulfill its central role in encouraging ethical corporate behavior. Public policy can improve how each of these functions is now performed.

Right-to-Know Laws

U.S. corporations now report to the government on a wide range of issues, from toxic releases to equal employment opportunities to lending patterns. However, reporting is limited to domestic operations, while production and sales processes are increasingly global. Current reporting on overseas operations is much less common than reporting on domestic operations. Moreover, companies differ in their definition of which overseas operations (fully owned subsidiaries, joint ventures, etc.) should be included, and few include information on supplier performance, beyond noting whether or not they require suppliers to meet generally unspecified environmental criteria or to comply with the applicable local law. Thus, it is impossible for an outside observer to tell whether risk has been reduced or merely shifted to another locale. Getting a true picture of corporate performance relative to others or over time now requires global data.

A coalition of NGOs has proposed expanding U.S. social and environmental disclosure laws to cover the overseas operations of U.S. firms and their suppliers. The coalition's proposed International Right-to-Know Act would require U.S.-based companies and stock issuers, their subsidiaries, and contractors (over certain threshold sizes) to disclose to the U.S. government and the public information on emissions to air and water, toxic releases and transfers, occupational safety and health, security force arrangements, community relocation, human rights, environmental and labor policies, and any complaints filed in these areas.[22]

To the extent such reporting stimulates internal management processes for obtaining the information, it feeds into the voluntary sustainability management framework, while providing a minimum common standard for what and how to report. If companies are truly employing a single global standard, expanding existing data collection techniques from U.S. facilities to all facilities should not prove overly burdensome.

Many companies already gather the information requested by the Toxics Release Inventory (TRI) and other U.S. environmental laws for all their facilities. They simply have no reason to make it public. Moreover, oft-expressed industry worries about competitors being able to reverse engineer secret manufacturing processes from TRI data do not seem to have been a serious problem in practice so far.[23] There is no reason to think international reporting would prove any different.

Mandatory reporting should encompass a limited set of indicators, but a broad set of reporting actors. Requiring large companies to make this information public in the U.S. will provide the depth of coverage

necessary to be able to really benchmark and compare, driving a "race to the top."

Protecting Investors Through Securities Reform

One option for improving disclosure would be to expand the use of existing laws governing disclosure by publicly traded corporations. All corporations that issue stock in the U.S. are subject to certain requirements under both federal and state securities laws. On the federal level, any firm with more than $1 million in assets and over five hundred shareholders has to file regular reports with the Securities and Exchange Commission (SEC). In addition, firms that solicit proxies as part of their annual meeting are subject to further disclosure requirements.[24] What needs to be disclosed is set out in Regulation S-K, and includes such areas as pending litigation as well as general information about the business, its finances, and the risks it faces. Misstatements (or material omissions) are punishable.

Disclosure is only required of *material* information, however. According to the Supreme Court, material information is that which a reasonable investor might have considered important in making an investment decision. The SEC and the courts have recognized that even information that affects a small dollar amount of the corporation's assets may be considered "material." In addition, environmental liabilities (from government lawsuits, for example) are clearly material. In 1999, the SEC clarified that facts related to legal compliance or management ethics can be considered material, and in 2001 it reminded companies that environmental liabilities and potential liabilities must be disclosed.

More and more analysts and securities specialists have recognized that current definitions of materiality—which largely focus on narrow economic performance measures—are inadequate. Concerns with unethical financial dealings have focused new attention on the accounting methods (generally accepted accounting principles, or GAAP) developed in the 1930s as the underpinnings of SEC reporting requirements. According to one study, some 30 to 40 percent of outcomes in stock performance during the 1990s could be explained by using traditional financial measures reported in SEC filings; the rest were due to non-reported types of variables. [25]

Even such mainstream organizations as the Brookings Institute and the American Enterprise Institute have jointly called for updating the information available to potential investors, using the new capabilities of the Internet.[26] Moreover, by the 1990s socially responsible investing involved one out of every seven dollars under professional management,

suggesting that corporate social performance is material to a much larger group of investors than was the case when the rules were put in place.[27]

The SEC has been reluctant to use its power to require disclosure of non-financial information, or even of the potential financial consequences of corporate activities in the environment, labor, or other social arenas. A 2000 World Resources Institute study showed that pulp and paper companies consistently underreported actual and potential environmental liabilities arising from pending regulations and laws, even though those regulations had significant effects on earnings potential. The SEC took no action on the omissions. Indeed, of the more than five thousand administrative proceedings initiated by the SEC over the last quarter century, only three were based on inadequate disclosure of environmental risks or liabilities.[28]

A few NGOs have begun challenging SEC inaction when corporations fail to disclose pertinent information about their environmental liabilities. Such challenges have involved, for example, Viacom, Phelps Dodge, Waste Management, and Crown Central Petroleum, which had failed to disclose labor boycotts or environmental liabilities in their reports to investors. The investors complained that the lack of disclosure misled them as to the soundness of their investment in the company, and resulted in losses.

