

RÉSUMÉ

Multinationales minières et les travailleurs indigènes en Papouasi Nouvelle Guinée: Tensions et défis dans les relations industrielles.

Benedict Y. Imbun

Cet article examine de manière critique les défis et les tensions auxquelles les multinationales minières font face en matière de formation et de contrôle de la main d'oeuvre dans le contexte d'un pays en voie de développement. Plusieurs séjours sur le terrain nous ont permis de recueillir de nombreuses données à travers l'observation et des entrevues avec nombreux mineurs dans des nouvelles mines de la Papouasi Nouvelle Guinée. Nous avons constatés l'utilisation et la manipulation à la fois de coopération et de conflit par l'employeur, et que celles-ci jouent un rôle essentiel dans le fonctionnement rentable et efficace des mines. Nous avons aussi constaté la mise en place de politiques de discriminations positives ethniques par les multinationales minières. Ces politiques favorisent les communautés locales et sont un atout stratégique à la mise en place de mesures sociales et économiques qui contribuent au bon fonctionnement d'une nouvelle mine dans une communauté indigène. L'article conclut par contre que la gestion des relations industrielles dans ces nouvelles mines peut encore être améliorée avant d'atteindre les meilleures pratiques dans ce domaine.

Multinational mining companies and indigenous workers in Papua New Guinea: Tensions and challenges in employment relations

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This article critically examines the tensions and challenges multinational mining companies (MNNMCs) face in the formation and control of the workforce in a developing country setting. Data gathered through extensive fieldwork, interviews and observation of Papua New Guinean mineworkers shows that the manipulation of cooperation and conflict by MNNMCs is imperative to operating profitable and efficient mines. The article examines the role of MNNMCs in implementing ethnic affirmative action policies which favour local communities as a strategic imperative to operations of socially and economically sound greenfield mines. The article concludes that the management of employment relations in these greenfield mines still has a long way to go if it wants to the best practices seen in some mining operations.

Introduction

The globalization of capital and its easy accessibility to developing countries by foreign MNNMCs is more common now than ever before. The MNNMCs have pursued a mixture of conventional and innovative business strategies and human resource strategies often in challenging geographic, socio-economic and political conditions found in developing countries (Embersson-Bain, 1994; Imbun; 2006a). Generally, mine management is acknowledged for maintaining a hard nose style (Ebel, 1976). In the last two decades, however, in developed mining countries such as Australia, new management techniques like human resource management and worker empowerment arrangements (e.g. enterprise bargaining and individual contracts) have contributed to the establishment of a relatively more flexible, less strict workplace, reflecting the changes in the larger work environment (see McGrath-Champ, 1993; Swain, 1995). Despite the broad changes in the regulation of employment in the mining industry, this article argues that the hard nose style of management of miners is alive and well in some parts of the developing world, particularly

in the PNG 'greenfield mines'. In this context, the challenges MNMCs face and the initiatives taken in developing and managing employment relations are critically examined to determine how they meet their primary responsibility of ore production through management of a uniquely diverse workforce.

The PNG mining projects, in this article, are referred to as 'greenfield mines'², as they are located away from the existing urban areas. They are surrounded by subsisting tribesmen who previously had very little or no contact with any form of employment outside of their own small communities.

Methodology

This work is based on an empirical study conducted over seven weeks. It is the result of several field trips undertaken to five major PNG greenfield minefields (Ok Tedi, Porgera, Misima, Tolukuma and Lihir), beginning in the mid-1990s. The bulk of the information used in this article was collected through fieldwork conducted in 2002 and follow-up visits that occurred in 2003. In-depth interviews were undertaken with workers representing different strata of each mine workforce. This was combined with an analysis of primary documents. Focus groups were organized with workers, trade union leaders and management personnel of each mine to assess the conduct of employment relations. Follow-up interviews were conducted with other workers to confirm the data collected earlier.³

The article commences with a brief discussion on MNMCs and employment relations in developing country mines. The subsequent discussion looks at the various stakeholders of employment relations in the greenfield mines: international managers, international non-managerial workers, national proletariat workers, and local workers. Their interactions with each other and, most importantly, the goals of international mining capital shape the pattern and conduct of employment relations practices. Next, the article discusses how management strategizes to make employment relationships more viable in a diverse workforce. The constraints and inherent challenges of the management of employment relations form the focus of the subsequent portions of the article. It concludes with a discussion on the need for a co-operative approach to resolving workplace issues.

MNMCs and Employment Relations in Developing Countries

Prior to political independence, the management of employment relations in the developing country mines was influenced by the whims of the colonial state and multinational mining capital. A systematic process of recruitment of workers was used by the MNMCs where the most powerful stimulus for locals to seek employment at the mines was the introduction of a poll tax throughout most colonies in Africa and PNG (Nelson, 1992; Coulter, 1967 and Bates, 1971). The employment relationship was regulated by a dubious legal and coercive system of indentureship in the mines. The local workers were subject to criminal penalties if they deserted their boss or failed to work diligently.

The employment arrangement during colonial times never fully promoted the advancement of indigenous workers into a fully-fledged working class. In Africa, the local mine workers constituted the “worker-peasantry” category that was characterized by semi-proletarianisation because of their predominantly overlapping relationship with the subsistence economy (Dansereau, 2000). In the workplace, however, the relationship between the miners and labourers was generally characterized by a bland paternalism. Labourers discontented with either working conditions or management, often withdrew from work for the day or in some cases completely disappeared from the workplace (West; 1958; Newbury, 1975). Generally, the employment relationship in this period was conflict-ridden, prompted by racial and labour disputes in the colonies (Jackson; 1924; Fitzpatrick, 1978).

In the post-independence period, MNMCs have been openly accepted by developing countries as economic agents to invest and exploit their mineral resources. The main objectives of MNMCs have been to minimize costs, increase production and ensure profitability. Such predetermined principles have impinged enormously on the conduct of employment relations, as it is labour that makes returns on investment for foreign mining capital. In many developing countries arguably, employment relations, which are so fundamental to the process of mining, have often been either under-recognized in the overall range of priorities, or handled by unions and management in ways that place short-term expedience above the achievement of longer-term strategic goals.

There has been neglect in recording management behav-

behaviour and attitudes in the regulation of mining labour relations in developing countries. The few works that exist provide mostly an anthropological perspective of third world mining workers confronting foreign management through the formation of militant workers unions (Quamina, 1987). The documents focus on diverse topics ranging from African migrant mine workers and their social and tribal experiences in mining camps and towns to assimilation to the rigours of mining workplaces (Polier, 1994; Erwaza, 1999; Ferguson, 1999). From another perspective, Dansereau, in a study of Zimbabwean mine workers, emphasized the relationship between labour migration and the semi-proletariat characterized by a host of adaptive strategies, both rural and urban (Dansereau, 2000). Above all, the literature generally documents a working class engaging in industrial activities while apprehensive of foreign management practices and goals.

