Transnational Corporations and Livelihood Transformations in the Peruvian Andes: An Actor-Oriented Political Ecology

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This article argues for the use of an actor-oriented approach in political ecology studies that links the activities of transnational corporations with local human and environmental change. It argues for the use of sustainable livelihoods frameworks as one way of linking these actor-oriented approaches to local economic, social, and environmental change. Drawing on case study research of Newmont Mining Corporation’s activities in the Peruvian Andes as an example of corporate focused actor-oriented research, the article offers new insights into the role of corporations in shaping social and ecological change in the developing world. The case study illustrates the ways in which household access to resources in the region has been transformed since 1990 by the changing behavior and activities of the corporation through three different time periods.

Key words: Political ecology, transnational corporations, sustainable livelihoods, Peru, Cajamarca, mining

Introduction

Corporations have become the primary actors directing the structure and function of the global political economy and the influence of many of the largest transnational corporations exceed that of all but a handful of the most powerful nation-states. In the past decade, the power of transnational corporations has been consolidated through rapid capital accumulation, increasingly uniform production and consumption, and the extension of operations into many new areas of the planet. As the global system of natural resource extraction and industrial production has been unified under a system of neoliberal economic and social policies, free trade, and investment, transnational corporations have also initiated profound transformations of natural environments that affect not only global and regional ecological processes, but also the local populations that are dependent upon them for survival. This article calls for new research in political ecology research to address these changes through the use of actor-oriented political ecology approaches focused on transnational corporations. I argue that this approach is one way to generate more careful and detailed analyses evaluating the impacts of transnational corporations on local spaces and places. I also suggest that this is one important avenue of inquiry that can contribute to the further broadening of theoretical and empirical understandings of contemporary social and environmental change.

In addition to the theoretical goals of the work, I propose a conceptual framework that draws upon sustainable rural livelihoods approaches as one way of linking the behavior of transnational corporations with local change. This approach allows for more specific treatments of transnational corporations as agents of change and more detailed empirical examinations of household livelihoods and changing resource portfolios. Following this discussion, and as a way of operationalizing the proposed conceptual framework, the article contributes new insights into the role of transnational corporations in shaping social and ecological change in the developing world by drawing upon case study research conducted in the Peruvian Andes. Through a longitudinal time-series case study examination of Newmont Mining Corporation’s transnational mining operations in the Cajamarca region of Peru, the paper concludes with an evaluation of the relationship between the behavior and activities of the corporation and changing household access to resources and livelihood transformations in the region.

Actor-Oriented Political Ecology Approaches and Transnational Corporations

One important feature of political ecology research has been its interest in integrating spatially heterogeneous processes and actors within a framework of ecological, social,
economic, and political relations that links inquiry across scales of analysis (e.g. Blaikie and Brookfield 1987; Bryant and Bailey 1997; Peet and Watts 2004, 1996; Robbins 2004; Wolf 1972; Zimmerer and Bassett 2003). Foundational works by Blaikie (1985) and Blaikie and Brookfield (1987) linked the focus of cultural ecology research on poverty and environmental issues with the broader political and economic factors affecting local resources and livelihood strategies.

Since then, scholars interested in political ecology research have built upon their efforts by focusing on a variety of new directions, such as the impacts of state policies on resource utilization (Hecht 1985; Kull 2004; Paulson and Gezon 2003; Peluso 1996; Sheridan 2001; Stonich 1993; Whitehead and Jones 2007). Scholars have also focused on the importance of local agency in natural resource management and social movements as responses to environmental degradation (Peet and Watts 2004; Scott 1985), how gendered relationships have impacted local actors and resource managers (e.g. Carney 1993; Mackenzie 2003; Rocheleau, Thomas-Slayment and Wangari 1996), and how “discourses” of nature, development, and environmental problems have been constructed and how this has affected resources and resource utilization (e.g. Escobar 1999; Peet and Watts 1996; Sletto 2002). Other strands of recent research have examined the nature of environmental science, biological complexity, and conservation (Campbell 2007; Forsyth 2003; Leach and Mearns 1996; Neumann 1998; Zimmerer 2006) as well as urban and First World settings as important arenas for political ecology investigation (Castree 2007; Heynen 2006; McCarthy 2005; Robbins 2006; Schroeder, Martin, and Albert 2006; Walker and Fortmann 2003).

While political ecology research has evolved in terms of research foci and has broadened its examination of determinants of local change operating at a variety of scales, there have been fewer direct examinations of economic actors such as corporations and their impacts on local places. Certainly scholars have drawn attention to the effects of economic processes such as international trade, markets, and changing patterns of labor in the global economy on local environments (e.g. Awanyo 2001; Grossman 1998). More recently, scholars have also begun to examine corporate actors as part of their focus on broader political economies of change, which includes, for example, Watts’ (2004) evaluation of the role of the oil industry in “petro-violent” activities in Nigeria and Davis’ (2002) critique, in part, of the role of the British East India Company in the creation of famine across much of the Third World during the Victorian Era. Yet while these works provide powerful insights into historical and contemporary processes of political, economic, and environmental change, their discussion of the internal dynamics of corporate actors and their individual behavior, like much other political ecology research focused on similar issues, is quite limited and tends to essentialize corporations as unified entities behaving in an identical fashion. This lack of attention is surprising given the relative importance of corporations, particularly transnational corporations (TNCs), in the current global economy and their role in fundamentally altering natural and human geographies around the planet.

