

13

Measuring Mobilities and Inequalities in Papua New Guinea's Mining Workforce

Colin Filer

Introduction

Just before Christmas 2011, I got a call from a contact in the Australian aid agency to ask if I would be able to organise a 'country study' of Papua New Guinea (PNG) for the World Bank's forthcoming World Development Report on 'Jobs'. The study would have to be initiated by the end of January 2012, and a summary report of our preliminary findings would have to be delivered by June of that year. Furthermore, the study would have to involve some kind of collaboration with counterparts in PNG and should ideally involve the collection of new information about jobs in that country.

I cannot say that our study had much impact on the contents of the World Development Report itself (World Bank, 2012) because our summary report was only five pages long and the World Bank team had already decided what they were going to say about each of the countries that featured in it. But the team leaders had already promised to produce a 'companion volume' in which the authors of seven country studies, including ours, would have the opportunity to tell their stories at greater length. And so it came to pass (Betcherman & Rama, 2016).

Our own contribution to that volume (Filer et al., 2016) was constrained by the questions that the World Bank was attempting to answer. But the dataset that our team assembled can be used to answer some other questions as well. The World Bank team was trying to figure out what sort of jobs were ‘good for development’ and what national governments could or should do to create more of them. In this chapter, I focus on the question of how the jobs occupied by those who work in PNG’s resource sector or mining industry are implicated in local, national and global forms of social inequality and social mobility.

Much has been written about the interactions between mining or petroleum companies and the landowners or local communities affected by their operations in PNG. A lot less has been written about the Papua New Guineans employed in the extractive industry sector, some of whom have been recruited because they belong to project-affected communities, while others have been recruited from further afield. There are good reasons to believe that the extractive sector workforce is more mobile, in both a geographical and social sense, than any other sectoral workforce in PNG, and elements of this workforce may even be considered as a sort of ‘labour aristocracy’ within the wage-earning population. This chapter considers the relationship between the social and geographical mobility of these workers, the inequalities within and beyond their ranks, and the extent to which they have become detached from the moral economy that binds other Papua New Guineans to networks of kinship and affinity within the so-called ‘wantok system’.

Alternatives to Conventional Wisdom

Our decision to conduct a survey of extractive industry workers could be read as a challenge to the conventional wisdom, endorsed by the World Bank (2012, p. 203), which says that jobs in this sector are *not* ‘good for development’ because of the so-called ‘Dutch Disease’ (Filer et al., 2016, p. 103). According to this line of argument, a dominant or booming resource sector tends to depress the level of economic activity in other sectors of a national economy, so each new job created in this sector is likely to come at the expense of several jobs elsewhere. Instead of attempting to test this hypothesis against non-existent labour market statistics, we tried a rather different approach.

First, we wanted to examine the common assumption that workers in this sector must be socially isolated from the rest of the population because major resource projects constitute 'enclaves' that are isolated from the rest of the national economy. Second, we wanted to find out if jobs in this sector had some positive social qualities that might be shared, to a greater or lesser degree, with jobs in other sectors. One example of this could be the level of discipline imposed on the workforce through the routines of 'health and safety' that are familiar to anyone who has visited the site of a major resource project.

A third consideration was flagged by industry representatives at our inception workshop, and this turned out to be the most important one when we came to the analysis of our findings. They complained that their companies had gone to considerable expense to train Papua New Guinean workers to occupy some of the more specialised jobs in the sector, only to find that some of their money had been wasted on workers who promptly sold their new skills to employers in other countries where the global resource boom had created as many new job opportunities as it had in PNG. Naturally, they were inclined to think that this kind of 'brain drain' constituted a loss to PNG, as well as to their own companies, even though some economists have argued that the emigration of highly skilled workers from developing countries can sometimes have a positive impact on 'human capital formation' in their country of origin (Beine, Docquier & Rapoport, 2011; Bollard et al., 2011; Gibson & McKenzie, 2011; Packard & Nguyen, 2014).

In this case, we already knew how hard it was for a Papua New Guinean to get any kind of job in Australia, let alone a well-paid job in the resource sector, so there would be an extra bonus if we could demonstrate the existence of what the World Bank calls a 'positive spillover'. What might that consist of? The best example we could find during the course of our own study was one that even appealed to our friends in the Bank. This was the case of a man who ended up in a box in the published version of our country study, where he was described as 'a high-flying migrant worker, generating positive spillovers for his country':

Peter (not his real name) is a highly qualified petroleum engineer. He was among the last cohort of Papua New Guinean students to undertake the final two years of secondary education at a boarding school in Australia under a scheme supported by the Australian government's aid program. While still at school he watched news coverage of the 1991 Gulf War, and when told that it was basically

a war about oil, he decided that he would try to make a career out of understanding this vital substance. At that time, it was not possible to get an undergraduate degree in petroleum engineering at any Australian university, let alone a PNG university, so he enrolled for a degree in medicine at the University of PNG. After completing his science foundation year, he was lucky enough to win a scholarship to an American university to study his preferred subject. Having obtained a postgraduate certificate from a Japanese institution, he worked in PNG's Department of Petroleum and Energy for a while and then completed his higher education with a Master's degree from a Scottish university. He got a job in the Australian gas industry, and on that basis secured permanent residence in Australia. He now lives in Sydney with his Papua New Guinean wife and six children, but has recently taken a job back in PNG on a fly-in-fly-out basis, with twenty-eight days working on site alternating with twenty-eight days of field break. During his field breaks, Peter normally spends a week doing development work in his home village in one of PNG's highland provinces. His main project for the past year has been to plant hundreds of trees to make up for a serious shortage of timber suitable for building houses. His next project is to build a guesthouse and other facilities that will attract tourists to the area. (Filer et al., 2016, p. 124)

I would not have been able to write this little story if I had not had a chance encounter with Peter himself and realised that he had been one of the workers included in our survey. We never found out what his wife thought about his activities, since she was not one of our respondents, but we did think of a way that the emigration of highly skilled men from PNG's resource sector, even if only temporary, might be good for the women employed in the same sector, and hence for the cause of gender equality. For we began to suspect, during the course of our survey, that the companies were beginning to react to the loss of these male employees by seeking to employ more women as their substitutes on the grounds that women would be less likely to follow the same path out of the country (Filer et al., 2016, p. 125).

Our own dataset does not supply me with a case in point to match our 'bloke in the box'. But here is one whose real name is Hillary in what appears to be a press release issued to one of PNG's national newspapers:

Hillary Turnamur from Toma in East New Britain is the first female in the country to be awarded a certificate of competency as mine manager works. This is according to records of the

Mineral Resources Authority (MRA). Turnamur is a manager at Ok Tedi Mining Ltd (OTML), Kiunga operations. She received notice of the award from the MRA after meeting the experience requirements and successfully completing an oral and written examination. OTML managing-director and chief executive officer Peter Graham said: “We are particularly proud of Hillary’s achievement. She is a role model for young women in Papua New Guinea, demonstrating that women can successfully develop rewarding careers in mining, including into senior operating roles.” Two years ago, the miner established the Ok Tedi Women’s Network (OWN) for female employees to address safety and security concerns, identify development and career pathways and barriers to entry and progression, and to encourage mentoring and training for women. Graham added: “In 2019, 14 of the 27 trainees selected for our two-year graduate development programme and our apprentice programme are women. We are also reaching out to schools to encourage young girls to consider science, technology, engineering and maths subjects, reviewing relevant employment policies and sharpening our recruitment messaging. Women are currently underrepresented in Ok Tedi’s workforce and while it will take time, we plan to change that.” (The National, 2019)

The question, then, is how to stitch such anecdotes or narratives into a statistical profile of the extractive industry workforce.

Four Fields of Inequality

From the existing literature on PNG’s extractive industry sector we can discern four different ‘fields of inequality’ between the people employed in it. The combination of these four fields creates a distinctive social and economic landscape within which the workers in question occupy particular positions at any one time, and also move between these various positions during the course of their careers.