A group of NGOs and socially responsible investors have formed the Corporate Sunshine Working Group (CSWG) to develop appropriate measures for expanded disclosure.[29] The CSWG hopes that, with enough public outcry over the Enron scandal and other debacles, and with support and interest from the investing community, the SEC will convene a regulatory negotiation process to develop expanded social disclosure requirements. In the meantime, the SEC has announced that it will be scrutinizing reports more carefully to find cases of undeclared environmental liabilities, but to date its reform proposals do not go nearly far enough.

The current CSWG proposal, like the Right-to-Know one, would require companies to provide a list of the countries where they have facilities or operations, disclose corporate political contributions and lobbying activity, and provide data on product recalls and product-related claims and settlements. It would create a cumulative threshold for reporting of environmental data, and would require data on percentage of unionized workforce and compliance with occupational health and safety, anti-bribery, labor rights, and anti-discrimination laws. It would require companies to disclose security arrangements with state or private police and military forces.

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One logical business objection to expanded disclosure is that it will cost an inordinate amount of time and resources to be constantly seeking, updating, and publishing more data. However, much of this information is already available in internal company reports, regulatory permits, and the like. Using the Internet to publish and disseminate it would vastly reduce the amount of time and effort needed, assuming agreement on the definitions of indicators and data elements, probably on an industry-by-industry basis. Government should take advantage of the current wave of reform in the accounting and financial analysis community to ensure that the broader public interest is incorporated into the new standards and methodologies.

Data Management: Making Sense of Mountains of Data

Too much undigested data can simply overwhelm recipients and not be useful. Data needs to become information, and then knowledge. One study of public reporting under the European Management and Audit System (EMAS) scheme showed little actual use of EMAS-related information by communities and NGOs.[30] The reason, in part, is that there was no institution or organization dedicated to processing and drawing conclusions from the information.

In the U.S., right-to-know networks and other private environmental groups have processed and publicized TRI data.[31] Other private groups like the Investor Responsibility Research Center analyze the available information for institutional investors. A few investment firms pick stocks using good environmental management as a consistent indicator of a well-managed company.[32] As more—and more diverse— information becomes available, these groups will find their resources stretched thin. To make public access to information meaningful, more resources will be necessary.

Government could play the role of information manager. It could gather, store, and organize the information available in accessible, searchable, and useful formats and databases. Different formats would serve different needs. Some scientists, NGOs, and others would want raw data to undertake research or make their own assessments. Community and labor groups, business analysts, investment advisors, and others would likely be more interested in specific "cuts" of data.

EPA's recent efforts to make its environmental databases available over the Internet exemplify the promise of that medium for making large amounts of information easily available. Unfortunately, in the wake of the

September 2001 terrorist attacks, some within government and industry have overreacted, reflexively trying to shield all data from public disclosure. This is a mistake.

Government agencies themselves may not be the only, or even the best, processors of data. Government support of independent research organizations that can process the raw data in various ways as requested might be a better option. Such an approach would balance the need to have enough uniform data categories to be able to benchmark and compare within and among industries and over time, with the need to tailor information to specific constituencies while not overwhelming the data generators with demands.

Regulatory Incentives for Producing Accurate and Complete Information

Incentives can be "carrots" or "sticks." Good regulation involves a mix of both. On the carrot (positive) side, a number of emerging state and federal environmental programs offer benefits like shorter permitting times, one-stop shopping, multimedia permits, fewer inspections, or positive public recognition for companies that substantially exceed compliance with environmental law. These positive incentives are envisioned as a tailored, individualized system that will allow increased innovation by industry leaders and allow regulators to focus scant resources on the worst problems.

"Beyond compliance" programs include EPA's Performance Track and Stewardship Track Programs; green track programs in Oregon, Wisconsin, and elsewhere; and a large number of state programs tied to implementation of environmental management systems (EMSs). A national initiative of state regulators, academics, and some NGO representatives—the Multistate Working Group—seeks to test whether implementation of an environmental management system, by itself or in conjunction with other requirements, results in improved environmental performance. Earlier reinvention initiatives include Project XL and the Common Sense Initiative.[33]

These incentive-based programs generally require participating companies to meet three requirements: 1) an adequate environmental management system (usually, but not always, based on ISO 14001), 2) enhanced disclosure of environmental data, and 3) some form of stakeholder consultation process. The data disclosure requirement is generally limited to resource use, emissions, and wastes, and has not to date included any occupational health or other non-environmental data.