The global economy is dominated by more than 63,000 TNCs with over 800,000 foreign affiliates that span the globe (UNCTAD 2007). Over the course of the past decade, the largest of these TNCs have grown dramatically and expanded operations throughout the world, particularly in developing countries. For example, the top 100 TNCs, as ranked by foreign assets in 2004, controlled more than $8.8 trillion in assets, of which 53 percent ($4.7 trillion) were held in foreign countries (ibid.). In terms of the larger global economy, TNCs control more than 25 percent of global GDP, account for massive flows of foreign direct investment, employ millions of people, and execute more than two-thirds of all international business transactions (Utting 2001).

The influence of TNCs in the global political economy has made them one of the primary forces of economic, social, and environmental change across the planet. From the reworking of trading patterns to the instantaneous movement of enormous capital flows, TNCs affect not only economic development, technology, skills, trade, and employment, but also the living conditions and natural environments of billions of people (Bury 2001). Furthermore, the intensification of market forces during the most recent period economic globalization, under a regime of neoliberal policies and steadily decreasing state interference in the relationships between local and transnational scales, makes an understanding of TNCs much more relevant as the pace and scale of TNC-led change has become more pronounced and widespread. This is particularly significant for many rural populations of the developing world, which have been an important focal point for much political ecology research. Certainly resource extraction, consumer products, popular media, and markets have long been a part of rural livelihoods throughout the world, but, as Bebbington and Batterbury (2001:372) suggest, rural livelihoods and environments in the Third World have been “profoundly reworked in the contemporary period” due to the expansion of corporate power and influence, which is leading to progressively deeper integration of people into market economies.

Given the importance of TNCs in an increasingly globalized and extensive world economy and their increasing ability to affect social and environmental change in the places where they operate, there is a need for more complex evaluations of them as actors, their behavior, and how they can be important agents of change in different contexts. One avenue for doing so in political ecology studies is through an actor-oriented approach. Actor-oriented approaches have emerged in political ecology studies in order to understand how the behavior of actors operating at a variety of scales influence local interaction with resources. For example, Bryant and Bailey (1997) examine the nature of state, corporate, and civil society actors on social and environmental change across a variety of scales of analysis. In addition, scholars examining local organizations and institutions beyond the household have demonstrated their importance and role in managing and
accessing local resources as well as interacting with larger scale actors and processes (Bebbington 1999, 2004; Orsatto and Clegg 1999; Sheridan 2001). Other research that draws on actor-oriented approaches, such as Grossman’s (1998) work on banana production in the Caribbean, illustrates the various, and at times unexpected, impacts of international organizations at the local scale. In addition, research on the state and its impacts, as in Peluso’s (1996) examination of government policies in Indonesia, similarly illustrate the utility of actor-oriented research.

In response to previous critiques of structural theories that were overly aggregative and prone to economic determinism (e.g. Booth 1994; Giddens 1984; Long and Long 1992), actor-oriented research tends to disaggregate political and economic structures by focusing on the role of individual actors at different scales of analysis. In general, actor-oriented approaches focus on the interests, characteristics, and actions of different actors as they pertain to processes of social, political, and environmental change (Bryant and Bailey 1997; Giddens 1984). In doing so, researchers have recognized the importance of both structural factors as well as the role of human agency in determining outcomes. Consequently, actor-oriented research attempts to navigate between the overdetermining essentialism of structuralism and the complexity of atomized localization.

While there is some divergence among scholars how to chart theoretical, empirical, and practical explanatory routes through both the structural forces and human behavior that affect social and environmental change (c.f. Long and Long 1992; Giddens 1984), there are several key elements of actor-oriented research that have guided inquiry in this area. First, there is a tendency to evaluate conflicts and cooperation over outcomes as the interaction of different actors pursuing sometimes very different concerns and interests. Second, there is an explicit recognition that outcomes are mutually determined by both structural elements and human behavior across a variety of scales of analysis. Finally, the power relationships that influence interactions between actors are reciprocal, but not necessarily symmetrical, in nature. Taken together, actor-oriented analyses of environmental outcomes, struggles over resources, and political and social change are able to both identify and examine the relevant actors, the networks that link them together, and recognize the contingent and heterogeneous nature of outcomes that occur through their interactions.

One significant benefit of utilizing an actor-oriented approach in political ecology studies is that it allows researchers to draw direct causal relationships between the activities of particular actors operating at a variety of scales and local resource transformation and utilization. In addition, actor-oriented research can illustrate the complexity of relationships between local places and larger scales of analysis. For example, recent political ecology research illustrates that local resource managers are increasingly drawing on a more complex and variegated network of relationships that are situated across a variety of scales in their production strategies (e.g. Bebbington and Batterbury 2001; Perreault 2001).

Utilizing an actor-oriented approach to analyze corporations will yield similar benefits. There is an increasing need, as Bridge (2003) argues, to “ground” the behavior of TNCs in local contexts. TNC activities are intricately embedded in territories with distinct physical and human geographies with complex histories. These relationships affect how TNCs produce commodities and services in terms of the financial networks they utilize for investment, profits and taxes, where they locate materials and supplies, the nature of human resources that are employed and the types of knowledge that are available to employees, the types of social relationships that they establish in local contexts, and how they affect the environment. Detailed and in-depth examinations of these factors will lead to more robust and complex evaluations of the relationships between TNCs and local spaces.

In addition, by examining TNCs in an actor-oriented fashion, much can be learned about the distinctive relationships that they create with and between state and non-state actors. TNCs as one type of market actor influence and are influenced by other actors both within the market sphere and from the state and civil society spheres, yet they clearly operate under their own logic of capital accumulation, which is conditioned by a distinctive set of rules governing their operations. Analytic studies that focus primarily upon TNC behavior and operating decisions, both across and between scales of analysis, would be able to disaggregate important relationships that condition the functioning of the global economy.