Zones of Entitlement

The PNG government has long pursued what is commonly called the ‘preferred area policy’, which effectively creates a set of concentric rings or zones of entitlement to a number of ‘benefit streams’ derived from each major resource project. The first zone is occupied by the customary owners of the land covered by development licences, the second by ‘project area

people' or communities directly impacted by the project, the third by the people or government of the host province, and the fourth by the population or government of the nation as a whole (Filer, 2005). Direct or indirect employment on the project constitutes one of the income streams that flow through these zones of entitlement, along with compensation payments, royalties, business contracts and so forth. Jobs are generally the most valuable source of such incomes (Finlayson, 2002).

The spatial extent of these zones of entitlement, and the size of the population contained within each zone, varies a good deal from one project to another. A survey conducted by the PNG Chamber of Mines and Petroleum in 2010 found that 62 per cent of the Papua New Guineans employed directly by the operators of the Porgera mine had been recruited from within the first two zones of entitlement, while only 37 per cent of those employed directly by the operators of the Lihir mine had been recruited from the first three zones of entitlement. In the case of the Ok Tedi mine, 33 per cent had apparently been recruited from the first two zones of entitlement, but these zones have included two whole districts in two separate provinces ever since the original development agreements were formulated. In 2011, these two districts had a combined population of roughly 112,000, while the number of Papua New Guineans employed by OTML was just over 2,000. For most mining projects, including Lihir and Porgera, the inner two zones do not extend beyond the boundaries of a single local-level government (LLG) area, but these areas can also vary in the size of their population. The Porgera LLG area had more than 45,000 residents in 2011, whereas the Lihir LLG area had less than 26,000. The smaller the size of the national workforce employed on any major project, the easier it is for the operators to fill its ranks with local recruits. At the peak of its operation in the late 1990s, 90 per cent of the 714 national workers employed by the operators of the Misima mine were recruited from the first two zones of entitlement (Finlayson, 2002).

Relations of Production

Benedict Imbun and various colleagues have argued that this distinction between zones of entitlement under the preferred area policy has given rise to a specific form of industrial relations in which (generally expatriate) managers are able to manipulate divisions within the national workforce to their own advantage. On the basis of interviews conducted with members of the national workforce at a number of mine sites since

the 1990s, Imbun (2006a) concluded that workers recruited from the first two zones of entitlement can reasonably be described as a 'tribal workforce'. This is because they still primarily think of themselves as customary landowners and retain some kind of role in the local subsistence economy, whereas those recruited from further afield constitute a sort of 'labour aristocracy' or 'national proletariat' who are 'further on the path to complete socialization into the industrial way of life than their local counterparts' (Imbun, 2006b, p. 122). Imbun thinks that this division is reflected in the reluctance of the locally recruited 'tribal miners' to join a trade union, and their inclination to take the side of management in the event of an industrial dispute, because they think their managers are 'like their typically traditional but benevolent village bigman or chief' (Imbun, 2006a, p. 329). This line of argument conjures up the image of a doubly asymmetrical relationship in which expatriate managers regard the 'tribal miners' or their leaders as their clients, whereas local community members or their leaders regard the mining company as a sort of corporate tenant (see Bainton, this volume).

If these divergent perceptions serve to enhance the self-esteem of local 'big shots' (Martin, 2013), they provide no comfort at all to members of the 'national proletariat', who are excluded from any role in the politics of the mine-affected area, and who suffer the double indignity of being paid less than half the wages or salaries paid to expatriate workers or managers with the same formal qualifications (Imbun & Morris, 2001). That is why Imbun (2006b, p. 122) reserves the term 'middle class' for the expatriate section of the workforce, including those in the non-managerial stratum, whose members reap the benefits of the so-called 'dual salary system'. This also helps to explain why some members of Imbun's national 'labour aristocracy' have jumped at the chance of securing jobs in other countries where there is no such discrimination.

Projects in Motion

The exodus of disgruntled labour aristocrats is only one of many forms of physical and social movement that take place around major resource projects during the different phases of the project cycle. The construction workforce is generally much larger than the operational workforce, only a small portion of it can normally be recruited from the first two zones of entitlement, but the rest of its members disappear when the building work is done. At that juncture, the occupants of the first zone of entitlement, the

‘true landowners’, become entitled to a stream of royalties that replaces or supplements the stream of compensation payments that they would have received during the construction phase. This makes it less likely that the recipients of such benefits would want to dilute their status as ‘landlords’ by exercising their entitlement to low-skilled and low-paid jobs within the project workforce. However, if it is old men who get to hoard these benefits, a younger generation of ‘landowners’ may not be so reluctant (Filer, 1990).

In a paper based on their own assessment of the likely social impact of the Misima mining project, Rolf Gerritsen and Martha Macintyre (1991) discussed sequential changes in the distribution of jobs and other benefits between members of a mine-affected community through the different phases of the project cycle—from exploration through to closure. They argued that these changes are the predictable results of a form of ‘capital logic’ that governs the investment decisions of the mining company, including decisions about when and how they choose to invest in the formation of a local pool of ‘human capital’. However, their analysis did not consider the way in which variations in the scale or duration of a resource project might affect the outcomes of these decisions.

Once operational, mining projects that are bigger than the Misima project tend to act as magnets for people often described as ‘opportunists’. These are people who have not been formally recruited by the operating company from the outer zones of entitlement, but who still seek to take up residence in one of the two inner zones. In doing so, they make claims of kinship or affinity with the local landowners, or may even be recruited by the landowners themselves, or at least by the ‘big shots’ among them, as their own clients or employees (Bainton, 2017; Bainton & Banks, 2018). In this way, the spatial hierarchy entailed in the relative distance of a landowner’s land from the point of production is replaced or supplemented by a social hierarchy in which patron–client relationships emanate outwards from the mine manager’s office. However, this whole edifice is liable to collapse at the moment of mine closure. When the mine manager’s office is also closed, the royalty and compensation payments cease to flow to the local landlords, and locally recruited workers can only hope that their preferential training has qualified them to become members of the labour aristocracy and find a job on another resource project if they want to remain in the formal sector workforce. At that point, the relative scale and duration of the project, and the relative complexity of the social relations that have come to surround it, no longer matter so much.

Gendered Exclusions

Martha Macintyre (2011a, 2011b) has provided us with a number of reasons why we should not expect companies in PNG's resource sector to make a positive contribution to the cause of gender equality. The first is that Papua New Guinean men get seriously jealous at the thought of their wives working alongside other men to whom they are not related. This is not an issue restricted to the resource sector, and may well explain a good deal of the domestic violence reported from urban households in PNG (Rosi & Zimmer-Tamakoshi, 1993; Toft, 1986). However, the willingness of mining company managers to tackle this issue may be diluted by the peculiar features of their relationship with local community 'big shots' who are almost invariably men.

Formal employment in the resource sector has special characteristics that are also likely to exclude women from the workforce. One is the arduous pattern of shift work for some sections of the workforce, which makes the 'double shift' more problematic for women from the inner zones of entitlement, who are expected to maintain their customary roles in the subsistence economy, as well as in child care, once they are married. If the companies provided decent childcare facilities, this might at least signal a desire to address this problem, but Macintyre has reported a purely token effort at the Lihir project, and there is no evidence that other projects have done any better.

Women from the outer zones of entitlement are subject to a separate, but related, form of disadvantage because of the specific form of circular migration entailed in a practice now common in the resource sector. Workers travel from their normal place of residence to their place of work at intervals of more than a week but less than a month, work for several days at a stretch while sleeping in dormitories, and then travel home again for 'field breaks' that also last for several days. There is no way that companies would provide travel and accommodation for the children of women engaged on this basis, so it is hard to imagine how mothers in this situation could possibly manage their domestic responsibilities.