Expanding these programs to cover health and safety or labor issues would be complex, involving many more agencies, data collection, and sets of incentives, but could be done. Companies that wished to benefit from the additional flexibility of green track programs would voluntarily serve as testing grounds for improved information provision, and could both receive feedback on the utility of the information and help refine the easiest and most useful ways to obtain it.

At the same time, environmental groups and labor have expressed concern that regulators not give away the store in an attempt to draw facilities into voluntary programs. As one analyst put it, "the challenge of all voluntary programs is to attract not merely the top corporations, but participants with the potential to achieve better performance."[34]

Protecting Consumers from False Advertising

Positive incentives for increased information production are growing, at least in the environmental area. Less developed are negative incentives to ensure that the information provided is complete and accurate. Without some check on the abuse of self-generated, self-reported data, such data will inevitably be suspect to target audiences. Indeed, stories of incomplete or misleading information in corporate reports and audits abound.

For example, a recent New Economics Foundation study found that Barclay's Bank's annual report extolled its commitment to local communities even as it closed hundreds of rural branches, and that Ford proclaimed its commitment to energy efficiency without noting that its cars got the worst gas mileage of any in the industry.[35] An inquiry by MIT Professor Dara O'Rourke into the on-site factory monitoring of major social auditor PricewaterhouseCoopers showed that auditors missed major health and safety and labor law violations.[36]

Public exposure and denunciation obviously provide some check on false or misleading reporting on corporate performance, but depend on the industry and/or issue having a high enough profile that the companies involved fear harm to their reputation. Investigation is costly and difficult, often impossible for outsiders. An additional check on accuracy and completeness is needed, one that will generate appropriate due diligence within the corporate structure itself. That incentive can most easily be developed through expansion of existing legal liability regimes.

Both the federal and state governments have long protected consumers against false advertising and against fraudulent and illegal business practices. While the SEC requires information to protect investors, the Federal Trade Commission and its state analogues are supposed to

protect consumer interests. However, the Federal Trade Commission has taken a cautious stance to regulating claims of corporate responsibility. It has, for instance, created rules about false claims in the eco-labeling area, but enforcement has been lacking.

In this area, as in the incentives area, state governments have gone further than federal law in protecting consumer interests. For example, California's Unfair Competition Act, Business and Professions Code 17200 et. seq., prohibits unfair competition, which is defined to include any unlawful, unfair, or fraudulent business act or practice. The Act has been interpreted very broadly. Any person may bring an action on behalf of herself or of the general public. No damages are allowed, but successful plaintiffs can get an injunction or restitution of unlawful profits.

Consumer and public interest plaintiffs have used the Act as a supplementary means to get at behavior prohibited under other statutes, since anything that is a business practice and is forbidden by law— environmental or labor law violations, for example—is automatically a violation of the Act. Although the issue is not entirely clear, even a violation of foreign laws by a U.S. corporation might well be enough to give rise to liability, at least so long as the foreign law violation affects domestic commerce.[37] Even if not unlawful, practices that are unfair or fraudulent will also give rise to liability. Unfair is a notoriously vague term but includes immoral, unethical, or oppressive practices. The term fraudulent only requires a showing that consumers are likely to be deceived by the defendant's conduct.

Just as changes in the economy and corporate practices require changes in securities-related disclosure, they require changing disclosure-related consumer protection law as well. In a product-based economy, with product change relatively slow and predictable, corporations advertise products on the basis of their inherent characteristics, price, quality, and the like.

Over the last decade or so, however, the corporate responsibility movement, the rapid pace of product change, and increased market competition have combined to lead corporations increasingly to market brand name or image independently of a particular product.[38] Thus, Chevron lauds its efforts to save wetlands and threatened habitats in its "People Do" advertising campaign. Shell touts its commitment to human rights in the pages of The Economist, and Nike cultivates an image of athletic prowess independent of any line of shoes or garments ("Just Do It"). By what moral and legal standards should such claims be evaluated? Does truth matter?

The California Supreme Court in 2002 decided that false advertising and unfair business practices law extends to a company's misrepresentations about such things as labor practices. The case alleged that Nike misrepresented its labor practices overseas in public statements, thus misleading consumers.[39] Nike argued that its statements, whether true or not, were protected political speech. A majority found that "[t]he First Amendment does not prohibit the state from insuring that the stream of commercial information flows cleanly as well as freely[…] When a corporation, to maintain and increase its sales and profits, makes public statements defending labor practices and working conditions at factories where its products are made, those public statements are commercial speech that may be regulated to prevent consumer deception."