Another important advantage of an actor-oriented approach is that it allows for a more complex understanding of actors themselves. One of the shortcomings of much political ecology research is its tendency to essentialize actors such as the state, NGOs, or local community organizations and treat them as monolithic entities. Overcoming this problem is important for actor-oriented research concerned with TNCs, particularly because the domain of corporations is so large and the nature of their behavior is so diverse. Indeed, studies of corporate structure have emphasized that corporations, even those faced with the same circumstances, make divergent decisions that have far-reaching consequences for both the workers and places affected by their activities (e.g. Sklair 2001). More complex analyses could address questions such as the ways in which operational and decision-making behavior varies between actors across scales of analysis, the nature of the complex internal dynamics of corporations engaged in business activities in a variety of locations, and how the hierarchical structure of firms affects power relations within and among their local, national, and expatriate workers.

In order to accomplish actor-oriented research focusing on transnational corporate actors, researchers need to adopt a set of methodological approaches that accommodate, as Blaikie and Brookfield (1987) have argued, the need for contingency and flexibility in explanation, which has been a hallmark of political ecology research. However, researchers also need to utilize more specific strategies that treat corporations as complex actors.
There are several possibilities that offer promise for further research in this vein. First, researchers need to develop strategies for identifying actors within the vast universe of transnational corporations. This can be accomplished through historical and contemporary analyses of sub-sectors of the global economy, trends in foreign investment across regions, between states, and across local landscapes. In addition, in order to look within individual actors, scholars need to generate rich organizational ethnographies that examine the structure and behavior of corporate entities. Useful strategies to accomplish this objective include archival research of publicly available corporate financial statements and annual reports to stockholders as well as external research and analyst reports. However, one of the most important components of this type of research is the need for researchers to gain access to corporate employees and internal proprietary data. Accomplishing this task can be delicate, time intensive, and an often frustrating activity, but can lead to a rich set of key reports to stockholders as well as external research and analyst data that can greatly assist in the development of more precise relationships that link corporations across scales of analysis.

**Linking Scales: TNCs and Local Livelihoods**

In addition to greater research focusing on the behavior and activities of corporations, actor-oriented research also needs to establish a rigorous set of cross-scalar linkages to evaluate the relationships between corporate actors and local change. One way to do this is by linking the behavior of corporations with household livelihoods. While the activities of TNCs are conditioned by a variety of actors at different scales of analysis and over time, through their investment, activities, and staff they affect people and resources in the areas where they operate. This is particularly important in the case of natural resource extraction activities as they substantially affect both local human populations and natural environments. The affected populations in rural areas of developing countries include households and the resources they access and utilize to produce their livelihoods, which is a well-established focal point of political ecology research (e.g. Bebbington and Batterbury 2001; Blaikie 1985).

While these linkages are not the only possible set of relationships that can be evaluated between TNCs and local spaces, they can provide for a number of theoretical and empirical insights. For example, the specificity of the linkages allow for analyses to highlight the impacts of TNCs on specific geographic localities and how households are affected by and respond to corporate operations. In addition, linking the household unit of analysis to the debate over TNC impacts in developing countries can complement both specific and aggregative studies that seek to evaluate the national-level impacts of TNCs. Finally, this approach can highlight increasingly innovative TNC business activities, such as “socially and environmentally responsible” practices, that also affect household access to and the use of resources as well as broader patterns of social, economic, and environmental change. Collectively, these insights can provide for non-deterministic analyses that highlight what Booth (1994) calls “spaces for change” or interfaces between global and local actors in which TNC activity is changing and being changed.

Household members produce their livelihoods by accessing and transforming resources. TNC activities often affect what resources households access in the pursuit of livelihoods as well as how these resources are accessed. Thus, TNCs can affect the rules and practices governing household access to resources as well as the different resource combinations utilized to produce livelihoods. Several avenues in political ecology research provide direction for examining these complex relationships. For example, recent research focused on actor-network approaches argues for the application of network metaphors, models, and theories to examine the connections between local and transnational realities (e.g. Latour 2005; Rocheleau and Roth 2007). This research avenue is intent on providing critical insights into the role of power in networks and joining social and natural environments in polycentric networks and dynamic systems.

Another important research avenue, and one that this research adopts, is drawn from interdisciplinary and development studies and is focused primarily upon sustainable development efforts to reconceptualize poverty, household livelihoods, and access to resources. Recent research has emphasized that livelihood production strategies are complex, diverse, and draw on a variety of resources in combination that shift over time (Chambers 1995; Chambers and Conway 1992). In order to address these questions, scholars have proposed more refined frameworks for understanding how resource access, household livelihoods, and resources interact (e.g. Bebbington 1999; de Haan and Zoomers 2007; Kay 2006; Leach, Mearns, and Scoones 1997; Scoones 1998).

The common feature of these approaches in an emphasis on a larger array of resources that household member’s access to construct livelihoods. Drawing on the heuristic of capital terminology, scholars have identified several important types of capital resources that are involved in livelihood production. While the use and definition of capitals varies across frameworks and approaches (e.g. Hussein 2002), scholars have generally identified five key resources, which include financial, physical, human, natural, and social capitals (Bebbington 1999; Scoones 1998).