MNMCs in PNG Greenfield Mines: The Background

Mining has long played an important role in the economic and social development of PNG. Modern mining has a relatively short history, which is a reflection of the late large-scale penetration of capital into the country. Alluvial gold mines existed as far back as the last century. Many of these were small but managed to support the colonial economy over a substantial period of time before the country gained political independence from Australia in 1975. The development of the Bulolo and Wau goldfields in the 1920s and 1930s were particularly significant. The mining industry was halted briefly during World War II and thereafter temporarily abandoned due to a combination of depressed gold prices and exhaustion of the available resources (Newbury, 1975). In the past four decades, the country has seen a renewed upsurge of mining activity, commencing with the first major discovery of the Panguna copper deposit on Bougainville Island in the 1960s and its full-scale development in the 1970s. From then on, major discoveries have been found which have resulted in new mines and the ongoing exploration of potential fields. In 2005, mining exports accounted for 47 per cent of the country's GDP. PNG was ranked fifth in an international ranking of gold producing nations. As a result of the pivotal role mining plays in the country's development, the PNG government vigorously supports the industry through marketing and through implementing policies conducive to overseas investment (Filer and Im-

bun, 2004; Imbun, 2006a and Imbun, 2006b).

PNG's participation in the mining industry over the decades has been greatly influenced by the prevailing socio-economic and political conditions affecting the country. Early engagement of local mining labour commenced in the late 1800s when independent expatriate alluvial miners employed locals as carriers, guides and 'pick and shovel' handlers as the miners searched river beds and hill tops scouring for gold (Gibbney, 1972; Nelson, 1992:11). While local participation was mainly for adventure during this period, the second phase of PNG mining, beginning in the 1900s, was marked by bonded labour (through indentured labour arrangements) and conflict. Lured by promises of money and luxury goods such as axes and salt, able young locals went, in droves, to work the various gold rushes. Although the indentured labour system was policed by the colonial state to ensure that local labour was not harshly treated and exploited, locals unfamiliar with intensive work arrangements often fled back to their villages. It was in the Bulolo and Wau gold fields from the 1920s to early 1960s that the former pick and shovel boys gradually acquired semi-skilled jobs involving steam engines and gold processing equipment. Despite numbering 2000 in the mid-1940s, the indentured labour system largely excluded workers from entering into any collective organization (Nelson, 1992:12). Individual manifestation of protest took the form of withdrawal of labour for a day or total disappearance from the mine sites (Newbury, 1975:27) as organized trade unions existed for only expatriate workers.

The third phase of local labour progression in PNG mining occurred with the large-scale development of the Bougainville mine in the late 1960s. This period also coincided with the development of the industrial relations system through enactment of relevant employment legislations that heralded the 'modern' period of employment relations in the country. Trade unions were utilized as the appropriate vehicles to represent workers' grievances through the formal industrial relations machinery. The establishment of the current pool of skilled local labour in the PNG mining industry and the deployment of this labour to mines mainly in Australia, but also in South-East Asia and Africa, is considered the latest stage in the advancement of local labour, demonstrating an exclusive commitment to wage employment and the industrial way of life (Imbun, 2006a).

The current mining sector is characterized by both small and large-scale mining. Large-scale mines include Ok Tedi, Porgera, Misima, Lihir, Tolukuma and the Ramu Nickle and Cobalt Mine and the Kainatu Gold Mine, both in the preliminary stages of development.⁴ There are many other small and medium-sized mines as well as an on-going large-scale exploration by overseas mineral explorers in the country. A little over seven thousand people are directly employed by the greenfield mines, not including those working in mine-associated workplaces. The greenfield mines are typically run as joint ventures between international mining capital and the PNG State. Because of their significant equity ownership, however, MNMCs manage the operations of the mines. Most mines produce gold and copper ore, which find their way to markets in Asia and Europe.

The MNMCs are primarily situated in Canada, the United Kingdom and Germany. Many of their subsidiaries have headquarters in Australia, and have made massive investments in capital, labour and technology to undertake large-scale mineral exploration and extraction in the country. These projects bring state of the art technology and work practices and have been stimulated by foreign trade and investment (Hyndman; 1987).

Stakeholders of Employment Relations

Any discussion on what influences the conduct and maintenance of employment relations in a country must centre on the role of the state. The role of the PNG state in employment relations is generally weak, which is in contrast to Siddique's (1989) assertion that the state in the developing countries, because of its weak market institutions, has a dominant role in influencing employment relations policies. Although PNG, like other developing countries, has a weak class formation, weak political organization and a dualistic economic structure, these characteristics have not contributed to the development of a strong state able to dominate the various groups in society (Collier, 1979:366; Wesson, 1982). The minimal role of the PNG state in employment relations is partly due to an absence of pro-capital policies, surplus labour, an expanding economy and dire poverty which have been present in countries, particularly in Asia and Latin America, where the emergence of a strong interventionist state has occurred (Henley, 1979; Schregle, 1982 and Deyo, 1989). The existence of relatively weak trade unions has also prevented the state from mo-

nopolizing power and controlling every aspect of employment relations. The state has influenced employment relations in the mining and industrial sectors mainly through a reactive approach to the settlement of individual disputes, falling short of the authoritarian interventions characteristic of other Third World labour relations systems. The state, therefore, only regulates employment relations through the provision of employment and industrial laws. This has contributed to the emergence of authoritarian employers controlling workplaces with little regard for genuine worker issues.

Generally weak state intervention in the economic and political realm has allowed other stakeholders to influence employment relations. The management of employment relations in the greenfield mines is influenced by multinational mining capital as represented by international mine managers, international non-managerial workers, the national proletariat, and local workers.

International Managers

More than 200 companies represent international mining capital in PNG. Their current investment is worth more than \$US 10 billion in the mining and exploration of minable ores. They belong to the PNG Chamber of Mining and Petroleum (PNGCMP), a well-resourced organization, whose role is to liaison and consult with the government on matters pertaining to the industry. Several of the members are subsidiaries of large MNMCs including Canadian mining giant Placer Dome, Rio Tinto Zinc, BHP and the Australian mining company CRA. Some of the core foreign international management team is located in Port Moresby, the capital city of PNG, while a few operate from offices in Australia. These offices are operated by skeleton staff, many of whom are expatriates from the parent countries of mining companies and usually make the strategic decisions. They often are seasoned managers who have served their companies either in mines of other developing countries or in their home countries.

The senior international managers internally regulate the conduct of employment relations. They represent only 2 per cent of the workforce, which at an average greenfield mine of 2000 workers, comprises the top 40 managerial and technical jobs. As a major stakeholder with an overriding aim to make profit at all cost, international mine managers generally manage their workers

with an iron fist. The nature of mining with its massive cost of infrastructure, technological investment, high operation costs and occasional union militancy has given rise to an aggressive regulation of employment relations. The international managers, with the support of middle level national managers, have single-handedly represented their position in major industrial disputes with close backing from parent organizations and joint venture partners. They have been awarded new contracts workers in close association with relevant unions and the PNG Department of Labour and Employment (DLE) (Imbun, 2002).

In their quest for mineral exploration, MNMCs also play a decisive role in meeting local expectations apart from their own goals of mineral production. The onus is on the international managers to maintain a delicate balance between the host government and local indigenous communities, particularly customary landowners in PNG. The tensions and social complexities became apparent in the country after the collapse of the giant CRA-operated Bougainville copper mine in the late 1980s, and the BHP Billiton's Ok Tedi mine debacle in the late 1990s (Connel and Howitt, 1991; Filer; 1990). This contributed to the emergence of a more receptive group of international mine managers who have attempted to cultivate a more favourable relationship with the local indigenous communities. In other words, the mine managers have embraced the concept of corporate social responsibility (Imbun, 2006c).