Survey Design and Implementation

Our initial plan was to conduct a survey of employers in PNG's resource sector as well as a survey of individuals currently or formerly employed in that sector. However, we soon abandoned the first of these surveys since it was hard enough to get the employers to collaborate in the survey of their own employees, let alone respond to a separate set of questions about their employment practices. In order to get access to their employees, we first made a list of the companies that were members of the PNG Chamber of Mines and Petroleum, and of the government agencies involved in the regulation of the resource sector, and made a rough estimate of their relative size. Our aim was to interview a random sample of 20 per cent of the people employed by small organisations (with fewer than 50 employees), 10 per cent of those employed by medium-sized organisations (with 50–500 employees) and 5 per cent of those employed by large organisations (with more than 500 employees).

For those people who had formerly been employed in the PNG resource sector, but were now employed elsewhere, we adopted a three-pronged strategy. First, we asked the PNG University of Technology and the University of PNG if they could supply us with contact details for their graduates in the fields of mining engineering and geology. Only the former was able to do so. Second, we tried to locate former employees of Bougainville Copper Ltd and Misima Mines Ltd, whose operations had closed in 1989 and 2004, respectively. The companies were unable to provide us with the relevant contact details, so we had to resort to networks of personal contacts. This kind of 'snowballing' technique also had to be applied to the discovery of Papua New Guineans now working in the resource sector outside of PNG, since the companies still operating in PNG had no record of where these people had gone.

As a result of these efforts, our team managed to conduct interviews with a total of 285 individuals between February and April 2012. These were divided into eight categories by reference to the nature of their current employers (see Table 1). Four of these (categories 4, 6, 7 and 8) were outside the resource sector, and the 45 workers in these categories do not appear to constitute a sub-sample that has any particular coherence, so I have left them out of the dataset under consideration in this chapter. That leaves us with a sample comprising 240 workers who were currently employed in the resource sector, including 15 from the MRA, which is the

national government agency that regulates the mining industry (but not the oil and gas industry), and one individual who performed the same function for the Autonomous Bougainville Government.

Table 1: Individual survey respondents by type of current employer

Type of Employer		Respondents
(1)	Mainstream resource (mining or petroleum) company	186
(2)	Landowner company contracted to mainstream company	16
(3)	Other private company contracted to mainstream company	22
(4)	Other private company not in resource sector	14
(5)	Mining industry regulators (public servants)	16
(6)	Other government department/agency/company	27
(7)	Educational or training institution	1
(8)	Other type of organisation	3

Source: Interview data.

The MRA was one of only three organisations with more than 50 employees that were willing and able to provide us with access to 5 or 10 per cent of them for the purpose of this study, though none of these could reasonably be described as a random sample of their total workforce. The others were OTML and Morobe Mining Joint Venture (which was responsible for the Hidden Valley mining operation). As a result, we ended up with 55 workers from the Ok Tedi mine site and 67 from the Hidden Valley mine site in our sample. Leaving aside the 16 public servants, the rest of our sample consists of a very mixed bunch of people employed on different resource projects, including 24 who were formerly employed on the Misima mining project and had since found work with other resource projects in PNG.

It is difficult to distinguish a group of 'preferred area' workers from the rest of our sample because I could not think of a survey question that would serve this purpose while making sense to all our respondents. The best approximation is the group of 45 workers who were born in the province or provinces that constituted the third zone of entitlement for the project on which they were employed and who had at least one parent born in the same province. This group mainly comprises people born in Western Province or West Sepik Province who were employed on the Ok Tedi project and people born in Morobe Province who were employed on the Hidden Valley project.

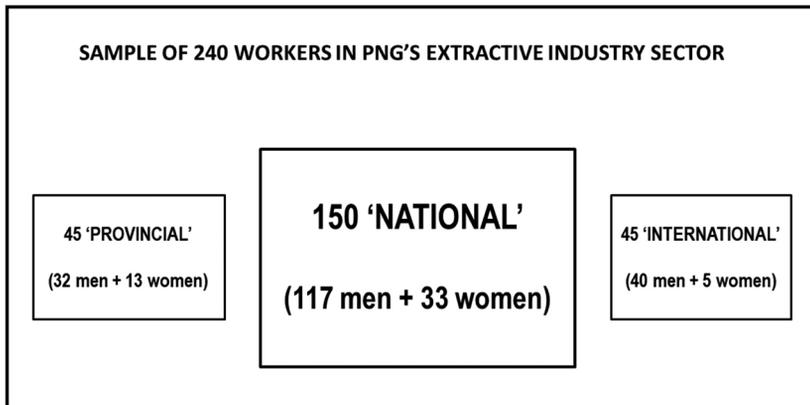


Figure 1: Distribution of respondents between three sections of the workforce.

Source: Interview data.

This group happens to be the same size as the group of 'exiles' included in our survey. Thirty-nine of these 45 workers were resident in Australia at the time, while six were located in other countries. If we regard this group as the 'international' section of our sample, and the previous group as the 'provincial' section, then the remaining 150 workers can be counted as the 'national' section located in between the two (see Figure 1).

Our sample of 240 workers represents around 1 per cent of all the Papua New Guineans who were formally employed in the resource sector at the time of our survey, including those who were (temporarily) employed in construction of the PNG LNG project, as well as those who were employed outside of PNG. But there is no sense in which this could be regarded as a sample that is representative of the larger population of workers in this sector. As we have seen, it is heavily biased towards two major mining projects in PNG, even if these were at opposite ends of the project cycle, one being an old mine and the other relatively new. It is also heavily biased towards the mining sector as opposed to the petroleum sector, and towards the larger, as opposed to the smaller, employers in the resource sector as a whole.

Survey Findings

The central question addressed in our survey might now be framed as a question about whether the 'mobility gap' (the difference between the three sections of the workforce) or the 'gender gap' (the difference between male and female workers) is more significant in explaining the other features of the group that we surveyed. However, the number of variables in the dataset raises other questions that might preclude any simple answer to this central question.

Gender and Generation

The proportion of women in both the national and provincial sections of our sample—22 and 29 per cent, respectively—was higher than we would predict from other sources of information about the resource sector. Women accounted for only 10 per cent of the workforce in the previously mentioned survey of three major mining projects conducted by the PNG Chamber of Mines and Petroleum in 2010 (Filer et al., 2016, p. 114), and only account for 11 per cent of the workers in the international section of our own sample. However, the number of women in the sample makes it easier to investigate the opportunities and constraints that women face in this sector.

Eighty-five per cent of the women in the national section of our sample were under 40 years of age, compared to 46 per cent of the men. In the provincial section, the proportion of younger women was slightly lower (77 per cent), and the proportion of younger men was slightly higher (53 per cent). However, the proportion of women under 30 years of age was higher in the provincial section (54 per cent) than in the national section (27 per cent). In the sample as a whole, there were 26 men in their 50s or 60s, but only one woman, and she was in the international section—a 'senior environmental adviser' working for a Brisbane-based contractor. If the resource sector is no country for old people generally, it certainly seems to be no country for older women.

These disparities are consistent with Macintyre's suggestion that a sizeable proportion of young female workers, especially those from a 'preferred area', are liable to drop out of formal employment when they get married, and even those who remain are liable to do so once they have a certain number of children to look after. Thirty per cent of the women

in the national section of the sample, and 31 per cent in the provincial section, said they were not yet married. Across the sample as a whole, the women reported an average of 1.9 children in their care, whereas the men reported a considerably larger number—an average of four children in the national section of the sample, 3.4 in the provincial section and 2.5 in the international section. Our sample contained 166 married men (88 per cent of all the men in the sample), and 107 (or 64 per cent) of these married men said their wives were not formally employed. By contrast, only one of the 31 married women (61 per cent of all the women in the sample) said her husband was not in the formal workforce.

Income and Education

All our respondents were asked to locate their net fortnightly income (after deductions) in one of four different income brackets. Sixty-seven per cent of workers in the national section of the sample, and 89 per cent of those in the provincial section, said that they earned less than PGK 2,000 each fortnight, whereas 10 per cent of those in the national section, but only 2 per cent of those in the provincial section, said that they earned more than PGK 4,000. This would seem to support Imbun's suggestion that most of the highly paid jobs occupied by Papua New Guineans in PNG's resource sector are claimed by members of a 'labour aristocracy' who are recruited from outside the areas of preference.