There are dangers to this approach. A rash of lawsuits may scare off corporations from voluntary reporting before mandatory reporting systems are won, and may make the battle for expanded mandatory reporting more difficult. One of the sad realities of the current situation is that many corporations will only engage in voluntary disclosure *because* they believe it has no legal consequences.

One way to ensure adequate investigation and disclosure while mitigating perverse incentives would be to allow companies a short window (ninety days, for instance) in which to self-correct discrepancies that are brought to their attention without penalty, an approach now used under a number of U.S. environmental laws. Self-correction would also entail an enforceable commitment to future outside monitoring and verification, to avoid companies simply waiting until they are "caught" to disclose the required information.

Verification, Certification, and Accreditation Standards

A robust, credible system of self-reporting will require external verification of company performance. A third party verification system transfers the cost of compliance and the risk stemming from misinformation from the public to the companies themselves.

 Still a nascent science, existing verifications have been undertaken mostly by large accounting/consulting firms, with mixed results. As Professor O'Rourke of MIT found, such verifications have often missed health and safety-related issues, had trouble obtaining adequate information from workers or local community members, and evidenced a pervasive pro-management bias. Yet the accounting profession is firmly lodged in the business of reputation assurance. If accountants worked with local groups and NGOs, results might be better.

Fundamental questions have not been resolved: Who's monitoring the monitors? What, precisely, is being verified? What is the appropriate methodology? What are the appropriate qualifications of verifiers? Any third party system creates a risk of undue influence on the verifiers by their clients.

In the area of financial accounting, a combination of private accounting standards and government oversight could potentially create some "rules of the game," although the Enron scandal has laid bare the limitations of this kind of approach. In the arena of CSR verification, there are no rules, however limited. GRI as well as international standards bodies and accounting associations are considering verification standards, but the proposals are still in the early stages.

The state might consider creating incentives for companies to have their reports (whether voluntary or mandated) verified by third parties that meet specified accreditation criteria. An ideal verification system would combine systems and data verification "from above" with social and environmental conditions verification "from below." To date, third party verification has been the former, with verifiers talking to company management, reviewing books and data collection methods, and spot-checking underlying data. All this is necessary, yet insufficient.

An oft-repeated concern of local communities and workers is that outsiders, no matter how independent or well-intentioned, cannot easily penetrate foreign work cultures and overcome local suspicions in the short period of time they are on-site. Verification from below creates channels for local residents, company workers, and locally based professionals to feed information to a third party on an ongoing basis. Local knowledge is then compared with the company's own monitoring results and other available information.

Thus, if local residents complain about illnesses or the smell and taste of drinking water near a plant that uses toxic chemicals, yet the plant indicates that toxics use and disposal are well managed, verifiers would know that further investigation was in order. Similarly, if workers have a channel by which to lodge concerns, even if anonymously, large discrepancies with surveys or interviews taken inside the plant would provide a verifier with cause for further investigation into working conditions.

Government can play a role in strengthening the credibility of third party verification by establishing standards for the accreditation of verifiers. Government, or government-private partnerships, can set out rules for training, areas of expertise, independence, competency, and licensing,

much as is now done with other financial professionals. In Europe, companies use private bodies to certify their compliance with EMAS, but these private verifiers are subject to public accreditation in their home country. That accreditation then allows them to work in any EU member state.

Government as Convener, Trainer, Consumer, and Investor

Voluntary initiatives toward corporate social responsibility are driven by market-relevant information and social pressure. Only government can strengthen and manage the information milieu. Another unique capacity of government is the ability to convene all sectors of society in an effort to define social norms and devise policies to promote the social good.

Corporations and NGOs alike have learned that there is value in dialogue and consultation among all stakeholders affected by corporate activities. However, the time and effort involved in sustaining dialogue, and in assuring that agendas are set broadly enough and that agreements are carried through, cannot fall to either business or public interest organizations alone.

Government can proactively define agendas, make it feasible for parties to keep coming to the table, oversee implementation of agreements, and give a dialogue process credibility and scope. For example, local governments can convene regular meetings of corporations, grassroots groups, local officials, researchers, and others to assess regional environmental and social impacts and develop region-wide sustainable development blueprints. These impacts would be beyond the scope of what any single industry or group would tackle in an internal stakeholder process, yet the cumulative and synergistic effects of the industries in a geographic region (airshed, watershed) cannot be ignored.

At a national level, something like a Global Corporate Social Responsibility Round Table would help to define a national policy agenda. The round table could be convened by the executive branch and coordinated by the State Department's Undersecretary for Global Affairs, by Congress, or by a joint initiative. The round table idea could also be replicated at the level of Congressional districts. The round table could bring together leading human rights, environment, and labor groups, corporate leaders, and government policymakers to consider pressing issues and develop a policy response.