International Non-managerial Workers

The international non-managerial workers (INWs) also influence employment relations in the mines.⁵ They are expatriate workers - a non-managerial group of skilled administrative and technical people hired mostly from parent countries, and other Anglophone states and are typically allied to the international managers, but do not necessarily share identical interests. INWs are often hired from abroad, enticed by a relatively generous compensation package and owing loyalty only to the foreign employer (and therefore are not subject to customary demands). They include mostly management personnel, financial accountants, engineers, geologists as well as other specialists whose skills are particularly scarce in the country. As a result of their more privileged position and their fixed work contracts, the INWs have been prevented from lobbying collectively through national work-

force activities or individually to enhance their own interests. The perks and privileges which have lured them to the harsh and isolated mine sites are the envy of the national proletariat (Imbun, 1998).

INWs typically comprise about 18 per cent of a typical mine. The number of INWs usually ranges between 300 to 450 in the construction phase and early commencement of the project with variables such as size of project and technical demands of ore extraction influencing the continuous availability of expatriate labour (see Table 1 Appendix). Usually the attrition rate is high as indigenous workers replace many INWs after acquiring the necessary training and experience when others quit after the completion of their contract, indicating a trend towards gradual localization (McGavin, Jones and Imbun, 2001). Unlike the largely unrepatriated Spanish mineworkers of colonial Mexico, the INWs are essentially birds of passage who develop few local affiliations (Brading, 1971).

The INW workforce influences employment relations at the workplace level where there is direct interaction with indigenous employees. Policies of respecting indigenous workers and their culture and an avoidance of overt racial and colonialist prejudices are the norm (Interview, Expatriate Community Relations Manager, Porgera Mine, June 2002). Referred to as 'managing diversity' in the policy manuals (Sauers, 1993:45), the MNMCs in PNG urge INWs to frame their relationship within an awareness of the individual and cultural characteristics of specific segments of the workforce. INWs are told in the induction program to abandon any stereotypes and assumptions they may have or heard about Papua New Guinean workers before they commence work on the site. The appointment of well-received expatriate supervisors and workers and the termination of unsuitable staff have unquestionably promoted harmony during face-to-face interactions and led to higher levels of productivity. This has served to modify the notions of racial superiority characteristic of the old colonial regimes (McGavin and Imbun, 1999). Although the diverse national and regional composition of the workforce begets ethnic self-consciousness, the MNMCs actively seek employee unity around issues of technical competence and productivity.

Employed in the mines is a largely instrumental capacity, the INWs have had a somewhat mixed impact on the moderniza-

tion of mining communities. On one hand, their high pay is often repatriated to their home countries, depriving local markets of potential consumer income. On the other hand, 'fly in, fly out' workers foster the process of localization through their role as a 'transmission belt' in imparting industrial skills to subsistence agriculturists and town labourers (McGavin, Jones and Imbun, 2001).

National Proletariat Workers

If the international managers and INWs constitute a 'middle class', then the indigenous workers can be said to represent a 'working class'. As in South Africa, the indigenous mining workforce is 'balkanized' into a range of ethnicities (Mikyo and Schiphorst, 1999). In this context, they are the 'national proletariat', another important stakeholder in influencing employment relations in the greenfield mines. The greenfield mines have nationally recruited a cadre of skilled and experienced workers of various clan identities who are further on the path to complete socialization into the industrial way of life than their local counterparts. This heterogeneous 'labour aristocracy' can be conveniently termed the 'national proletariat' as it is recruited from various provinces and urban centres and is the closest PNG has to an industrial working class. These non-local workers subscribe to a 'proletarian' view of their employment where wages and conditions form part of labour management negotiations. It is amongst these non-local workers that the PNG Mine Workers Union has its most active supporters (Interview, PNGMWU General Secretary, 21 April, 2003). Because of their privileged position and consciousness of collective strength, these labour aristocrats have been able to slowly promote the cause of organized labour with the mine management despite hostility to trade union activities.

Characteristically, the company culture regards workers first and foremost as members of customary local societies rather than as members of an industrial working class with their own political organizations in the form of trade unions. International mine managers tend to view the mineworkers' union as only partially replicating unions existing in their countries of origin on the grounds that PNG workers still have an overwhelming alliance with the co-existing tribal system (Interview, Porgera Mine Operations Manager, 3 July, 2002). Such attitudes have delayed the development of formal industrial relations and negotiating proce-

dures. Although adversarial attitudes have been mollified by consultative approaches to grievance and dispute handling over time, many managers still foster a distrust of unions that cannot be hidden. On one project site visit trade union officials, in Dickensian fashion, were often accompanied by dog handlers and their Alsations when meeting with management (Porgera Fieldwork visit, May 1996).

Those mines whose management styles hark back to the 'statanic mills of yore' have borne the full brunt of aggressive behaviour and tactics by unions and local workers deprived of channels for the expression of dissent. Violent work stoppages have occurred with employees physically damaging company property, reflecting a wider political and social culture where the resort to arms still appeals as a method of conflict resolution (Imbun, 2000).

Certainly, the labour aristocrats have benefited from regular cash and the 'value adding' in human resource and training terms underwritten by mining development. Nevertheless, judging by the yardstick of assimilation into 'western' norms and given increased opportunities available to expatriates, local indigenous workers still have a fair distance to go.

Local Workers

Local workers comprise a large portion of the greenfield mining workforce and therefore have the ability to shape employment relations to a significant degree. They typically number about one third of the workforce, except in the Misima mine where local workers comprise 90 per cent of the entire mine workforce (see Table 2 Appendix). As a stakeholder of employment relations, most of them are products of positive discrimination, or affirmative employment policies where workers from the indigenous communities surrounding the mine are hired more frequently. These policies are tacitly applied to local workers in compliance with initial mine agreements undertaken between three parties: the local landowning people where the mine is located, the mining company and the national government. Although there is no direct pressure on the mining companies to employ locals, they implement the policy consistently for a variety of reasons including safety, economics and compliance with mine policy. The people who benefit the most from these apparently discriminatory employment policies are those who live ad-

adjacent to and within the vicinity of the mining projects. When the greenfield mines commenced operations, many of the local workers were semi-literate and semi-skilled. Many people from Bougainville, Misim, Ok Tedi and Porgera were able to gain the employment that was generated from the projects. The quick on-the-job training schemes set up by the MNMCs have enabled this green workforce to handle any industrial jobs in the mines. The accumulation of knowledge and experience has, along the way, allowed them to share and occupy jobs with the national proletariat, thereby earning them respect and accolades (Quodling, 1991; Ali and Mamak, 1979 and Imbun, 1998).

The local workers do not necessarily share the working class assumptions of the national proletariat but have their own perceptions which are more influenced by their traditional ownership of the mining lease area and their identification with the projects as 'part owners' (Interview, Porgera General Manager, 23rd July, 2001). Local workers view the projects as an avenue for their advancement and a link to the outside world through provision of goods and services and are therefore typically supportive of MNMC control. Their relationship is unique from other workers as they usually demonstrate support of management whenever there is an industrial dispute in the mines. Local Porgeran workers refused to join the mineworkers' union because "it (union) is for the book people and it is against our mine and boss all the time (Imbun and Morris 1995: 254)". On many occasions, local workers have openly pledged their loyalty to the police and the mine. In industrial disputes, for example, local workers often provide a buffer between the union and management and on some occasions, they literally become strike-busters.⁷ These workers often display devotion and loyalty to the foreign mine management, holding them in high esteem even as the managers are often despised by the national proletariat (Interview, Porgera General Manager, 23 July, 2001).