The figures provided by respondents in these two sections of our sample appear to be consistent with those derived from a subsequent survey of employers. Jones and McGavin (2015, p. 176) reckon that the average gross fortnightly wage in the 'mining and quarrying' sector in 2013–14 was PGK 3,377, while the median was PGK 2,142. However, these numbers include the wages and salaries paid to expatriate members of the workforce, which are generally much higher than those paid to their national counterparts. The workers in the international section of our sample were paid at rates much closer to those paid to the expatriate members of the PNG workforce, which only serves to underline the similarity between these two groups of workers. Twenty-two of the workers in this group of exiles were receiving at least 4,000 Australian or United States (US) dollars a fortnight,¹ which meant that this was the median net income for the whole group.

1 Note that at the time of our survey in 2012, the Australian dollar and US dollar were roughly at parity.

We would expect net fortnightly incomes to be closely associated with the educational qualifications of the workers, and this is broadly the case. All 16 of the workers in the national and provincial sections of the sample who earned at least PGK 4,000 a fortnight had undergraduate degrees, sometimes with additional postgraduate qualifications, and all but one of these workers would seem to count as members of Imbun's 'labour aristocracy'. Likewise, all but one of the workers in the international section of our sample who earned at least 4,000 Australian or US dollars a fortnight were similarly qualified. Degree holders accounted for 85 per cent of workers in the international section, 49 per cent in the national section and 22 per cent in the provincial section. At the other end of the scale, all but five of the 81 workers in the national and provincial sections who had not completed the 12th grade of secondary schooling had incomes of less than PGK 2,000 a fortnight.

However, there were some rather peculiar anomalies. We were somewhat surprised to find that five of the workers in the international section of the sample had not completed the 12th grade of secondary schooling, yet were still earning more than most of the workers in the other two sections of our sample, including those with university degrees. There were four degree holders in the national section, and another three in the provincial section, who were earning less than PGK 800 a fortnight, which was the lowest of the four income brackets in our survey, but which only accounted for 17 per cent of all the workers in our sample. These anomalies are largely explained by differences in the work experience of the workers.

The concentration of women at the lower end of the pay scale is not quite so easily explained. In the national section of the sample, 76 per cent of the women, as opposed to 64 per cent of the men, were taking home less than PGK 2,000 a fortnight, but in the provincial section, 100 per cent of the women, as opposed to 84 per cent of the men, had this level of income. Overall, the women in the sample had a narrower range of educational qualifications than the men. All the women had a minimum of 10 years of formal schooling, but only five had postgraduate qualifications, and three of these were in the international section of the sample, while one of the remaining two was a public servant. Nevertheless, 54 per cent of the women, compared to 41 per cent of the men, in the national and provincial sections of the sample had university degrees. If female graduates were not earning as much as their male counterparts, the difference might be partially explained by their relative youth or inexperience, but could also

be due to some form of gender discrimination. It might also be explained in part by the concentration of men in more specialised technical jobs and the greater likelihood that women tend to occupy clerical jobs of the sort found in many parts of the national economy. However, while 41 per cent of the women in the sample did indeed have clerical jobs, 28 per cent had more specialised technical jobs—the same proportion as the men.

Four Forms of Mobility

There are four distinct forms of mobility for which evidence was collected in our survey. The first is the peculiar form of long-distance commuting to which I already made reference in my discussion of gendered exclusions. It was difficult to think of a survey question that would distinguish long-distance (or long-rotation) commuters from those workers who commute to work on a daily basis. Some of them fly from their home to their workplace, while others drive or take a bus. A question about the time it takes to get to work will not serve the purpose either, and when you ask Papua New Guineans where their home is, they sometimes take this to be a question about their place of origin rather than their current place of residence.

From what we know of the employment practices at different resource projects, it was nevertheless possible to make an approximate distinction between these two groups of workers in our sample. Roughly half of the workers in the international section were long-distance commuters, 44 per cent of those in the national section, but only 9 per cent of those in the provincial section. That is not surprising, given that nearly all of the workers employed on the Ok Tedi project were normally resident in the townships of Tabubil and Kiunga at the time of the survey, and a substantial proportion of those employed on the Hidden Valley project were recruited from areas within daily commuting distance of the mine site. Only seven of the long-distance commuters in the national section of the sample, and none of the four in the provincial section, were women. While this might be taken as evidence in support of Macintyre's argument that this form of employment tends to discriminate against women, it is interesting to note that all seven of these women had children, who presumably had to be left at home for days at a time, even though only four of them were currently married.

The most distinctive group of long-distance commuters in the national section of our sample was a group of 24 workers from the island of Misima who had worked at the Misima mine site before the mine was closed in 2004. This group illustrates a second form of mobility that is evident in the results of our survey. Just as the 45 workers in the international section of our sample would formerly have counted as members of the national or provincial section of PNG's resource sector workforce, so these Misiman workers had 'migrated' from the provincial to the national section by finding work in the resource sector outside of Milne Bay Province. There was even one man from Misima discovered in the international section of our sample, so he had gone one step further.

There had never been more than 40 women among the locally recruited workforce on the Misima mining project when it was still in operation, and they accounted for only 6 per cent of local recruits (from the inner two zones of entitlement) when the size of the total workforce peaked in the late 1990s (Finlayson, 2002). It was predicted that very few of these women would remain in formal employment once the mine closed, either because of family commitments on the island or else because of their limited qualifications (Jackson, 2000, p. 40). Our own evidence bears this out. Although we cannot be sure how many Misimans were still formally employed in the resource sector in 2012, only one of the 24 who turned up in the national section of our own survey sample was a woman—a 'land rehabilitation officer' who was employed to clean up the mess when the mine closed and who then got a similar job at the Porgera mine. This lady was the only member of this group of 24 Misiman workers who had a university degree. None of the men in the group had more than 10 years of formal schooling and, although some had received additional technical training while working on Misima, none had obtained any additional qualifications since the mine closed. All 24 members of this group—even the female degree holder—were earning less than PGK 2,000 a fortnight, and therefore fell within the two lowest income brackets in our sample. If these workers were now members of a national labour aristocracy, they still appeared to be largely stuck in its lower ranks.

The second form of mobility can be considered as a particular instance of the third form, which not only consists of the movement of workers between provinces or countries, but also between jobs within the same geographical area, or even with the same employer. But if we think of this as occupational mobility, we still need to consider that people are not only moving between jobs within the formal sector of the economy

but also moving in and out of the formal sector altogether. In order to get a handle on this third form of mobility, we asked our respondents to tell us about the jobs they had held before they took on their current job. In each case, we asked for the title of the job, whether it had been with the same employer or a different employer, and the number of years for which it had been held. We were able to combine the results with answers to a separate set of questions about the educational history of our respondents to determine whether they had been undergoing some kind of education or training during periods when they were not in formal employment.

If we just count the number of years that our respondents had spent in each of the jobs they had occupied, then it appears that the women had a considerably higher rate of occupational mobility than the men. In the national section of our sample, the women had spent an average of 2.7 years in each of their jobs, whereas the men had spent an average of four years in each of theirs. In the provincial section of the sample, the corresponding figures were 3.5 years for the women and 4.4 years for the men. The most plausible explanation for this discrepancy is that workers tend to stay longer in the same job as they grow older, so the higher rate of turnover among the women may be due to their lower average age. The discrepancy is much smaller if we only consider the number of jobs that individuals had held over the previous decade rather than the whole of their careers in the formal workforce. In the national section of our sample, the men and women had both spent an average of 7.5 years in formal employment during that period, the women had held an average of three jobs and the men had held an average of 2.8 jobs. In the provincial section of the sample, the men had spent an average of six years in formal employment and held an average of 1.8 jobs over the course of the previous 10 years, while the women had spent an average of 5.9 years in formal employment and held an average of 1.9 jobs.