Financial and physical capitals are often combined in livelihoods frameworks (e.g. Scoones 1998) and referred to as produced capital, which has been conceived as infrastructure, transportation, electrical services, savings, and convertible liquid assets as well as regular flows of money such as earned income, pensions, transfers from the state, and other remittances. Human capital has come to be seen as human capabilities such as skills, education, knowledge, ability to labor, and health. Natural capital, as it entered development studies and is focused primarily upon sustainable development efforts to reconceptualize poverty, household livelihoods, and access to resources.
resources such as minerals, forests and soils, and renewable resources such as ecosystem services and nutrient cycling (Costanza and Daly 1992). Finally, social capital has been defined as relational structures (both horizontal and vertical) that facilitate action and as the elements of civil society that have fostered economic development (Harris and De Renzio 1998; Putnam 1993; Schuurman 2003; Woolcock 1998). While some of the conceptual definitions of social capital are still being debated (c.f. Bebbington 2002; Fine 2001), the general notion is that stocks of mutual trust or “connections” between people exist and provide a flow of resources that enables both solutions to problems and the pursuit of economic and political activities.

Overall, livelihood frameworks have been rapidly adopted by many development organizations (e.g. Ashley and Carney 1999; Carney 2003; Hussein 2002). In addition, recent academic research has also illustrated the utility of the rural livelihoods capital framework in geographic studies (Bebbington 1999; Bebbington and Perreault 1999; Bury 2004; Mohan and Mohan 2002).

The following sections utilize a household livelihoods framework based on analyses of produced, human, natural and social capital resources to examine the particular activities of one TNC over time in order to evaluate the ways in which it has transformed livelihoods. The following sections also illustrate the ways in which an actor-oriented political ecology approach can contribute to our understandings of the links between transnational corporations and social and ecological change.

**Newmont Mining Corporation and Livelihoods in Cajamarca, Peru**

In 1992, Denver-based Newmont Mining Corporation began construction of the Yanacocha gold mining operation in the Cajamarca region of Peru (See Figure 1) in cooperation with its Peruvian partner, Compania de Minas Buenaventura, S.A., and the International Finance Corporation (known as Minera Yanacocha or MYSA). Since then, MYSA has become the largest gold mine in Latin America, the largest cyanide heap leaching operation on the planet and one of the lowest-cost gold mining operations in the world. MYSA is often referred to as the “crown jewel” of the corporation’s operations due to its significant reserves, high production, and low cash costs. For example, in 2006, the mine had an estimated 30 million ounces of gold and produced 2.57 million ounces at a cash cost of $193 per ounce. Between 1993 and 2006, MYSA...
produced nearly 20 million ounces of gold (Newmont 2007). In terms of Peruvian gold production, MYSA accounted for 52 percent of all gold production in 2004 (Ministry of Energy and Mines 2005).

In conjunction with MYSA’s rapid expansion over the course of the past decade, Newmont Mining Corporation has also grown very rapidly. The corporation was founded in 1921 as a holding company to invest in worldwide natural resource extraction companies. After rapid expansion into copper, petroleum, and coal operations throughout the world, including the acquisition of significant interests in Southern Peru Copper, in 1961 Newmont began its first gold mining operations in Carlin, Nevada.

By the early 1990s, Newmont was a significant, but still medium-sized mining corporation in the global gold industry with relatively few international holdings. However, beginning with the corporation’s decision to open the MYSA operation in 1992, and to a large degree financed by MYSA’s substantial profits, Newmont began to rapidly acquire gold and polymetallic deposits throughout the world. In addition, the corporation engaged in several high profile corporate mergers and acquisitions that significantly expanded its holdings and operations. As a result, Newmont has become one of the largest gold mining corporations in the world with land holdings totaling more than 29 million acres and operations in New Zealand, Australia, Indonesia, North America, Ghana, Turkey, Mexico, Bolivia, and Peru. In 2006, Newmont recorded $4.98 billion in revenues and 94 million ounces of gold reserves (ibid.).

In Peru, Newmont’s MYSA operations are located in the northern region of the country at elevations ranging between 3,500 to 4,000 meters approximately 35 km from the city of Cajamarca (See Figure 2). In order to exploit the rich gold deposits of the region, and to minimize costs, open-pit mining at several different sites and cyanide heap leaching technology have been implemented in MYSA’s operations. MYSA’s operations were the first large-scale cyanide heap leaching projects in Peru and in 2001 became the largest in the world (Newmont 2001).

While MYSA only began operations in 1992, it has become a huge mining facility that is transforming land cover and land use in the Cajamarca region (Bury 2005).
MYSA's operations presently occupy approximately 10,000 hectares of land. However, MYSA has access to and control over much more land through mineral rights claims it has filed with the Peruvian government (See Figure 2), which, in 2007, amounted to more than 1,500 square km throughout the region (Newmont 2007).

In order to exploit the disseminated gold deposits of Cajamarca, Newmont has introduced a wide array of resources into the region. Between 1992 and 2002, Newmont invested more than $3.5 billion into MYSA’s operations. This includes investments across categories such as exploration, mine facilities, labor, supplies, concession fees, and taxes (MYSA 2002). As these resources have flowed into the region they have spurred a diverse array of physical and human transformations. In addition, Newmont has also implemented a variety of activities intended to positively affect rural livelihoods and urban development. These activities have been organized under the rubric of “socially and environmentally responsible programs” and have followed different types of investment strategies, with differing goals and methods of implementation. Between 1993 and 2002, MYSA invested approximately $21 million in social and environmental programs in the Cajamarca region (Newmont 2004).

Alongside MYSA’s operations in Cajamarca are the households and communities of the region that are situated within the larger physical and human geography of the region. Physically, the region surrounding the mine is located high in the northern inter-Andean valleys of the Peruvian Andes, ranging from 2,800 to 4,300 meters above sea level. The climate of the region is punctuated by two important seasonal variations that affect household agricultural and livestock production activities and the human population of the region surrounding the mine is distributed vertically among four altitudinal life zones.