Only a government-initiated process can gain the support of industry and local groups around common targets and benchmarks. Similarly,

government could convene regular meetings of specific sectors; for example, regular meetings with corporations and the Socially Responsible Investment (SRI) community on disclosure issues, or with corporations and the public health and scientific communities on the structure and results of worker health studies.

Providing opportunities for training is another key government role. Government could help to train both large corporations and community groups on how to conduct multi-stakeholder dialogues. Tools of mediation, active listening, and conflict resolution might be especially valuable. Another area for training for companies is how to set CSR objectives and develop good auditing, management, and reporting systems. Small and medium-sized businesses often need specific cost-effective tools to implement CSR.

Finally, government can play a key role as a market player, specifically, as a consumer and investor. Government is a major investor in U.S. corporations through public pension funds. Federal and state governments can use their leverage as investors to press for improvements in disclosure and in performance. For example, in Massachusetts, Representative Jim Marzilli is working to introduce two bills, one that would direct the state's pension fund to vote their proxies in favor of any shareholder resolution asking for disclosure, and the other to publicly disclose how the fund votes its proxies. California's lead pension fund, CalPERS, already discloses how it votes its proxies for its three hundred largest holdings.[40]

Government could use its leverage as investor to favor companies that show leadership on CSR, to make Socially Responsible Investment funds part of the portfolio available to federal employees for retirement funds, or to push for better screens and indicators on SRI funds. Government could also encourage its related pension funds to vote in favor of pro-disclosure shareholder resolutions and even, in extreme cases, to divest from companies that engage in particularly egregious behavior.

The federal government spends some $200 billion a year in goods and services.[41] Leveraging its spending power to favor positive environmental and social impacts could have a significant impact on markets. The federal government under President Clinton took some steps in this direction, promulgating an Executive Order that required government agencies to purchase environmentally preferable goods when possible.[42] Defense Department contracts already specify a number of quality and environmental management requirements. But more could easily be done.

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A ROLE FOR CALIFORNIA?

At this initial stage of policy development, experimentation and variety are watchwords of appropriate action. Pilot projects, regulatory experiments, and the like may be more easily and appropriately carried out at the state than the federal level. The results of local or state-level "laboratories" can feed into developing national and international frameworks.

With a history as an innovator, the state of California is well placed to take a leadership role in stimulating public debate and in developing CSR policy instruments. California is a major player in the global economy. With a gross state product of over $1 trillion, California's economy is the fifth largest in the world. Exports of goods and services totaled over $1 billion in 2001, accounting for about 15 percent of U.S. exports.[43] California-based companies are known as leaders and innovators, most recently, but not exclusively, in the high tech area. California's economy is also highly diversified, with a full range of industry sectors. Despite the current economic downturn, the state's long-term economic prognosis is strong.

California has long been in the forefront of regulatory strategies.[44] Its air pollution standards, farm worker protections, and other innovations have been exported to other parts of the country, and have served as templates for similar programs around the world.[45] The state's Proposition 65 law (officially called the Safe Drinking Water and Toxic Enforcement Act of 1986) pioneered a disclosure-based approach to reducing toxics use that has resulted in major improvements in product formulation.[46] In 1999, California approved a disclosure initiative on pesticides in schools, requiring school districts to warn parents when their children might be exposed to poisons.

California currently chairs the Multi-State Working Group on environmental management systems, and is designing a "superior track" environmental regulatory program that includes a substantial disclosure component. At the regional level, state and local authorities in a number of areas have been developing regional sustainability plans that integrate environmental and social concerns and that involve businesses, regulators, and the public in cooperative goal setting and monitoring exercises. The Sustainable Silicon Valley initiative is one such project.

Two approaches would have broad appeal: first, to develop a performance-based approach to mandatory disclosure; and second, to pioneer a proactive role for the state's own investments and purchases.

Information Disclosure

California consumers need accurate information on the companies that produce the products they buy in order to make informed purchasing decisions. In a state where large numbers of people participate in boycotts of everything from tuna to old growth wood, this is a significant concern. Moreover, products made abroad for consumption in California may result in a transfer of environmental or other problems to the state. California is also becoming a center for socially responsible investment firms.

One leg of a California-based strategy would focus on disclosure. What would such a disclosure initiative look like? We cannot answer that question definitively here. But a number of approaches should be considered, either singly or in combination. It may make sense to start with a minimal set of obligations and build up over time, as both business and government become more comfortable.