The trouble with averages like this is that they mask a wide range of variation between individuals in the sample. Eleven of the men in our sample, but only one of the women, had been in their current job for more than a decade, the record being set by one man in the provincial section of the sample who had been in his current job as a 'community relations officer' for 31 years. We find a similar story if we look at the number of years that workers spent 'out of work' between finishing their previous jobs and starting their current ones. Four of the men in our sample, but none of the women, had spent more than a decade apparently

'unemployed' before landing their current jobs. In this case, the record was set by a 70-year-old man in the provincial section of the sample who said he had spent 41 years outside the formal workforce before being hired as an 'equipment operator', having previously been employed to do similar work in the 1960s. If we look at the number of years in which our workers had neither been formally employed nor undergoing some form of education over the course of the previous decade, we see that the average was 1.4 years in the national section of our sample, 1.5 years in the international section and 2.2 years in the provincial section. But there were 20 men and three women in the sample, including one man in the international section, who had been 'out of work' in this sense for at least five of the previous 10 years. Interestingly enough, six of these 20 men were Misimans, which reflects the fact that workers previously employed at the Misima mine generally took several years to find alternative employment in the resource sector after that mine had closed.

The final form of mobility is the one reflected in answers to questions about the province in which our respondents, their parents and their spouses were born. This is both a geographical and a social form of mobility in the sense that it reflects the extent to which individuals are enmeshed in networks of kinship and affinity that cut across provincial boundaries and ethnic identities. It has long been noted that Papua New Guineans, like other Melanesians, have a propensity to marry people from other 'tribes' and provinces, once provided with an opportunity to do so (Beer & Schroedter, 2014; Chowning, 1986; Lind, 1969; Rosi & Zimmer-Tamakoshi, 1993), and we should therefore expect members of a national 'labour aristocracy' or 'middle class' to be at the forefront of this particular tendency.

In the analysis of our survey results, I sorted our respondents into four categories according to the number of 'provincial affiliations' specified in their answers to our questions. The workers in the provincial section of our sample could not have more than three affiliations, given the way that this group had been defined. Nevertheless, 42 per cent of workers in this section had either one parent or a spouse born in a province other than their own birth province, and three of these 45 workers had both a parent and a spouse born elsewhere. In the national section of the sample, 32 per cent had two provincial affiliations, while 20 per cent had three or four. In the international section, 44 per cent had two provincial affiliations, but only 11 per cent had three or four. Across the sample as a whole, there

was some evidence of a correlation between the number of provincial affiliations and the size of people's pay packets, but not as much as we might have expected.

A second way of dealing with the fourth form of mobility was to assign a provincial and regional identity if the workers and at least one of their parents were born in the same province, or if both of their parents were born in the same province. We could then determine whether those from one region were more 'parochial' than those from other regions, either because they only had the one provincial affiliation or else because they were married to someone with the same provincial identity. This was a way of revisiting the argument that the level of parochialism, in this sense, is inversely related to the length of time for which members of different ethnic groups have been exposed to contact with the Western or modern world (Levine, 1979, pp. 97–98). Given the construction of our own sample, the question could only be posed as one about the difference between respondents from the highlands region and those from the other three 'lowland' regions, where most of the population was subject to colonial administration before the highlanders had any contact with it.

Across the sample as a whole, there were 223 workers who could be assigned a provincial and regional identity, of whom 63 were highlanders and 160 were lowlanders. The difference here was that 65 per cent of the highlanders, but only 46 per cent of the lowlanders, had only one provincial affiliation. Of all these workers, 176 had a spouse to whom they assigned a provincial identity. The difference here was that 69 per cent of the 54 highlanders, but only 53 per cent of the 122 lowlanders, had married someone from the same province. Both of these disparities would be greater if the collection of lowlanders in our sample had not included a group of people from Morobe Province who were employed on the Hidden Valley mining project, and another group from Milne Bay Province who were formerly employed on the Misima mining project, since both of these groups were even more parochial than the highlanders.

Three Forms of Remittance

Our survey respondents were asked to specify their contributions to development 'at home' in the previous year (2011) under three main headings: goods supplied as gifts to relatives outside of the worker's own nuclear family; payments of cash to meet a variety of expenses on behalf of such relatives; and accommodation of rural relatives for various

periods of time by workers resident in urban areas. Academic discussion of 'remittances' in PNG has generally focused on the first two types of transaction (Boyd, 1990; Carrier, 1984; Clunies Ross, 1984; Cox, this volume; Dalsgaard, 2013; Hayes, 1993; Morauta, 1984; Rasmussen, 2015; Sykes, 2017), but the third type may be no less significant as a distinctive aspect of rural claims on a share of urban wage incomes (Ryan, 1985, 1993; Zimmer-Tamakoshi, 1998).

The first point to be made here is that only six workers in the whole sample of 240 said that they did not make any of these three types of remittance. Two were in the national section of the sample and four in the provincial section; five were men and one was a woman; four earned less than PGK 800 a fortnight; and four were either divorced or not yet married. The one thing that all six had in common was that they were currently resident in Morobe Province and working on the Hidden Valley mining project. Another 87 workers, all in the national and provincial sections of the sample, gave equivocal answers to some of our questions, either by failing to state whether or not they had hosted rural relatives, or else by stating that they had made contributions in cash or in kind to relatives at home, but then failing to specify the value, substance or purpose of these contributions.

There were 219 workers who specified the value, substance and purpose of one or other of the first two kinds of contribution, of whom two-thirds (147) specified both while the rest only specified one of them. To limit the burden placed on their memories, we only asked them to name the 'four main things [they] bought' by way of an in-kind contribution, or the 'four main types of contribution [they] made', by way of a cash remittance, and in each case to say how much they spent on each commodity or payment. This could mean that we have failed to capture the entire value of the contributions made by some of the workers in the sample, even when they gave specific answers to both of these questions.

There were 96 workers in the national section of the sample, and another 28 in the provincial section, who specified the value and substance of their in-kind remittances. The combined value of these contributions was approximately PGK 836,000 in the national section and PGK 300,000 in the provincial section. The higher average value of the in-kind remittances made by workers in the provincial section—PGK 11,094, as opposed to PGK 8,616 in the national section—might be taken to reflect the greater ease with which workers in this group were able to supply commodities,

rather than money, to villages within their own province. Yet in the international section of the sample, the combined value of the in-kind remittances made by 41 workers was more than 155,000 Australian or US dollars, which meant that the average was 3,790 dollars (then equivalent to PGK 9,475), so the distance between the worker and his or her 'home' does not seem to be the only factor at work here.

There were 129 workers in the national section of the sample, and another 34 in the provincial section, who specified the value and purpose of their remittances in cash. The combined value of these contributions was approximately PGK 1 million in the national section and PGK 209,000 in the provincial section. In this instance, the direction of the difference between the average value of the contributions made by workers in these two sections of the sample was reversed, being PGK 8,260 in the national section and PGK 6,144 in the provincial section. In the international section, 38 workers made cash contributions worth a total of approximately 145,000 dollars, which meant an average of 3,824 dollars (equivalent to PGK 9,560), so this group of workers turned out once again to be slightly more generous than those in either of the other two groups.

The combined value of the different types of commodity specified as components of the in-kind remittances made by 166 workers in our sample varied a good deal between the different sections of the sample. In the national section, 46 per cent of the money was allocated to means of transport (including vehicles, motors, parts and fuel), while 25 per cent was allocated to construction and building materials and 6 per cent to household furniture and appliances. In the provincial section, 68 per cent was allocated to construction and building materials, 10 per cent to household furniture and appliances, and only 6 per cent to means of transport. The international section was somewhere in the middle of this range of variation: the workers in this section spent 34 per cent of their money on construction and building materials, 27 per cent on means of transport, and 9 per cent on household furniture and appliances. Other types of commodity, such as food, working tools and equipment, clothing and accessories, or mobile phones and digital devices, each accounted for less than 10 per cent of the spending in all sections of the sample. The only exception was in the international section, where 11 per cent of the money was spent on food. We did not ask our respondents to tell us how these various commodities reached the hands of their recipients.