The human population of the region is almost entirely situated in a rural and highly impoverished social and economic context. By almost all standards Cajamarca is a very poor region. For example, per capita income in the Department of Cajamarca is less than one-half of the national average and less than one-third of per capita income in Lima, 86 percent of houses do not have water or electrical services, nearly two-thirds of all children in the first grade of primary school suffer from chronic malnutrition, and roads and motorized transport are very limited in the region (UNICEF 1998).

Rural livelihoods in the region surrounding the mine are based upon access to and the use of a diverse array of resources, which often change over time and vary between households. However, the most important resource, which constitutes the majority of household livelihood activities either directly or indirectly, is access to natural capital resources such as land and water.

The natural capital based livelihoods that households produce are based primarily on agricultural production, agroforestry, and livestock raising. Generally, rural households utilize several small landholdings across ecological production zones, with little access to improved irrigation or terracing. Through access to these land resources, households produce a variety of agricultural products, primarily tuber crops, corn, and grains such as alfalfa. In addition, households also raise a variety of animals such as cattle, sheep, and pigs, which are pastured seasonally among land holdings and between vertical ecological zones. Agroforestry crops are also distributed across landholdings which provide wood (the major source of energy for communities distributed around MYSA) and construction materials. Households also draw upon natural capital reserves to produce dairy products such as cheese and milk and engage in the artesanal production of ceramics and textiles.

Households also access a complex array of produced, human, and social capital resources in their livelihoods. In order to access produced capital resources, households sell many of their agricultural and livestock products in markets or to dairy enterprises. In addition, households have historically relied on seasonal and semi-permanent migration to either the coast, Lima, or other regions of the country in order to access financial capital through wages and labor (Bury 2007). However, households have historically been only marginally integrated into local and regional markets and, thus, have had very limited access to produced capital resources such as currency and credit. Households also draw upon human capital such as education and training in the production of agriculture and animal livestock as well as in the maintenance of family health. Finally, households utilize social capital resources through access to intra- and inter-family collaborative networks for activities such as crop planting, harvesting, livestock pasturing, and care and the maintenance and creation of basic infrastructure. Households draw upon shared social networks to engage in time and labor intensive agricultural activities that punctuate the growing season (planting and harvesting) as well as care for animals, which are often pastured at higher elevations and far away. These networks are particularly important as they allow households to establish a diverse set of natural-resource based livelihood activities across a variety of altitudinal life zones as well as maintain irrigation networks, bridges, and trails that facilitate these activities.

**Research Methods and Design**

In order to evaluate the linkages between Newmont’s mining activities and changing household access to and utilization of capital resources since MYSA began operations in the region, case study research was conducted in the region for 24 months during three field periods between 1999 and 2003. The research design for the study was based on a purposive and quasi-experimental case study evaluation of the impacts of MYSA’s activities on households in three communities (See Figure 2). The first community (Ladera) that was selected has experienced the largest cross-section of impacts from the mine and the mine’s social programs. The second community (Jalca) that was selected approximates an intermediate range of impacts. The third community (Control) was selected to
provide experimental control, where there have been few indirect and no direct impacts from MYSA and, thus, approximates baseline conditions prior to MYSA’s presence in the region. The selection metrics utilized to determine the impacts of MYSA on the three case study communities were based on a comparative evaluation of social programs that have been implemented in communities throughout the region since 1992. In addition, the selection criteria also included an assessment of the direct impacts of the mine’s operations on communities, which include employment, sub-contracting, purchasing contracts, and physical landscape disturbances.

Within each of the three case study communities, a random sample of 20 household members were interviewed using participatory mapping procedures in order to evaluate both their livelihood strategies and changing household access to and utilization of capital resources. Overall, 59 household representatives were interviewed during the course of the fieldwork (See Table 1). Each interviewee responded to a formal semi-structured questionnaire composed of 112 questions that was designed to elucidate information on how households access and utilize each capital resource and how this may have changed since MYSA began operation in the region. In addition to the formal questionnaire, focus groups were conducted with groups of individuals in each community following the questionnaire in order to validate the household interviews and to qualitatively examine the nature of livelihood changes taking place in the region.

In addition to household interviews, extensive archival research was conducting using state and regional archival sources as well as Newmont Mining Corporation’s corporate archives. Finally, extensive interviews were conducted with local civil society leaders, nongovernmental organizational representatives, and representatives of Newmont Mining Corporation and its operational partners in Peru. In addition, interviews with representatives of the corporation were conducted in Denver, Lima, and Cajamarca. They were accomplished with the full cooperation of Newmont Mining Corporation and its operational partners and constitute an important aspect of the study as they link the behavior and motivations of the corporation and internal corporate dynamics to changing household access to resources in the region.

The following sections present the findings of the case study research across three important periods of change since 1992. These periods are defined by the changing behavior of MYSA in the region as the mine and its operational partners have pursued varying activities and strategies and households have responded to these changes in each of these periods differently. Consequently, this analysis links the decisions and behavior of MYSA’s transnational mining operation, its social and environmental programs, and the impacts of the operation to changing household livelihoods in the Cajamarca region.

### Phase One: Golden Beginnings (1990-1995)

On July 23, 1992, after nearly a decade of exploration activities, Newmont’s board of directors approved the development of MYSA’s operations. One of the major factors behind Newmont’s decision to begin operations in the Cajamarca region was the corporation’s general manager in Peru, Len Harris. Harris, who had lived and worked in Peru for many years, sought to develop new opportunities for the corporation under President Alberto Fujimori’s new neoliberal restructuring initiatives and to contribute to positive changes within the country.

Because Newmont’s decision to invest in Peru was perceived as risky, the corporation entered into a joint venture with one of the country’s largest mining corporations (Compania de Minas Buenaventura) and the International Finance Corporation. In addition, Newmont’s investments were guaranteed by the Overseas Private Investment Corporation in the United States and the Multilateral Investment Guarantee Agency.