Raw Data Production / Government Regional Planning

Local communities need more data about the performance of the local facilities in their areas, as well as about the companies' operations in other places, for comparison and benchmarking purposes. Current domestic reporting requirements, at the state and federal levels, do not provide the information communities need. At a minimum, data should be required at both a company-wide and facility level. Any number of standard lists of indicators (GRI, for instance) could be used, but should be supplemented by specific data requested by local government, community groups, or industry watchdog groups regarding a specific industry practice.

The balance between tailoring and standardization is key, taking into account that mandatory indicators should set a floor, not a ceiling, for reporting. Ideally, the data generated should be germane and feed into local and regional sustainability planning exercises, including agreed-upon goals for both industry and government. The raw data produced should be coordinated with existing data production obligations under the TRI and other laws, to minimize the burden on facilities.

One of industry's standard objections to any mandatory disclosure law is that it would require companies to disclose trade secrets or other sensitive information. Under a "raw data" approach, these objections could be dealt with through an exemption procedure similar to that in the Massachusetts Toxic Use Reduction Law, which allows companies to provide certain information to regulators on a confidential basis.[47] The

Massachusetts experience shows that in practice, protection of trade secrets has not proven much of a problem; few companies have taken advantage of the exemption procedures.

As data is produced, a useful complement to a raw data production approach would be government—direct or indirect—facilitation of user-friendly ways to access and manipulate the data, to allow users to see things like regional and local impacts, trends over time and by industry, and the like.

A disclosure-based initiative would complement current "second generation" initiatives. In California, pilot projects paving the way for a beyond compliance green track must now disclose significant amounts of data to regulators, and some data to the public. The legislature specifically directed that enhanced access to information be one of the main criteria for evaluating the success of such projects.[48] The information must include an assessment of significant environmental impacts, including data on emissions and resource use.

To date, regulators have had some difficulty convincing a wide spectrum of firms from different industry sectors and of various sizes to participate in and support these projects. If it were clear that a broad disclosure initiative involving all or even part of this data was in the works, there would be a significant advantage to those firms that early on developed internal systems capable of generating and verifying the data, as well as to those that could position themselves as "best of class" early on. Fears about disclosure by some but not all firms creating a disadvantage for the pioneers would be lessened.

A Process-Based Approach

Consumers and investors need information on the performance of the entire supply chain involved in products sold in the California market, no matter where they are produced. Such information can target a limited number of parameters, but must be verifiable in some way. At first glance, this seems an overwhelming task, especially because the weak links in a production chain are the small subcontractors, about whom very little information is available even to the companies themselves. A data collection process that requires and processes emissions, resource use, health and safety, and labor practices data from every step in the production chain of a product is, at best, several decades away.

As a first step, it might be useful to borrow a page from the U.K.'s regulation of pension funds. These funds are required to disclose their policy on socially responsible investing in their Statement of Investment

Principles. No substantive CSR policy is required: disclosure addresses simply whether or not an ethical investment screen is in place. The result has been that many firms have looked at the question for the first time, and have found themselves under pressure from their constituencies to create such a policy if it did not exist.

Similarly, we could envision a publicly required annual report from all companies selling products in California that simply asks, for example, whether the company knows whether all suppliers in the product chain have an environmental management system that meets certain criteria, or whether all suppliers pay either prevailing wage or a living wage, and then asks how the manufacturer knows the answer to that question. This would generate internal processes of investigation and development of such systems, without raising sticky issues about disclosure of suppliers' identities or locations. It would also reach the widest possible group of companies and products, with impacts far beyond California.

In a sense, this process-based approach would be similar to the idea animating Proposition 65. Companies would not have to actually make any changes in how they do business, merely warn consumers about what they fail to do. Disclosure requirements could be attached to products sold in the state (as with Proposition 65) or, more broadly, to products of all companies doing business in the state. Enforcement provisions might also be modeled on Proposition 65. Under this approach, problems like trade secrets do not arise.

Verification Through Consumer Protection Law

As discussed earlier, one of the main shortcomings of the current voluntary reporting approach is that there are few guarantees that the data reported is accurate, and no penalty for even flagrant misrepresentation. A logical place to begin to correct this is with the existing Business and Professions Law.

An amendment could declare that statements about corporate social responsibility in reports or other documents aimed at consumers and/or investors, that turned out to be either willfully untrue or misleading, or unsupported by reasonable investigation into the facts, would be considered unfair and fraudulent. Citizen suit provisions could ensure adequate enforcement.

Such an approach would provide an incentive for companies to make sure the information they were providing was accurate and complete, without punishing them for honest mistakes or lack of information. It would have to be combined with adequate incentives (or requirements)

for disclosure, or the result would simply be far fewer corporations making any kind of voluntary disclosure. It would also have to be combined with a minimum set of parameters for all reporters, to reduce the risk that corporations will simply fail to mention important areas of concern.