The purchase of means of transport or construction and building materials was also mentioned by some of our respondents as purposes for which they sent money to their relatives at home, but in no section of the sample did these account for more than 10 per cent of the value of total spending. In the national section, school fees accounted for the largest share of expenditure (24 per cent), followed by funeral expenses (13 per cent), then means of transport (9 per cent). In the provincial section, school fees again came top of the list (22 per cent), followed by compensation payments (11 per cent) and funeral expenses (10 per cent). In the international section, compensation payments came first (31 per cent), followed by school fees (21 per cent) and then brideprice payments (10 per cent).

Here again, the averages mask a range of variation between individual responses that might lead us to wonder whether some of these responses actually make sense. In the national section of the sample, there was one man who said he had spent PGK 114,000 on buying means of transport for his relatives in the space of a single year, and another who said he had spent PGK 108,000 on the same sort of thing. Together, these two accounted for more than half of all the money that people in this section of the sample had spent on such things, and that in turn helps to explain why means of transport accounted for almost half of all the money allocated to in-kind remittances by workers in this section of the sample. Admittedly, both of these men were employed in managerial positions (by the same mining company), and were making more than PGK 4,000 a fortnight, so perhaps they could afford remittances of such a size. However, if they were buying mini-buses or four-wheel-drives for their relatives, as seems likely, one might still wonder whether these could really be counted as 'gifts' to others rather than 'investments' in their own family businesses.

To get around this difficulty, we can calculate the median, rather than the mean, amounts that workers in our sample claim to have spent on one or both of the first two types of remittance before seeking to establish a relationship between the level of spending and the size of their fortnightly pay packets. Once we do that, the relationship seems fairly close. In the national section of the sample, the median annual expenditure by workers earning less than PGK 800 a fortnight was PGK 2,250; in the three higher income brackets, this rose to PGK 5,650, 9,650 and 22,000, respectively. In the provincial section of the sample, the equivalent amounts in each income bracket were PGK 2,500, 6,600, 34,400 and 17,000. And in the international section, the median level of spending by workers earning less than 4,000 dollars fortnight was 3,500 dollars (or PGK 8,750), whereas

those earning more than 4,000 dollars a fortnight had a median spending level of 4,195 dollars (or PGK 10,488). The only obvious anomaly here is the reported level of spending by the four workers in the provincial section who were in the second highest income bracket, and that was because three of them reported unusually high levels of expenditure. Otherwise, it appears that workers in the international section of the sample were somewhat more generous in absolute terms, but still spent a smaller proportion of their net incomes on remittances than workers in the national and provincial sections.

Once we take income levels into account, the median levels of spending on these first two forms of remittance appear to be a function of marital status as much as a function of gender, but the association is not constant across the different sections of our sample. In the national section, it was married men who ranked first (with PGK 4,300), and unmarried women who ranked second (with PGK 3,575), while married women and unmarried men shared third place (with PGK 2,700). This pattern was repeated in the international section, with married men again spending the largest amount (7,779 dollars or PGK 19,447), again followed by unmarried women (3,575 dollars or PGK 8,938), then by married women (2,933 dollars or PGK 7,333), and finally by unmarried men (2,500 dollars or PGK 6,250). But in the provincial section, it was unmarried women who spent the most (PGK 13,000), followed by married men (PGK 4,000), then unmarried men (PGK 3,200), and finally married women (PGK 1,650). Given the small number of respondents in some of these categories, it is hard to attribute much significance to these numbers, let alone to their further breakdown into different forms of spending.

When we turn to the third form of remittance—if that is what it really is—we find that 165 town-based workers in the national and provincial sections of the sample had similar dispositions to entertain their rural relatives, so there is no point in counting them separately. Eighty-eight (or 53 per cent) of these workers said they accommodated some relatives over the course of the previous year. There were 415 guests altogether, of whom 259 (62 per cent) were said to have stayed for more than a month, and 146 (35 per cent) for more than six months. Our respondents also said that 108 (or 26 per cent) of their guests were mainly helping with child care, while 92 (or 22 per cent) were receiving some form of education at their hosts' expense.

One might suppose that workers in the international section of the sample would be much less hospitable, partly because of their distance from the relatives they might entertain, and partly because of political barriers to international migration. We were somewhat surprised to find that 19 (or 42 per cent) of the 45 workers in this group managed to surmount these obstacles by entertaining a total of 38 relatives, of whom 29 (or 76 per cent) were said to have stayed for more than a month. Eight of these guests were said to have been helping with child care, but only one stayed for more than six months, and none were apparently being educated at their hosts' expense. In the national and provincial sections of the sample, we have no reason to assume that guests could not be helping with child care while receiving some form of education at the same time, but it is safer to assume that most of the guests who engaged in one or both of these activities would have been among those who stayed for several months.

In the sample as a whole, there were 72 married men who said that they hosted 321 rural relatives between them, and 19 married women who said that they hosted 102. There is no indication that any of our respondents were married to each other, so these can be taken as the responses of 91 different households. If the wives appear to have been slightly more hospitable than the husbands (with an average of 5.37 as opposed to 4.46 guests), we cannot infer that our respondents were only counting their own relatives rather than those of their spouses. One might suppose that assistance with childcare would be especially important for those of our respondents who were single parents, but our entire sample only contained two single fathers and two single mothers who said that they obtained such support from visiting relatives. There was one unmarried mother (with two children) who said that she hosted three rural relatives for a period of more than six months, but she did not say that they provided such support. If child care does not figure very prominently in the relationship between this collection of urban hosts and their rural guests, then it does make this relationship seem more like a form of remittance from the former to the latter.

Orientations and Aspirations

In order to assess the orientations and aspirations of the workers in our sample, we posed three distinct sets of questions. First, those who had occupied one or more jobs before their current job were asked to specify the reasons why they had left each of those previous jobs. Second, we

asked each of our respondents what they most liked, and what they least liked, about their current job. Finally, we asked them what job they would like to have in five years' time, and what was the best job they thought they could get during the rest of their careers. These were open-ended questions, so we had to devise some way of separating a remarkable variety of responses into a limited number of mutually exclusive categories. This process of classification may have obscured some important features of the variation we encountered.

Since 27 per cent of the workers in the provincial section of our sample, and another 5 per cent in the national section, were new entrants to the formal labour market, whose current job was the first one they had occupied, they could give us no answers to our first set of questions. This explains why the total number of responses from the provincial section was only 61, while the number of responses from the international section, with the same number of workers, all of whom had held at least one job before their current one, was 114. Some respondents gave more than one reason for leaving a previous job, in which case we inferred what the main reason had been so that each response could be assigned to a single category.

Very few of our respondents cited factors such as poor management, the work environment, commuting time, job location, family or personal reasons as significant factors in their departure from a job. Out of a total of 507 responses from the whole sample, only 11 per cent made reference to any of these factors, nor were such responses any more likely to come from women than from men. Even in the international section of the sample, the opportunity to emigrate was only specified in four of the 114 responses. Our respondents were mainly concerned with the extent to which a change of job had come about as a result of their own action, as opposed to that of their employers, and with comparing the terms and conditions of each job they had held.

There was a predictable difference between the reasons given by workers in the international section of the sample and those given by workers in the national and provincial sections. Only 18 per cent of the reasons given by members of the international section referred to a promotion or transfer by their existing employers, whereas 44 per cent pointed to a better job offer from a new employer, which was sometimes framed in terms of greater remuneration and benefits, and a further 21 per cent made explicit reference to the respondent's search for a better career path. Of 393 reasons given by workers in the national and provincial

sections, more than 21 per cent cited a movement between jobs in the same organisation, but only 29 per cent cited a better job offer from a new employer, and only 14 per cent made explicit reference to the search for a better career path. A further 18 per cent of the reasons given by workers in these two groups made separate reference to redundancy (including mine closure), whereas this misfortune figured in less than 4 per cent of the reasons given by workers in the international section. These appear to reflect the greater mobility and autonomy of the international section of the mining workforce.