As Newmont’s operations commenced in the Cajamarca region, it was required by Peruvian law to secure access to and control of several thousand hectares of land and it subsequently began to improve and construct more than 100 km of roads, move hundreds of tons of equipment and supplies from all over the world to the region, hire thousands of mine workers from several different countries, and establish new management facilities in both Cajamarca and Lima. In addition to activities directly related to the mine’s operations, under Harris’s guidance, and with the approval of the Peruvian government, Newmont and its operational partners also began a series of social programs in communities throughout the region.

Initially, the goals of the social programs corresponded to the then anticipated six-year lifespan of MYSA’s gold deposits in the region. Thus, the program had short-term objectives such as offering direct poverty relief assistance to households and gaining the confidence of communities along the perimeter of the mine. In 1993, the Yanacocha Ladies Association (ADAMINYA), which is comprised of the partners of male employees and female employees of Minera Yanacocha, began a series of direct assistance programs in the region. The activities of ADAMINYA conducted between 1993 and 1995 included rural assistance programs in the area of health and educational assistance and gifts to communities. Approximately 35 communities participated in the rural programs between 1993 and 1995.

By 1994, MYSA’s new discoveries of gold deposits in the region extended the estimated mine life to 15 years. Based
on this expectation, MYSA created new social development programs called the Rural Development Program and the Yanaocha Association to direct rural social activities within the corporation and also entered into a number of agreements with NGOs, public institutions, international organizations, and the private sector. The goals of MYSA’s programs subsequently shifted significantly as they began to provide assistance for rural infrastructure and household economic production activities. Thus, while MYSA’s social programs continued to work in the areas of health and education, new activities were directed towards the rehabilitation and construction of roads, rural sanitation, technical assistance, forestry programs, agricultural development, and income generation.

The effects of MYSA’s activities on household access to resources during this phase were largely limited to households in Ladera, the case study community closest to the mine’s operations and the area that was initially targeted by ADAMINYA and the Rural Development Program for assistance. This is important to note because while households and communities throughout the region initially sought assistance from the mine, only those that were selected by company representatives were included in the programs.

In Ladera, the most significant measured shifts in household access to resources in response to the first phase of MYSA’s social programs were related to human and produced capitals. A number of these changes are summarized in Table 2 for Ladera in relationship to the Control community. In terms of produced capital, households indicated improved access to markets for agricultural and animal products as well as some increases in overall household incomes. This was largely related to the improvement of the road to the community, which was used initially by MYSA for exploration activities. However, by 1996, most of these positive changes were eliminated as the road was not maintained and fell into disrepair after several seasons of rain. In addition, several households also reported significant increases in income as they sold parcels of land to the mine, received temporary employment with the mine, and gained access to new infrastructure such as potato seed banks that were constructed in the community. Households also reported significant increases in access to human capital during the first phase of MYSA’s programs. This includes increased access to primary and secondary education, health services, preventative health care, and sanitation. In addition, households in Ladera also reported increased access to technical training and health education programs.


During the second half of the 1990s, MYSA’s operations continued to expand as it discovered more gold deposits in the region. As MYSA’s gold production increased rapidly, the organizational structure of the mining operation also changed. This included the retirement of Len Harris in 1997 and the shifting of operational responsibilities within and between the joint venture partners. This reorganization was due, in part, to the fact that Newmont was rapidly expanding its operations throughout the world, and it felt that it had established a widely acclaimed positive relationship with the communities of the Cajamarca region (e.g. Indacochea 1998; Ministry of Energy and Mines 1998). Thus, the company

### Table 2. Selected Measures of Changing Household Access to Resources in Ladera (1992-1995)

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<thead>
<tr>
<th></th>
<th>Ladera</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Produced Capital</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of households reporting increased access to markets for products</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>% of households reporting increased access to potato seed banks</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>% of households with one or more member working for MYSA</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>Average income for land sales to mine per hectare (current US$)</td>
<td>550</td>
<td>0</td>
</tr>
<tr>
<td>% of households reporting increase in incomes</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td><strong>Human Capital</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of households with children attending school</td>
<td>79</td>
<td>65</td>
</tr>
<tr>
<td>% of children possessing school supplies</td>
<td>63</td>
<td>50</td>
</tr>
<tr>
<td>% of children eating at school</td>
<td>68</td>
<td>35</td>
</tr>
<tr>
<td>% of households indicating increased access to teachers</td>
<td>68</td>
<td>20</td>
</tr>
<tr>
<td>% of households indicating increased access to health posts</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>% of households with access to latrine</td>
<td>89</td>
<td>15</td>
</tr>
<tr>
<td>% of households that attended at least one workshop on:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural Improvement</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Agroforestry Practices</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Preventative Health</td>
<td>37</td>
<td>0</td>
</tr>
<tr>
<td>Nutritional Vigilance</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>Health Assistance</td>
<td>16</td>
<td>0</td>
</tr>
</tbody>
</table>
began to delegate many of the functional responsibilities of operating the mine to its Peruvian partner. Within Newmont, many of the responsibilities for the social investment program were shifted to the public relations department, the Lima offices and the Peruvian manager of the Rural Development Program in Cajamarca. Consequently, the goals of the social development programs were largely determined by the rural development team manager in conjunction with a host of partner organizations in the region.