The nature of the relationship between MNMCs and local workers at the grassroots level is crucial to providing the pattern of management of the larger workforce. Local employees and their community leaders determine the ease or difficulty of the resolution of disputes and the promotion of the overall morale of the workforce with a major impact on mine profitability, further investment and effectiveness of operations (Interviews, Lihir mine managers, July 2003).

There is not a great deal of visible evidence of material improvement in villages contiguous to the mining projects. Some mine employees have built corrugated roofed houses as a result of their earnings, but most of the workers appear to have little to show for their labours, leading to the conclusion that the impact so far on their traditional subsistence agricultural lifestyle has not been particularly positive.

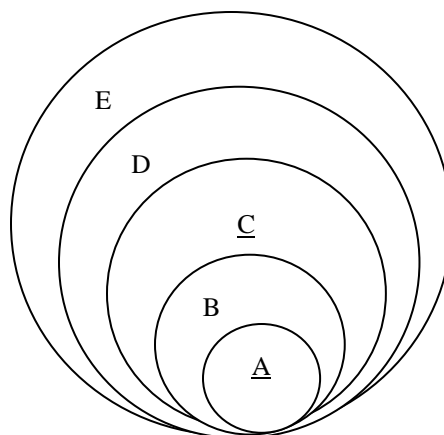
Establishing Alliances Through Absorbing Local Communities

The management of employment relations in the context of diverse groups of workers has been challenging for the greenfield mines. As stakeholders, the different parties have in their own manner and behaviour influenced employment relations in pursuance of their own goals. In the interest of mineral productivity and profitability, and often adversely influenced by both the international and local environment, the various MNMCs have facilitated conditions for alliance in their pursuit of developing and maintaining sound employment relations. For example, in the South African Durban Roodepoort Deep-managed Tolukuma gold mine, the employment relations system is one based on collaboration and cooperation through the integration of community affairs. This strategy is facilitated in the form of a mutually enforcing and symbiotic relationship between the MNMCs and the local workers in particular, and the large adjacent local community in general.⁸ The MNMCs have largely seen their relationship with local workers and the adjacent local communities as a testing ground for controlling the workforce and operating mines peacefully. In order to capture local worker interest and loyalty, management has set up a separate Community Relations Department (CRD) to directly deal with the welfare of local workers and adjacent communities. As seen in PNG, responsiveness to the aspirations of the customary landowning community has become a priority for the MNMCs (Jackson, 1991).

The manifestation of local community bias is embedded in the greenfield mines' unique employment policies, which are often implemented at the expense of other Papua New Guineans. The systematic recruitment of workers, starting with the local area (adjacent to the mine) and then moving to the provincial or regional level, has become a matter of priority. In compliance with local community pressure and government policies,

MNMCs have established policies which systematically discriminate against non-local people, giving first preference to local workers.⁹ Unskilled labour is usually recruited from the available local and district labour markets (see Figure 1).

Figure 1: Areas of Labour Market Availability for Greenfield Mine Recruitment



- Circle A* The near absolute majority of the non-skilled manual workforce comes from local labour markets. Many of the workers are customary landowners of the project and tribesmen from adjacent villages.
- Circle B* The next area of recruitment is drawn from a larger region surrounding the mine as potential workers usually have skills of which the former usually lack.
- Circle C* The provincial labour market is the third area of recruitment. Unclaimed jobs by the previous two groups go to workers within the province having the proper credentials.
- Circle D* Most of the skilled workers from PNG are found in the national labour market, as only a small number of skilled workers can be found in the first three labour markets.
- Circle E* The most administratively and technically demanding jobs are filled by people from overseas labour markets as there is a skilled labour short-

age in the country, particularly in the fields of geology, engineering and accounting.

The isolation of the site combined with the high costs of employment packages and repatriation provides an incentive to employers to recruit local labour. The recruitment policies seem to have enormous implications on the conduct of employment relations at the mines. The mine management has been able to exact loyalty from the local workers and villagers in order to prevent the occurrence of industrial activities whenever there is a threat of an industrial strike by unions (Interviews, Porgera mine manager, July 2003). There are several reported incidences of landowners assisting mine management to quash genuine industrial strikes staged by mining unions. At the Porgera mine in 2000, settlement of a dispute involved the police. The local community and the mine management reportedly colluded together to challenge the Porgera Allied and Mining Workers Union (PAMWU). Local workers tend to identify themselves more with the greenfield mines than other workers who are there merely for wage. Management systematically accommodates these perceptions and designs training and localization policies to substitute international non-managerial expatriate and national proletariat workers with local workers. Several international mine managers view the development of employment relations at the greenfield mines as being influenced by the realities of the prevailing socio-economic, political and cultural environment which have led to the formation of idiosyncratic employment relations practices (Interview, Missima Mine Community Relations manager, June 2002).

Management of Employment Relations

In the greenfield mines the management structure is organized so that the employment relations section exists independently or part of a larger human resource division. Sometimes employment relations are under the command of an international manager or superintendent who manages safety, training and community relations. About five or six officers manage this section depending on the size of operation and extent of workforce unionization. There are human resource superintendents at each operating site to provide advice and each is assisted by an employment relations officer. In the Placer Dome-run Porgera Mine,

the line employment relations department reports directly to line management. There is usually a manager at the top, immediately followed by a superintendent, senior officers and then other officers. Of all MNMCs, there is no corporate employment relations function located in Port Moresby (see Figure 2 on the next page).

The human relations superintendent, with the help of a senior employment relations officer, is usually responsible for creating and developing productive employment relations throughout the mine and addressing any problems that arise. The significance of the employment relations department of a mine is typically dictated by the degree of worker engagement in union activities. The establishment of a large employment relations section in Bougainville and Ok Tedi by the CRA and BHP management team respectively resulted out of serious industrial disputes, which occurred in the early stage of operation of both projects (Mamak and Ali, 1979; Quolding, 1991 and Hess and Gissua, 1992).

Evidence seems to indicate that the initial stage of union development in the mines has been met with management aggression and suppression. As the mining projects settle and mature the application of a formal conflict resolution machinery and human resource management techniques foster compromise and the recognition of trade unions as a 'loyal opposition,' as demonstrated in the OK Tedi mine. Before this framework for negotiation has been worked out, as in the cases of Misima, Porgera and Lihir, unions find it difficult to recruit new members and maintain a significant presence (Interview, General Secretary PNG MWU, June 2002).

Entrenchment of Paternalism in Management Operations

Although MNMCs strive to develop a collaborative employment relations system based on cooperation between different sections of the workforce, the system is generally characterized by aggressiveness, hostility and paternalism. One way or another, the employment relationship has been built on a macho or *rambo* management style which, according to Sisson, coerces workers and their unions to accept managerial prerogatives and directives (1984). The MNMCs have embraced the macho management style and blended it with a significant degree of paternalism in the PNG greenfield mines. Paternalism, for the purposes of this article, denotes the systematic facilitation of 'extra curricular'

activities consistently undertaken by the management to ensure the welfare of the workers and operation of the project and are upheld on a daily basis. An obvious example is the 'Open Door' Policy that is extensively applied in several mines, whereby workers are encouraged to air any grievances they might have to mine management. This policy was just one of the several activities which many workers interviewed observed as examples of paternalism advocated by management in the greenfield mines (see Table 2 Appendix).