Within the national section of the sample, workers in the top two income brackets were more likely to say that they had been promoted rather than simply transferred when changing jobs within the same organisation, but this discrepancy was even more notable when comparing the responses of the women and the men. More than 31 per cent of the reasons given by the women, but less than 12 per cent of those given by the men, made reference to promotion, whereas 6 per cent of the reasons given by the men, but less than 2 per cent of those given by the women, only made reference to a transfer. A similar pattern is evident in the references made to the search for a better career path. While workers in the top two income brackets were more likely to mention this as the main reason for departing their previous jobs, this disparity was only evident in the national section of the sample. But in the national and provincial sections taken together, this accounted for 24 per cent of the reasons given by the women, but only 11 per cent of those given by the men. Like workers in the top two income brackets, women were also less likely to cite redundancy as a reason for departure.

In the national and provincial sections of the sample, 53 per cent of the workers said that the things they most liked about their current jobs were the qualities of the job itself, while another 8 per cent made separate reference to remuneration and benefits. The equivalent proportions in the international section were 40 per cent and 16 per cent. Three of the workers in this section, but only one in the national section, especially liked the commuter mining work schedule. Across the sample as a whole, there was a separate collection of workers who were more enthusiastic about the quality of their relationships with other people, especially colleagues, subordinates, trainees, local community members or other outsiders. This group accounted for 31 per cent of workers in the national section and 24 per cent in both the provincial and international sections. However, there were only two workers in the international section, and

none in the other two sections, who extended this sentiment to their own managers or supervisors. Across the sample as a whole, there was only one male worker in the national section who said he liked nothing at all about his current job, but he was matched by another male worker who said he liked everything.

There was a wider spectrum of opinion when it came to sources of dissatisfaction. Aside from the 32 workers who could not think of anything they did not like about their current jobs, there were 52 (22 per cent) who grumbled about their relationships with other people (including managers or supervisors), 47 (20 per cent) who did not like the qualities of the job itself or the physical work environment, 42 (18 per cent) who complained about their working hours or commuting schedules, and 18 (8 per cent) who were frustrated by bureaucracy. The number who complained about the lack of opportunities for further training or advancement was surprisingly small—only four in the national section of the sample and one in the provincial section. This was the same as the number in the international section who complained instead about missing their friends and relatives at home. Otherwise, there were no significant differences between the responses from workers in the three different sections of our sample.

It was hard to discern any significant relationship between income levels and sources of satisfaction or dissatisfaction in the national and provincial sections of the sample. In the international section, six of the seven workers who specifically complained about their commuting schedules were earning less than 4,000 dollars a fortnight, but it is rather more puzzling that nine of the 10 workers who complained about their relationships with colleagues or subordinates were earning more than that. Across the sample as a whole, there appears to be no significant difference between the responses of men and women, and certainly no evidence that women were more likely to cite the quality of their relationships with other people, inside or outside of the workforce, as a specific source of satisfaction or dissatisfaction with their jobs.

While our third and final set of open-ended questions was meant to elicit a distinction between the short-term and long-term goals of our respondents, many of the responses suggested a measure of confusion on this score, because an answer to one of the questions sounded as if it would have been more appropriate as an answer to the other one. In any case, answers to both questions have been grouped into the same six categories,

so answers to both questions can readily be combined to give a sense of the general aspirations of our respondents. This means that the number of aspirations or goals is twice the number of respondents, and some of our respondents have expressed two aspirations that do not appear to be consistent with each other.

Seventeen per cent of the answers given to our questions could not be assigned to any of our six categories because they were insufficiently specific. In all three sections of our sample, the most common aspiration was promotion within the respondent's existing line of work, which was sometimes expressed as a desire to be a supervisor or a trainer. This accounted for 50 per cent of the aspirations expressed in the national section, 51 per cent in the provincial section and 67 per cent in the international section. Some respondents expressed a higher level of ambition by saying that they aimed to occupy a senior managerial role, though it was sometimes difficult to tell whether or to what extent this would entail a departure from their existing line of work. This higher level of ambition accounted for 7 per cent of the aspirations expressed in the national section of the sample, 11 per cent in the provincial section and 17 per cent in the international section. It is understandable that workers in the international section should have greater hopes of further promotion than those in the other two sections, but somewhat strange that those in the provincial section should have greater hopes than those in the national section.

There were more workers who aspired to own their own business than to occupy a senior managerial role within a mining company, but these workers were more unevenly distributed between the three sections of our sample. This accounted for 17 per cent of the aspirations expressed in the national section, and 13 per cent in the provincial section, but none at all in the international section. This disparity is reduced when we add a second group of workers who specifically said that they aspired to be consultants to the mining industry, presumably making use of the skills already acquired in their existing line of work. This accounted for 12 per cent of the aspirations expressed in the international section of the sample, 6 per cent in the national section, but only 1 per cent in the provincial section. The remainder of the aspirations expressed by our respondents consisted of a desire to find an alternative form of employment or an alternative to any form of employment. These accounted for 21 per cent of the aspirations expressed in the national section of the sample, 11 per cent in the provincial section, but only 1 per cent in the international section.

The desire for promotion within one's existing line of work was inversely related to the size of a worker's fortnightly pay packet, while workers with higher incomes were more likely to aspire to a senior managerial role. In the national section of the sample, the desire to own one's own business was largely confined to workers in the middle income brackets, who were earning between PGK 800 and PGK 4,000 a fortnight, but in the provincial section, it was largely confined to those in the lowest income bracket, who were earning less than PGK 800 a fortnight. In the national section, it was workers in the top income bracket, earning more than PGK 4,000 a fortnight, who were most likely to say that they wanted to find an alternative form of employment or drop out of the labour market altogether.

In the national section of our sample, the desire for promotion within one's existing line of work accounted for 94 per cent of the aspirations expressed by women, but only 50 per cent of those expressed by men. This disparity could not be detected in the other two sections of the sample, where the number of female respondents was relatively small. Only one woman in the entire sample envisaged promotion to a senior managerial role in one of her responses to our two questions. There was no such gender disparity in the articulation of a desire to own one's own business, or even to be a consultant to the mining industry, at least in the national and international sections of the sample. In the national and provincial sections, there was a higher proportion of women who said they wanted to find an alternative form of employment, but no equivalent difference in the proportion who said they wanted to drop out of the labour market altogether.

Discussion and Conclusion

If our survey enabled us to answer some questions about the composition of PNG's mining workforce and the nature of its contribution to 'development', it is equally important to acknowledge the limitations of this study and the number of questions to which it can only provide some very partial answers, if any answers at all. For example, the evidence presented in this paper does not speak to the distinction that Imbun (2006a, 2006b) has drawn between the parochial or 'tribal' section of the mining workforce and those whom he describes as members of a 'national proletariat' or 'labour aristocracy'. We cannot tell how many of

the 45 individuals in the provincial section of our sample belong to the first two zones of entitlement, as opposed to the third one, and might therefore think of themselves, or else be treated, as the customary owners of land in the vicinity of the project on which they are employed. Even if we did know the number, it might be so small as to preclude any attempt to treat these individuals as a representative sample of some larger 'tribal' population. We do know that the 24 workers formerly employed on the Misima project belonged to the first two zones of entitlement when they were working there, but they are now working on other mining projects where they no longer have this status.

What we do know is that another section of the mining workforce is clearly under-represented in the national and provincial sections of our sample. This consists of individuals employed by the contractors who supply various goods and services to mining or petroleum companies, including those contractors who are engaged under the terms of the preferred area policy, and may thus qualify as 'landowner companies'. There is no reason to assume that this group of workers enjoys the same terms and conditions as those employed directly by mining and petroleum companies, nor is there any reason to assume that those employed by landowner companies are themselves recruited from the first two zones of entitlement and therefore count as 'landowners' in their own right (Bainton, 2017). The absence of landowner companies and their workers from our sample is one of the main reasons that our evidence does not speak to debates about the relationship between the distribution of formal employment and the social dynamics or internal stratification of mine-affected communities (Bainton & Banks, 2018).