While the shifting of these responsibilities did not amount to major organizational changes within the overall structure of MYSA or its operational partners, it did however have significant ramifications for the social programs underway in the region. First, because new gold deposits were being developed, the life of the mine was expanded to approximately 25 years. The changing of the mine’s time horizon initiated a reformulation of the development program’s goals and objectives. In 1998, MYSA financed a comparative advantage study that developed new goals for the rural program which were focused primarily on forestry, raising cattle, and tourism in the region (Indacochea et al. 1998). Based on these findings, the objectives of the program changed in order to foster long-term competitive advantages in the region. In addition, the program was extended to include more communities (including Jalca) and an urban component was also developed for the city of Cajamarca. Finally, MYSA’s development program eliminated some components of the earlier direct assistance programs in order to refocus the program’s activities.

Overall, during this phase many of the programs implemented during the first phase of operations were eliminated in the rural communities surrounding the mine, but this was also accompanied by the addition of new rural credit programs, technical assistance programs, and the construction of potable water systems in many of the same communities. However, not all of the communities that participated in the first phase of the programs were included in this new phase, and all of the participating communities were again selected by the development team in accordance with MYSA’s interests in the region.

For households surrounding MYSA’s rapidly expanding operations, as the scale of the mine increased, so too did the magnitude of the effects of the mine on household access to resources. In Ladera, the new programs initiated by MYSA shifted household access to produced resources, largely in the form of access to credit programs. For example, 41 percent of households reported that they received loans. Households reported that they used these loans to purchase more cattle and engage in small business activities such as artesanal crafts. However, many of the programs implemented in the first phase either disappeared or were reduced. Thus, while households reported positive increases in access to produced and human capital resources during the first phase of the program, many of these changes were subsequently short-lived or reversed. For example, while 15 percent of households indicated that their incomes increased during the first phase of the program, during the second phase of the program, largely due to the fact that the road through the community was not being maintained, 20 percent of households reported decreases in their income. In addition, some of the initial increases in household access to health and educational resources were also eliminated or reversed as health posts stopped receiving medical supplies and staff and educational training programs were eliminated.

As MYSA’s social programs were extended to more communities during the second phase of the program, households in the Jalca case study community began to experience shifting access to capital resources. These shifts largely corresponded to the new goals of the development programs formulated in the late 1990s. Table 3 summarizes these changes across produced and human capitals in relationship to the Control community. Generally, households experienced increasing access to markets for animal and agricultural products as well as milk and processed dairy products due to the construction and continued maintenance of the road to the community by

<table>
<thead>
<tr>
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<th>Jalca</th>
<th>Control</th>
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<tbody>
<tr>
<td>% of households with children attending school</td>
<td>85</td>
<td>65</td>
</tr>
<tr>
<td>% of children possessing school supplies</td>
<td>70</td>
<td>50</td>
</tr>
<tr>
<td>% of children eating at school</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>% of households indicating increased access to teachers</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>% of households indicating increased access to health posts</td>
<td>45</td>
<td>0</td>
</tr>
<tr>
<td>% of households with access to latrine</td>
<td>85</td>
<td>15</td>
</tr>
</tbody>
</table>
MYSA. Key informant interviews indicated that the road was being maintained by MYSA for exploration activities and the current operations of the mine. In addition, households also experienced significant increases in access to human capital resources in terms of education and health programs. Furthermore, households in Jalca also reported increased access to potable water supplies as MYSA, in conjunction with state agencies, supported the installation of a potable water system in the community between 1997 and 1998. For example, 80 percent of households reported that they received access to potable water during this period.

**Phase 3: Tension and Reorganization**

Beginning in 2000, a series of crises affected MYSA's operations, local communities, and household perceptions of the mine throughout the Cajamarca region. First, in June of 2000, a truck hauling mercury from the mine spilled over 150 kg along 41 km of highway near the community of Choropampa (see Figure 1). Subsequently, more than 100 houses were contaminated with mercury and several hundred people were affected. A series of widespread social disturbances followed the mercury spill. Second, a series of petroleum spills by oil trucks affected watersheds in the region. Third, widespread protests occurred in 2001 in Bambamarca and Cajamarca over alleged fish deaths related to MYSA’s operations in nearby watersheds. Fourth, concern over the environmental impacts of MYSA’s plans to exploit its Cerro Quilish deposit above the city of Cajamarca led to several large protests, resulting in violent disturbances, an attempt to burn down the mine offices in Cajamarca, a reduction of the mine’s gold production in late 2004 and the eventual voluntary cessation of mining activities by MYSA on the Cerro Quilish deposit. Finally, communities surrounding the mine, concerned about the increasing social and environmental impacts of the mine, also engaged in numerous protests and other disturbances to force MYSA to address their concerns.

The mercury spill in 2000 ushered in a new phase of relationships between Newmont, its operational partners and local communities. For example, the mercury spill, and subsequent events, illustrated that not only were the established safety protocols of the mine not being fully observed, but that the “social license” that the mine had enjoyed in the region was in question. This raised serious questions about the ability of the mine to operate in the country as the local political and economic environment of the mine’s operations was becoming increasingly hostile.

In response to these series of events, Newmont began to reorganize its relationship with its Peruvian operating partner, Compania de Minas Buenaventura. First, Newmont moved several managers out of the Cajamarca and Lima offices and brought in or promoted new management personnel. In addition, many of the responsibilities that had been shifted to the Peruvian management team during the second phase of operations were moved back to Newmont’s headquarters in Denver. This included a reduction of subcontractors working with the mine and an increase in employees working directly for MYSA. Second, a social development team was organized in Denver and headed by high level management personnel. This shifted the responsibilities for many of the social development programs directly to the United States. Finally, Newmont representatives became much more involved in the day-to-day operations of the mine in order to respond to challenges to the company’s presence in the region.