Paternalism is reflected in a wide range of policies. The widely utilized 'preferential employment policy' favouring local people is partnered by the 'selective localization' policy in the workplaces which expeditiously elevates local workers into jobs previously held by INWs and the international proletariat. The INWs in particular are often cautioned through 'cultural orientation' workshops to have an acute awareness of individual and cultural aspects of the indigenous workforce and local host communities. Harsh penalties, including termination of employment, are applied to any worker for behaving contrary to the policy. Management often coordinate 'union bashing' workshops in the mines, where unions were criticized and workers discouraged from joining them.¹¹

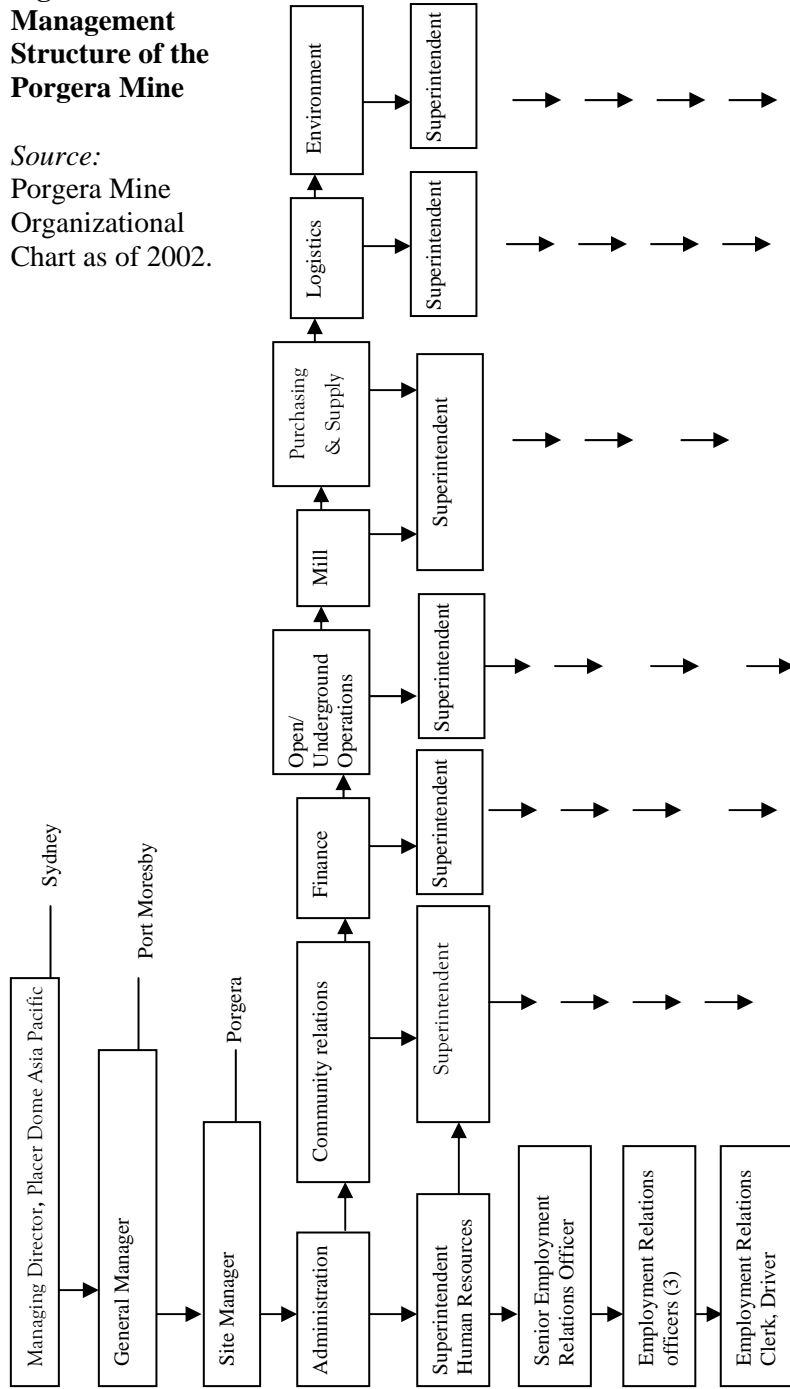
Paternalism also characterizes the development of employment relations for local indigenous workers through provision of other tangible services. International mine managers report how the MNMCs accommodate the local workers in the provision of goods and services. They exist in the provision of daily return transport to villages after work and management sympathy of local workers' grievances. MNMCs provide free lunch to workers in Porgera, Lihir, Ok Tedi, Tolukuma and Misima in order to exact maximum productivity, as most of workers have not been used to heavy industrial work.¹² It is increasingly common to stage 'pleasant days', a combination of activities such as sporting events and picnics designed to bring workers and local communities together. In order to pacify workplaces, three mines had the presence of police personnel within the vicinity of their operations. Specialist services are typically provided to the local workers to allow for smooth operation of the mining projects.

Constrained Employment Relations

Fieldwork carried out in the greenfield mines reveal that

**Figure 2:
Management
Structure of the
Porgera Mine**

Source:
Porgera Mine
Organizational
Chart as of 2002.



the MNMCs use conventionality, accommodation and flexibility strategies to manage employment relations. This has resulted in a pattern of ‘constrained’ employment relations, particularly between the management and the national proletariat. It is usually in the commencement of mine operations that the expatriate management team chooses to regulate the workforce through use of threats and punishment to ensure compliance. In a typical unitarist fashion, unions are discouraged, a paternalistic approach is adopted and employees are strictly monitored through, for instance, a layer-by-layer deployment of supervisors and foremen. Control over the workforce is at the highest level where the expatriate management of MNMCs coordinate their workforce with near precise direction, evaluation and discipline with little room for responsible autonomy through deployment of advanced technological equipment. Local workers with little experience are also given on-the-job training as part of their investment, in an attempt to use economy labour. Several union leaders at Porgera and Ok Tedi confided to the author that unexplained absenteeism, worker revolt and fights at the workplace are common in all the mines. An unexplained series of ad hoc disputes have occurred at the workplace level where, particularly at the new mining projects like Tolokuma and Lihir, those initiating conflicts have been terminated for causing ‘trouble’ (Interviews, Tolokuma and Lihir Miners, June 2002).

Worker Observations of Management Operations

Follow-up fieldwork was carried out in 2003 to confirm previous observations of tough management practices in the greenfield mines (Imbun, 1998). Workers representing each of the employment stakeholder categories were interviewed (see Table 4 Appendix). Of the interviewees, 20 were INWs, 30 were national proletariat workers and 40 were local workers. Workers were asked whether management attitudes and practices could be characterized as paternalistic, conservative or proactive. Those workers unable to classify the relations within the three categories had their response recorded as “don’t know” (See Table 3 Appendix).