Leveraging California's Public Pension Funds

The second leg of a California strategy on corporate accountability could leverage the state's huge pension funds, especially the California Public Employees Retirement System or CalPERS.

As of October 31, 2001, CalPERS' assets totaled $146 billion, making it the third largest pension fund in the world. CalPERS holds stock in over sixteen hundred companies. In March 1999, CalPERS adopted the Global Sullivan Principles, which, among other things, pledge the fund to express support for human rights, protect human health and the environment, and promote sustainable development. They also commit CalPERS to "promote the application of these principles by those with whom we do business."

The CalPERS Board of Investments has taken some steps toward implementing the principles. In Fall 2001, the Board approved a report to study the application of a human rights screen to CalPERS' emerging market portfolio. Produced by Verite, the report produced a methodology for rating countries in terms of civil liberties, freedom of the press, ethnic tensions, government corruption, and respect for human rights.

On February 20, 2002, CalPERs announced that it had adopted the human rights screen by a vote of nine to three of its Board of Investments. Emerging market nations whose publicly traded equities were found to be unacceptable for CalPERS investment included China, India, Russia, and Egypt. Acceptable were Brazil, Israel, Turkey, South Korea, and others.

The human rights screen is the first of its kind in the U.S. and will cause waves in investment circles. The notion that governments have responsibilities to provide the basics of good social governance—and that good governance reduces financial risk—is an innovative step. Whether a "screening out" approach works to promote good governance remains to be assessed.

Moreover, how the screen will affect *corporate* responsibility, on either human rights or environment, is less clear. For example, how will CalPERS treat the companies in its corporate portfolio that do business in the countries that have been blackballed in its emerging market portfolio?

Will CalPERS be open to an advocacy effort by a coalition of environmental, labor, and human rights groups to demand good social performance from corporations? The human rights screen will affect only about $1 billion of CalPERS' assets. The corporate portfolio is close to $100 billion.

The key question, in short, is whether and how CalPERS could move toward implementing the Global Sullivan Principles across all its investments; that is, to apply a wider set of environmental and social criteria to the bulk of its domestic corporate portfolio. CalPERS already sees its role as "moving the herd" in terms of engaging companies on corporate governance such as executive pay and board independence. Could CalPERS embrace the "social responsibility" mantle as part and parcel of good corporate governance?

One option might be first, to apply a set of mandatory reporting requirements to the corporate portfolio; and second, to ask companies to provide information along a number of axes—environmental, worker health and safety, community improvement, etc. The point would not be to screen any company in or out; rather, it would be to set a standard for what kind of corporate governance CALPERS expects/requires in order to meet its fiduciary and social obligations. Moreover, the disclosure requirements would apply not only to a company's global operations but to *all* its operations, both domestic and global.

Big Spender: California as a Consumer

A third leg of a state-based effort to improve corporate accountability could focus on purchasing decisions. The State of California currently purchases nearly $3 billion in materials, goods, and services each year. Currently, environmental impacts and product life cycle are not considered in a comprehensive or coordinated approach in the state's purchasing.

California's current procurement laws already contain certain socially responsible directives. For example, contractors with the state are required to develop and implement a nondiscrimination program.[49] The program "is a set of specific and result-oriented procedures to which a contractor or subcontractor commits itself for the purpose of insuring equal employment opportunity *for all employees or applicants for employment*."[50] This program must embody state law that prohibits an employer from discriminating against employees or applicants of employment on grounds of sex, sexual orientation, race, color, ancestry, religious creed, national origin, disability, medical condition, age, marital status, and denial of family care leave.

California procurement law also requires contractors to certify that that no slave, convict, or indentured or sweatshop child labor was used in the supplies furnished under the contract.[51] Unlike the nondiscrimination statement, this provision may apply only to goods and services provided under the state contract, rather than overall practices of the contractor.

While this provision does not require any disclosure of information—only a certification of compliance—it does require that the contractor "cooperate fully in providing reasonable access to the contractor's records, documents, agents or employees, or premises if reasonably required by authorized [state] officials . . . to determine the contractor's compliance with the requirements" above. And, where the contractor "knew or should have known" that the foreign-made equipment, materials, or supplies furnished to the state were produced in violation of the section, the contract may be voided at the option of the state and the contractor may be subject to monetary and other penalties.[52]

Finally, for contracts exceeding ten thousand dollars, a contractor may not be awarded a contract for the purchase of supplies, equipment, or services if the contractor is "in violation of any order or resolution of the State Air Resources Board, or subject to a cease and desist order for violating waste discharge requirements, or is in violation of provisions of federal law relating to air or water pollution." [53]

One option is to amend these laws to identify that the state has an interest in procuring goods and services from socially responsible businesses, that is, companies that can demonstrate a wider range of good performance on environmental, labor, and human rights grounds. The reporting requirements could be required both in the consideration of whether California will do business with specific companies and as part and parcel of the actual contract awarded to a particular business.