Overall, the extensive reorganization of MYSA shifted the operational activities of the mine as well as the goals and objectives of the social development projects underway in local communities yet again. Generally, many of the objectives of the second phase of social programs were continued, but additional activities were begun to assuage the increasing concerns of communities. In particular, MYSA began or extended the provision of potable water systems and implemented a variety of watershed degradation prevention measures, including the construction of large sediment dams at the top of two critical watersheds. In addition, new economic programs such as small-scale jewelry cooperatives were created to integrate communities directly into the gold mining process.

In terms of the impacts of MYSA’s activities on household access to capital resources in the case study communities, the third stage of operations has had direct impacts on produced and natural capital resources. However, many of the measured shifts in household access have also been the result of the changes that have taken place during the first two stages of operations as well. Table 4 summarizes some of the major findings for natural and social capital measures in both Ladera and Jalca in relationship to the Control community.

Generally, based on both the quantitative measures reported in Table 4 and the qualitative responses of households and key informants, MYSA’s activities have negatively affected household access to natural capital and transformed household access to social capital resources. Other reported negative impacts on natural capital resources include decreased access to land resources for livestock and agriculture, land-use intensification, and soil erosion problems as land prices have increased dramatically and households were not able to acquire new land reserves.

In terms of social capital, MYSA’s activities also had significant consequences. In addition to the measures reported in Table 4, households also reported significant decreases in their access to the number and quality of inter-household relationships, community organizations, and leadership and local conflict resolution mechanisms. This is particularly evident in Ladera, where many households, in an attempt to address the problems related to the shifting goals and priorities of MYSA’s social development programs, have engaged in political resistance and civic mobilizations. Thus, while household access to social capital resources has declined at the community level, new scalar relationships have been negotiated with regional, national, and transnational organizations concerned with the impacts of MYSA’s activities in the region.
Conclusions

Overall, as the previous sections have illustrated, household access to resources has shifted significantly in response to the activities of MYSA in the Cajamarca region. Generally, households have experienced some increasing access to produced and human capital resources and decreasing or transformed access to natural and social capital resources. In response to these changes, household livelihoods in the case study communities have shifted. Generally, households have increased their livestock activities, while also intensifying their use of diminishing land reserves. In addition, households have also been integrated more extensively into regional markets for agricultural, livestock, and artesanal products, which has consequently shifted many of their daily production activities. However, as the previous sections also illustrate, the nature of shifting household access to resources has been uneven, variable over time, and there have been uneven impacts both within and between households and across communities.

The previous sections also illustrate how households have been important agents of change in the region as their access to resources has shifted since 1992. Households have forged new multi-scalar relationships that have significantly affected their access to social capital resources and they have been at least partially successful in forcing MYSA and Newmont to alter its behavior and the types of social programs it is executing in the region surrounding the mine. This is an important conclusion as it demonstrates the ways in which household agency and activities have affected MYSA’s behavior. It also illustrates the mutually constitutive and contingent nature of relationships between the mine and local households and how they have changed over time.

In addition to illustrating the nature of changing household access to resources in response to MYSA’s activities, the previous sections also demonstrate how and in what ways many of these changes are related to the changing behavior and goals of Newmont Mining Corporation and its operating partners. In particular, as the time frame, magnitude, and local responses to the mine have shifted, so too have the activities of MYSA. This highlights the importance and utility of an actor-oriented approach as well as the need for scholars to “unpack,” so to speak, large and diverse actors within local contexts and across scales of analysis.

Finally, the case study findings also illustrate the theoretical utility of this type of research for political ecology studies. The relationships between MYSA and local households in the Cajamarca region are not unilinear and uniform in nature, rather events and people within both MYSA and the local region have created complex relationships linking transnational and local scales of analysis. This emphasizes the importance of disaggregating economic actors and their behavior between scales, time frames, and across geographic contexts. It also suggests that studies should be more thorough in the ways in which they theoretically treat the nature and direction of relationships between global economic change and local contexts as well as the ways in which we conceive of the very diverse nature of actors as agents of change.

While this research only begins to address these questions, it is hoped that future research in actor-oriented political ecology studies will be able to more closely treat these issues, which will broaden and deepen our understanding of contemporary social, political, economic and environmental change.

Notes

1This research conceives of the household as a unit of analysis which is comprised of individuals that share a common set of resources and serves as a unit through which resources outside the household are accessed. It is defined as “a residential group of individuals living under the same roof and eating out of the same pot” (Friedmann 1992:46).

2Scholars have also identified cultural capital as an important category of resources. This research does not include a discussion of this category of resources as it adopts, following Scoones (1998), a four

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Natural Capital</td>
<td>Ladera</td>
<td>Jalca</td>
</tr>
<tr>
<td>% of households reporting decreased access to irrigation water</td>
<td>58</td>
<td>5</td>
</tr>
<tr>
<td>% of households reporting new access to potable water</td>
<td>42</td>
<td>5</td>
</tr>
<tr>
<td>Social Capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of households reporting increased perception of difference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>education</td>
<td>73</td>
<td>70</td>
</tr>
<tr>
<td>money</td>
<td>52</td>
<td>30</td>
</tr>
<tr>
<td>inequality</td>
<td>85</td>
<td>75</td>
</tr>
<tr>
<td>% of households that have</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spoken with government official</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>engaged in a protest</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>joined a political campaign</td>
<td>20</td>
<td>5</td>
</tr>
</tbody>
</table>


capital set of resource categories. As Hussein (2002) illustrates, there is some conceptual variation across sustainable livelihoods approaches and cultural capital is present in only some of the frameworks.

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Bridge, Gavin

Bryant, Raymond

Bryant, Raymond and Sinead Bailey

Bury, Jeffrey


Campbell, Lisa

Carney, Diana

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