Most of the observations pertained to the general convictions held by each employment stakeholder category. Among the INWs, there was an overwhelming perception (50% and above) of management paternalism. Some identified ‘weak trade unions,

lack of consultation and extensive personnel activities' as some of the reasons responsible for the consolidation of paternalistic management of mines. However, the few who thought otherwise varied between conservative and proactive management practices while several either did not have an opinion or were reluctant to disclose their observations. The national proletariat generally characterized the international mine management team as either paternalistic or conservative. Among the concerns or problems they raised, was the continued reliance on the fly in, fly out mode of mine operation and 'one sided' attention to local concerns.

From the perspective of local workers, management paternalism was not seen as prevalent as most other workers of the greenfield mines observed. Most of the local workers thought management was simply being proactive in acknowledging the prevailing local environment and responding to the challenges accordingly. One local Porgeran mine worker stated, "Placer Dome is a good company, the management understands not only us (Porgeran workers), but above all, the *entire* (with added emphasis) Porgeran community". He added further, "even our own government does not does accord this kind of treatment to us" (Interview, Local Porgeran Underground Miner, June 2002). The generally positive perceptions of the mine management were not only held by Porgeran workers (60%), but were also repeated by local workers in Ok Tedi (80%) and Lihir (60%). In the Tolukuma and Misima mines, however, only four of the 40 workers interviewed at each location thought the management was taking proactive strategies to improve employment relations within the mines. Most of the 40 local workers (40%) in Tolukuma and Misima (30%) considered the management practices to be paternalistic and conservative, respectively.¹³ The results may not necessarily reflect popular opinion, however, as many local workers in Misima (50%), Tolukuma (40%) and Porgera (20%) did not make their views known, the silence perhaps indicating more an endorsement of what the mine was doing than disagreement with the mines' management styles.

Management Attitudes to Industrial Activities

The structure and mode of employment has influenced the development of constrained employment relations within the greenfield mines. In the Porgera, Lihir and Tolukuma mines, the practice of fly in, fly out, or the regular repatriation of particularly

the national proletariat to their home villages or towns following fixed work periods, is a crucial part of the employment system.¹⁴ This practice has given rise to a transitional class of semi-proletarianized tribesmen that can be labeled a class of target-proletarians (Dansereau, 2000). This group of working class people depends upon a combination of wages and other incomes for their livelihoods. Although the perpetuation of migrant labour delays the inevitable formation of a true working class who are primarily, if not exclusively, dependent upon wage labour, there is sufficient evidence to conclude that Papua New Guinean mine workers are sensitively aware of their employment engagement with MNMCs. Low wages, lack of job security and continuous demand for on-site accommodation by the national proletariat have led to a built-up of aggressive and powerful unions (McGavin and Imbun, 1999; Imbun and Morris, 1995).

Attempts to discourage union activities by management have been met with worker hostility. In the Rio Tinto-run Lihir mine, trade union activities are discouraged and organizers have been issued with threats of termination. Alternatively, the open door policy is seen as a 'substitute' to dealing with individual work-related issues. The mostly expatriate management ensure that aggrieved workers are at least given a sympathetic ear, even if resolving the issue in a manner accepted by all is beyond the mine's capacity. Critics of this policy accuse the management of trivializing genuine industrial issues by making them look like no more than personal problems (Interview, Porgera Trade Union Official, June 2002). This allegation has some credibility as most of the problems individual workers take up to their management are of an industrial nature ranging from wage issues to working conditions to housing problems.

To the MNMCs, union organizations pose a threat as well as an opportunity. In 1984, the Ok Tedi Mine Staff Association was organized to represent the interests of senior clerical and technical employees and supervisors. The formation of this group was bitterly resented by the Ok Tedi Mining Workers Union, the dominant manual workers union, which perceived it as a deliberate attempt on the part of the companies to separate the union from the most influential segment of the working class. In fact, most of the higher paying jobs created in the late 1980s were allocated to the PNG Staff Association rather than the union. The MNMCs (BHP in Ok Tedi and CRA in Bougainville) favoured

the formation of the association on the grounds that staff and supervisory employees not belong to the rank and file union. Company spokesmen candidly expressed satisfaction with the presumed political effects of social differentiation. The MNMCs hoped that an organization such as the PNG Staff Association would facilitate the growth of a strong and responsible PNG middle class and a stable and level-headed body of PNG opinion (Interview, Porgera Mine Manager, June 2002).

Despite the suppression the mining workers unions typically receive, they are generally some of the most active employment relations organizations in the country. Because of the sheer strength of mining in the economy, combined with nationalistic objectives, the unions defend their industrial rights on employment relations in the workplace and in the country in general. Their work-related demands have also had an effect on the broader political and developmental concerns of the government and local communities, where mines are located (see Table 4 Appendix). Evidence from previous research undertaken on the industry illustrates the violent nature of some of the industrial disputes that have occurred at the mines. The unions have displayed a propensity to partake in violent strikes if negotiations do not settle their demands from the onset. The national proletariat typically view an emotionally-charged and violent strike as preferable because even if an orderly strike is maintained (with picket lines), the strikes might not withstand the full brunt of the striking period as they have insufficient financial capacity to satisfy everyone for the length of the strike (Hess and Gissua, 1992; Imbun and Morris, 1995 and Imbun, 2002).

Most of the issues the skilled national proletariat address to their unions arise out of management's inability to deal with workers grievances that have gradually built up over time. Ten workers were interviewed in each of the greenfield mines. From the industrial issues they were aware of during the last 5 years, they were told to give a value of 5 to the most common issue, 4 to other common issues, 3 to less common ones, 2 to lesser common ones and 1 to the least common. The evidence demonstrates that some of the issues are relatively similar in every mine ranging from wages, accommodation, training and localization, and safety to recognition of trade union activities, especially in new greenfield mines. In the Porgera and Lihir mines, the issue of wages acutely affects worker and trade union disputes and nego-

tiations followed by training and localization. Work intensification as an issue is evident in Porgera while management 'bullying' is labeled as a 'serious' issue in three greenfield mines. Although the issue of wages is common across all mine workforces, the other issues reflect the varying circumstances of each greenfield mine.

Although trade union activities are synonymous with the national proletariat, occasionally unions advocate for issues that represent the interest of local workers. Often industrial issues have become entwined with the broad political and development aspirations of the local communities in the vicinity of the mining areas where most of the local workers are located. Companies make royalty payments to local communities for use of their land for mining operations. They are also made to permanent mining towns to operator in 2004, called for a complete ban on the commuter system of mining operations, an issue which is also acutely felt by workers at Lihir. Mine management has labeled the issues as 'non-industrial' in nature and therefore view the problem as a political issue to be dealt with by the provinces. As a result of PMAWU's support and the political pressure exerted by the local government responsible for Porgera, the Piam mining township is expanding as more residential houses are currently being built by the mine to house some of its workforce.