Depending on how the law was written, it could run into—or steer clear of—the quagmire of "selective purchasing" laws, such as the Massachusetts Burma Law. In the Massachusetts case, the law forbade the state from contracting with any company that was doing business in or with Burma. The U.S. Supreme Court ruled that Congress had already spoken on the issue and had therefore preempted state action on the same subject.

Country-specific screens also run the risk of running afoul of international procurement agreements under the World Trade Organization (WTO) and North American Free Trade Agreement (NAFTA). To minimize the risk of

challenge, amendments would have to avoid targeting particular countries, and should ensure that any reporting requirements apply equally to domestic and foreign companies and operations.

Amending a state's procurement laws to define a selective purchasing provision appears to suggest that the state will evaluate and weigh such information in deciding who to conduct business with. There may be a need to consider or develop a set of human rights, environment, and labor criteria on which the state would accept or deny contracts. This means finding consensus on the types of practices that are acceptable/unacceptable to a wide range of state stakeholders, NGOs, labor groups, businesses, etc., which could be a serious challenge.

Corporate Governance Reform

Corporations are creatures of state law. They exist as legal entities under corporate charters granted in accordance with state law. Another way to enhance corporate accountability is to change state laws on corporate governance.

Every jurisdiction where corporations operate has its own law of corporate governance. In Maine, an ex-corporate lawyer is promoting a Code of Corporate Citizenship to be amended to state corporate law. Currently, the Maine law says that directors should discharge their duties with "a view to the interests of the corporation and of the shareholders." The code would add "but not at the expense of the environment, human rights, the public safety, the communities in which the corporation operates, or the dignity of the employees."[54]

In sum, by pushing for improved data collection, verification, and accountability, and increased use of the state's own leverage points, California can move the corporate accountability agenda forward and ensure that the state plays an important role in helping shape future national and international approaches.

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[6] See, e.g. "Pollution Prevention and Abatement Handbook," http://wbln0018.worldbank.org/essd/essd.nsf/Docs/TOC.

[7] See http://www.ilo.org/public/english/employment/multi/tridecl/index.htm.

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[12] Sub-commission on the Promotion and Protection of Human Rights, Principles relating to the human rights conduct of companies, David Weissbrodt, Rapporteur, UN Doc. E/CN.4/Sub.2/2000/WG.2/WP.1 (May 25, 2000). The Principles cover a wide range of subjects including war crimes, crimes against humanity, nondiscrimination, freedom from harassment and abuse, slavery, forced labor, child labor, the right to self-determination, health and safety, fair and equal pay, hours of work, freedom of association, consumer protection, and environmental protection. Key issues still under discussion include the applicability of the draft Principles to all companies or only multinationals, the voluntary or mandatory nature of the Principles, and the contours of implementation or complaint mechanisms.

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[15] S.A. Aaronson and J. Reeves, "The European Response to Public Demands for Global Corporate Responsibility," (Washington: National Policy Association, Feb. 2002), www.npa1.org. For May 2002 update, see http://www.smallbusinesseurope.org/News/1018013853/index_html. The EP's Industry Committee, in contrast, recommended that reporting remain voluntary.

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[38] N. Klein, *NoLogo*, (New York: Picador, 2000).

[39] Kasky v. Nike, 2002 Cal. LEXIS 2591 (Supreme Court of California, May 2, 2002). Company officers claimed, among other things, that Nike's overseas contractors paid a certain amount over minimum wage, and those statements were shown to be untrue. The lower courts dismissed the case on grounds that Nike's statements were protected by the First amendment as political speech about an important public policy area. The lower courts distinguished between statements that dealt with a company's operations generally, which were held to be protected speech, and those directly related to a specific product, which were not protected. The Supreme Court's decision sends the dispute back to the trial court.

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[48] California EMS Pilot Project authorization, 1999.

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[50] Cal. Gov. Code. Regs., title 2, Section 8104.

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 "no foreign-made equipment, materials, or supplies furnished to the state pursuant to the contract have been produced in whole or in part by forced labor, convict labor, indentured labor under penal sanction, abusive forms of child labor or exploitation of children in sweatshop labor, or with the benefit of forced labor, convict labor, indentured labor under penal sanction, abusive forms of child labor or exploitation of children in sweatshop labor."

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