Challenges in Employment Relations

In spite of MNMC endeavours to establish a viable employment relations system in the greenfield mines, there have been many challenges. MNMCs do not seriously acknowledge the challenges facing a Papua New Guinean mine workforce beset by huge divisions between privileged expatriates and subordinated national workers. The wage system is implemented through a complicated and protracted set of management directives and the government's 'ability-to-pay' provisions. Inevitably, the growing number of technically skilled and managerial employees coalesced to form a relatively privileged interest group apart from the main manual workforce. The presence of national staff associations in the mines is bitterly resented by the large unions comprising manual workers. Manual workers' unions often perceive the MNMCs as deliberately encouraging the white-collar unions to separate the union from the most influential segments of the mining workforce. Well-educated national proletariats hold most

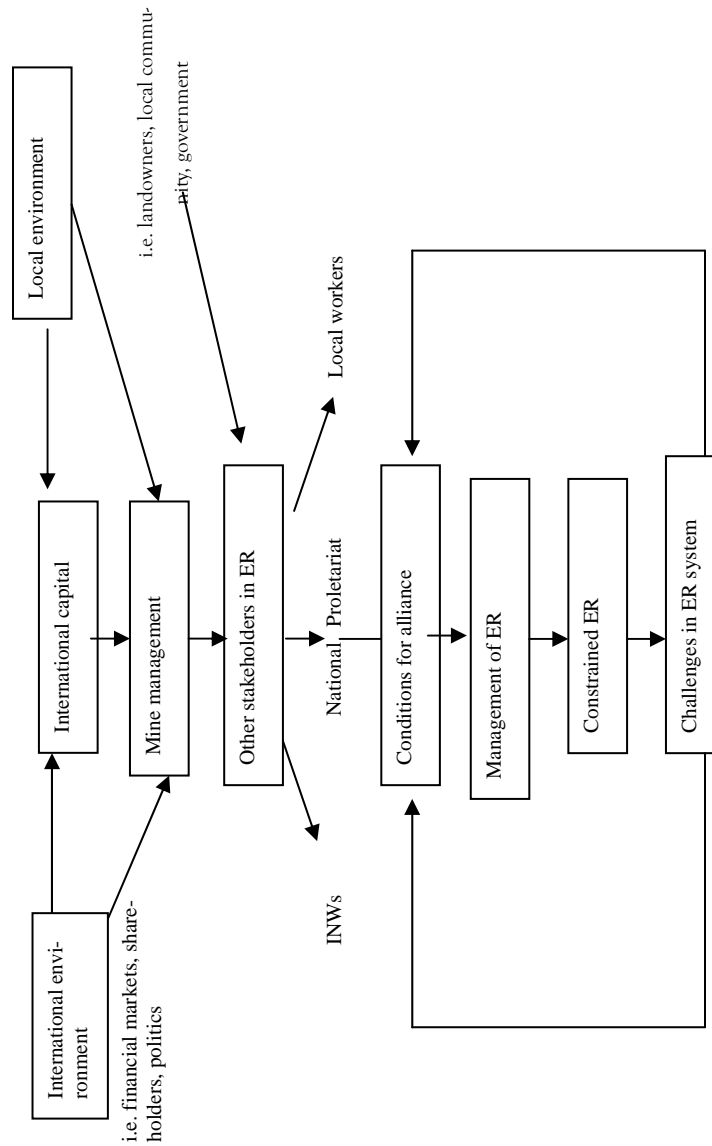
of the senior jobs as MNMCs think the existence of such an exclusive group favours sound management. The result has been the creation of disgruntled staff unions who are envious of the expatriate terms and conditions of work and are becoming staunch critics of the dual wage and training and localization policies held by the different MNMCs.

Another challenge for employment relations in the greenfield mines is the management of the unionized and non-unionized segment of the workforce. Almost half of the national proletariat in Ok Tedi, Porgera and Misima is organized into trade unions. The other half is divided between mainly white-collar workers and local workers who are not interested in collective action to improve their working conditions. Although the national proletariat is conscious of its place in the sphere of employment relations, it is inhibited by other issues such as the type of mine operation (fly in, fly out), aggressive management, and above all, a reluctant and passive non-unionized segment of the workforce. This has created friction between the unionized and non-unionized workforce where differing opinion, politics and management strategies further exacerbate the divide. Although several mining unions have made progress in unionizing the rest of the workforce, some of the non-unionized workers have steadfastly resisted, in some cases with assistance from the management. The PMAWU, for instance, could not make recruitment drives into the white-collar workforce because the mine management had 'promised' them a wage raise if they remained non-unionized (Interview, PMAWU General Secretary, July 2003). Therefore, what tends to occur is the establishment of a transitional class of temporary and quasi-proletarianized workers who are sometimes at the mercy of stubborn and unrepentant management.

The refusal of MNMCs to adequately acknowledge or respond to challenges in the workforce has only reinforced the hard-nose style of management of employment relations. The management is perceived to be imposing policies on the workers concerning production, safety, and work intensity, and "do not care at all for the workers, let alone, profit" (Interview, PMAWU, July 2003). The greenfield mines consolidate and implement strict control in overseeing workers and suppressing labour unions in an effort to enhance production. The progress management has made in trying to ensure an orderly and effective work-

place is blurred by the constraints and therefore inherent challenges that remain which cause managers to revert to more aggressive control of the workforce (see Figure 3).

Figure 3: Model of Employment Relations (ER) in Greenfield Mines



Conclusion

Generally conservative and 'absolutist' management has attempted to reconcile the competitive challenges of international capital with the diverse demands of transitory tribal workforces. Based on industrial anthropological methods and fieldwork at the greenfield mine sites, the article bases its premise on the capital expediency of extracting mineral ores at the expense of productive and humane labour relations in the PNG greenfield mines. It explores the endeavours of the MNMCs to develop a strategic human resource approach to regulating the workforce. The proactive, often challenging, strategy of meeting corporate goals and regulating a diverse mining workforce has been consciously manipulated by an interplay of a combination of employment relations and human resources management practices with a systematic accommodation of particularly local area interest. In an effort to appease the local communities in providing employment opportunities and complying with government directives, the MNMCs have successfully established a preferential employment policy aimed at giving priority to local people followed by the national proletariat and INWs only after exhausting the labour market. The use of an affirmative employment policy has allowed mining to minimize social conflict and recruit less expensive labour.

Above everything else, the management and order of employment relations seem to accommodate inherent concerns and issues that are conventional and also unique to the PNG situation, therefore demonstrating the complexity and dynamics of operating green field mines in PNG. The challenges in employment relations caused by the inevitable accommodation of the concerns and issues have tremendous implications for MNMCs. The presence of a multicultural and diversified mining workforce and the need for an effective management of cultural diversity in the context of employment relations, makes PNG mines one of the most challenging workplaces in the world. However, there is more to be done on the management of employment relations in terms of transforming arrogant and paternalistic employment relations attitudes with ones of tolerance and flexibility. Such a change of heart would come about when there are a reasonable number of culturally conscious line managers and properly trained employment relations officers that practice sound employment relations.

Appendix

Table 1: Composition of greenfield mine employment stakeholders in 2002⁶

<i>Employment stakeholder category</i>	<i>Mines: Ok Tedi</i>	<i>Porgera</i>	<i>Misima</i>	<i>Tolukuma</i>	<i>Lihir</i>
International managers	15	13	12	8	16
INWs	350	400	260	200	300
National proletariat	600	700	250	480	870
Local workers	780	830	600	523	546
Total	1745	1943	1122	1211	1732

Source: Greenfield mine employment records, 2002.

⁶ Table 1 provides a categorization of the stakeholders of the five mines. Although it mixes occupational stratas with ethnic composition, the aim is to show the numerical make-up of the total mine workforce relative to the stakeholder category. The non-managerial expatriate numbers vary considerably more than the other two stakeholders because, after mines settle down, specific projects are accomplished and localization targets are achieved through promotion of local workers in particular. The international managers are represented by long-term career personnel from predominantly large MNMCs and they occupy nearly all the top managerial positions in the five mines. In 2002, total employment was recorded at 7757 for the five greenfield mines.

Table 2: Evidence of Paternalistic Activities Undertaken by Greenfield Mine Management¹⁰

<i>Main paternalistic activities</i>	<i>Mines</i>				
	<i>Ok Tedi</i>	<i>Porgera</i>	<i>Misima</i>	<i>Tolukuma</i>	<i>Lihir</i>
Preferential employment policy	Yes	Yes	Yes	Yes	Yes
Selective localization	Yes	Yes	Yes	Yes	Yes
Open door policy	Yes	Yes	Yes	Yes	Yes
Expatriate cultural orientation	Yes	Yes	Yes	Yes	Yes
Union 'bashing' workshops	Yes	Yes	No	No	Yes
Community engagement	Yes	Yes	Yes	Yes	Yes
Engagement of police	Yes	Yes	No	No	Yes
Meals on site	Yes	Yes	Yes	Yes	Yes
Transport	Yes	Yes	Yes	Yes	Yes
Pleasant days	Yes	Yes	No	No	Yes

¹⁰ In the follow-up fieldwork in 2003, the author randomly interviewed several workers of the national proletariat, as well as some local workers and several international non-managerial expatriates at 'rest spots' outside the mine precincts. Workers were queried about the occurrence of policies and activities undertaken by the mines labeled as paternalistic. The list arose out of reading mine newsletters and periodicals and also out of the author's own extensive observations from fieldwork undertaken in the mines. There were limited exceptions with unavailability of 'union bashing' workshops, engagement of police and 'pleasant days' in Tolukuma and Misima. The two mines were often seen as 'stable', unlike others where aggressive trade unions and restless local communities surround them.

Table 3: Management styles as observed by workers

<i>Mines</i>	<i>Employment stakeholder category</i>	<i>Management style observations (%)</i>			
		<i>Paternalistic</i>	<i>Conservative</i>	<i>Proactive</i>	<i>Don't know</i>
Ok Tedi	INWs	50	20	10	20
	National proletariat	30	60		10
	Local workers	10		80	10
Porgera	INWs	70		20	10
	National proletariat	40	50	10	
	Local workers	20		60	20
Misima	INWs	70	10	20	
	National proletariat	50	50		
	Local workers	10	30	10	50
Tolukuma	INWs	60	10	10	30
	National proletariat	50	50		
	Local workers	40	10	10	40
Lihir	INWs	50	20	10	20
	National proletariat	40	60		
	Local workers	10	20	60	10

Table 4: Employment Relations Issues in the Greenfield Mines in 2003

<i>Employment relations issues</i>	<i>Rate of frequency of disputes at the mines</i>				
	<i>Ok Tedi</i>	<i>Porgera</i>	<i>Misima</i>	<i>Tolukuma</i>	<i>Lihir</i>
Wages	5	5	5	5	5
Training and localization	4	5	2	3	5
OHS ¹⁵	3	4	2	2	3
Work schedule	3	3	1	2	4
Accommodation	2	4	-	2	3
Fly in, fly out	2	5	-	3	5
Union recognition	-	-	-	5	5
Management 'bullying'	4	5	3	3	4

Source: Union Records and Worker Interviews Undertaken in the Five Greenfield Mines, 2003.

Endnotes

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² Greenfield also conjures up four other major variables: massive capital investment, new workforces, new management philosophy and work organization (Marian, 2001:61), which also characterize the PNG mines. These variables are discussed in tandem when examining the management of employment relations in the greenfield mines.

³ A formal request to undertake a survey of workers and management on employment relations in the greenfield mines was deemed inappropriate and therefore was not sanctioned by the PNG Chamber of Mines and Petroleum (PNGCMP), the main liaising body for the industry. Although reasons varied, the researcher was told of “recent unpleasant experiences” different mines had with previous researchers who “misrepresented” the mines (Interview, Porgera Mine Manager, June 23, 2001). Management claimed that social impact researchers and environmentalists had tarnished the ‘good’ name of the mine as a result of negative publicity in overseas articles. Despite the organization’s reluctance to approve the study, sufficient valuable data was collected through in-dept interviews and semi-structured questions from different strata of the mine workforce and management personnel.

⁴ The huge Conzinc Riotinto Australia (CRA) ran the Bougainville copper mine, which has remained unoperational since 1989 after a civil rebellion occurred over redistribution of bene-

fits from the mine which, at the height of its operation, contributed to one third of the country's GDP.

⁵ They are mostly third country nationals coming from countries other than the parent country mine management team or from in the host country (Morgan, 1986) and skilled non-managerial administrative and technical personnel, who are hired mostly from Australia and New Zealand, but also from Canada and the US.

⁶ See Table 1

⁷ There have been at least four industrial disputes in the greenfield mines between 1999 and 2003 where local communities assisted the mines in returning to normalcy. In 1999, Porgeran villagers accused the union of 'causing trouble' with 'our' mine and vowed to help wherever possible to bring the mine into full production. Some of them assisted the management by taking on security jobs to safeguard the operations while former local Porgeran workers returned to take the place of striking national proletariat workers. In Lihir in 2001, a section of the workforce was stood down for creating an industrial dispute and some local workers were hired in the heavy truck hauling section.

⁸ As one senior expatriate community relations manager of the Tolukuma mine boasted, 'we have more time for local workers, landowners and community as they are just as strategic partners as rest of the workforce, government, and shareholders (Interview, Tolukuma mine community relations manager, July 2003).

⁹ They have been hired wherever possible to maximize the benefits of the mine for those whose lives and culture is disrupted by the mining activity. The central government has acknowledged the concerns of the local people and has not hindered such recruitment and employment policies (PNG Government Mining officers, Interviews, July 2002)

¹⁰ See Table 2.

¹¹ Such workshops were initiated during the early stages of mine operation and carried out during union-organized industrial activities. According to one manager "the purpose of the workshop is to educate the evils of collective labour activity which only disrupts productive mine operations" (Interview, Porgera Mine Manager, July 2003).

¹² At the Placer Dome-run Porgera and Rio Tinto-run Lihir mines, in the early construction phase of the mine, a lot of locals found

great difficulty in keeping pace. Some of them sneaked off early when their meager diet could not sustain them for the long hours (Interview, Mine Foremen, July 2003), thereby necessitating the provision of free lunches at some mine sites. Therefore, to the international mine managers, these paternalistic activities are necessary requirements to assist the local workers to get them used to the 'rhythm' of unfamiliar heavy industrial work (Interview, Porgeran Trade Unionist, June 2002).

¹³ The Tolukuma and Misima mines appeared reluctant to assist community projects within the vicinity of their operations, which was later revealed to have had a probable influence on some of the responses.

¹⁴ Only Ok Tedi has a permanent mining township with fully amenities while the Porgera Mine has a semi-mining town arrangement that allows one half of the workforce, including expatriates, to use fly in, fly out to their domicile. Lihir, Misima and Tolukuma rely on the fly in, fly out mode of mine operation.

¹⁵ Occupational Health and Safety issues



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