Imbun's distinction between the two sections of the mining workforce is not meant to cast additional light on that particular problem, but it is meant to explain why some members of the workforce are inclined to join trade unions while others are not. By some accounts, the level of unionisation has been remarkably high in PNG's mining industry (Hess, 2001, pp. 71–72), and that is why union membership can be regarded as a qualification for membership of Imbun's 'national proletariat' or 'labour aristocracy'. However, we did not ask our respondents to tell us whether they were members of a trade union, so our own evidence is also silent on the question of how this variable might relate to the others that we investigated.

At least one of these other variables does relate to Imbun's distinction, since it is partly based on the distinction drawn by Bedford and Mamak (1976) between the three different 'strategies' adopted by members of the Bougainvillean mining workforce in the early 1970s. One of these they called the 'proletarian' strategy, which would obviously be the strategy adopted by members of Imbun's 'national proletariat', since it entails a certain level of commitment to formal employment as the source of one's identity as well as one's livelihood. The others, which they called 'peasant' and 'entrepreneurial' strategies, could be those adopted by members of Imbun's 'tribal' workforce, and the choice between them might then depend on the perceived capacity of these workers to elevate themselves from the status of mere 'landowners' to the status of successful entrepreneurs, possibly as directors of landowner companies (Bainton & Macintyre, 2013).

Only one of the workers in our sample expressed a desire to exchange his current job for what might conceivably be described as the life of a 'peasant', cultivating his own customary land. There was indeed a larger group that appeared to possess an 'entrepreneurial' strategy, but the evidence does not enable us to say how many of them were thinking about a business based on their status as customary landowners. Those who aspired to be 'consultants' were clearly not thinking along these lines at all, but were mostly aiming to shift their positions within the mining workforce from direct to indirect employment by the major companies. Some of those who said they wanted to own their own business may have had similar aims. The majority of workers in our sample were mainly concerned with the prospects of occupational mobility within the extractive industry sector. In that sense, we could say that they had a 'proletarian' strategy, although this term does not readily accommodate the small number who already occupied managerial positions or the larger number who aspired to follow in their footsteps.

This kind of debate about the orientations and aspirations of wage-earners in PNG is just one tiny part of a very old—if not positively old-fashioned—debate about the factors that inhibit the formation of a proletarian 'class consciousness' and thus prevent such people from behaving in accordance with their own 'economic interests'. Imbun and his colleagues may have found some traces of such thinking among the trade unionists in PNG's mining workforce. But even in this context, it is mainly construed as a reaction to the perceived injustice of a neo-colonial dual salary system. The question that goes begging here is whether the

jobs that people occupy in the formal sector workforce, or the incomes they derive from these occupations, determine their social values and practices outside the workplace.

In their own analysis of the absence of class consciousness in this wider social sphere, two of Imbun's colleagues observe that there is a 'very small sub-set of the population, primarily politicians, ex-politicians or members of landowning groups benefiting from mineral resource rents [who] live an opulent lifestyle mimicking every excess of the non-indigenous lifestyle that they seek to emulate' (Jones & McGavin, 2015, pp. 9–10). The rest of the population, including members of the formal sector workforce, cannot accomplish this act of emulation because the number of their dependents, inside and outside of their own households, grows in proportion to the size of their incomes, and thus inhibits the accumulation of private wealth. While this observation is not based on their own data, it does accord with the general tenor of political discourse in PNG and with many of the observations made by other social scientists. What therefore seems to matter to most Papua New Guineans is not the relations of production that give rise to their incomes, but the property relations through which these incomes are (or are not) redistributed.

That is how the concept of the 'remittance economy' came to be incorporated into our own contribution to the World Bank's companion volume. On the basis of our own evidence, we estimated that the combined value of the three forms of remittance we identified could amount to as much as one-quarter of the net incomes of the workers in our sample. Even if the proportion appeared to be somewhat smaller in the international section, it was still substantial. We also argued that this should not simply be construed as a set of gifts, or the acquittal of a set of social obligations, but as a form of investment that was creating 'positive spillovers for development'. However, I have to concede that this is not the only way to interpret the evidence.

In her own study of what she calls 'transnational [Papua New Guinean] households' in Australia, some of which relied on wage incomes from the mining sector, Karen Sykes has come up with a new version of Bedford and Mamak's 'peasant strategy', but one that does not lead anywhere. She says that the wage-earners she interviewed thought of their own jobs as 'their only remaining gardens', and she takes this to mean that they saw themselves as 'environmental and economic refugees seeking a substitute for making a living from horticulture' (Sykes, 2017, p. 126).

She is thus inclined to regard these people as an extreme case of the ‘dislocation’ induced by geographical mobility, apparently because their greater distance from their home villages eliminates the capacity of their remittances to provide a guarantee of future access to clan land, either for themselves or their children (Sykes, 2017, p. 131).

We did not ask our own respondents *why* they made remittances. I doubt whether the inclusion of such a question in our survey would have produced a sensible set of responses, even if we partially begged the question by providing a limited set of possible answers. If the remittance economy is such a pervasive phenomenon, it would seem like asking people why they did what they thought was right and proper. But if Sykes is correct in her own interpretation of the motives of Papua New Guineans in Australia, there is no reason to think that those still living in PNG would have any other motives, even if they had a greater chance of securing the desired outcome. So should we regard the ‘positive spillovers’—if there are any—as the unintended consequences of action that is primarily self-interested? And if so, how do the actors react to the prospect of their own failure to achieve their own objectives?

Even though there was a wide range of variation in the volume and value of the remittances reported by our respondents, we could not identify any other variables in our dataset, aside from the relative size of people’s pay packets, that might explain this variation. Men and women were equally likely to participate in the remittance economy, so it seems reasonable to assume that married men and women were looking after their own relatives rather than those of their partners. If our workers were travelling towards some form of possessive individualism, most of them do not seem to have made too much progress.

If the workers in the international section of our sample spent a somewhat smaller proportion of their net incomes on remittances, we cannot necessarily take this as a reflection of their greater sense of alienation from relatives in PNG, or even the dawn of a recognition that they might not go back home. In the informal conversations that accompanied their interviews, they appeared to be quite happy with the improvement in their material circumstances, and certainly did not regret their decision to emigrate, even if five of them did say that they missed their friends and relatives at home (Filer et al., 2016, p. 123). Perhaps it was Peter—our ‘bloke in the box’—who epitomised the peak of their desire, since he was only a member of this section by virtue of having his family home in

Sydney, even while he spent more than half his time back in PNG. Peter did not tell me that his tree-planting program was intended to secure his customary land rights, as well as to produce a new form of 'development' in his natal village. Perhaps he had a mix of motives that defies any simple distinction between self-interest and the common good. But his was surely not a 'peasant' strategy.

We did not ask the workers in the international section of our sample whether or how they proposed to follow Peter's example, but anecdotal evidence indicates that their capacity to do so was being thwarted by the refusal of some mining companies in PNG to treat them as 'expatriates' and reward them accordingly (N. Bainton, personal communication, 7 March 2019). This form of circular migration would simply add to the resentment caused by the dual salary system that had partly motivated their initial decision to move overseas. At the same time, the window of opportunity that had been opened by the 'resource boom' was already beginning to close. If that made it harder for well-qualified Papua New Guineans to opt out of the system, it did not make it any easier for the companies to justify the employment of 'genuine expatriates' who cost so much more than their national counterparts. When resource booms come to an end, cost-cutting imperatives become the order of the day. The financial incentive to speed up the localisation of the mining workforce has only added to the political pressure that can no longer be alleviated by the safety valve of emigration.

If Peter was the odd man out in the international section of our sample, then what are we to make of Hillary's status as a woman who was absent from our own sample, but who did figure in a mining company's own story about its contribution to the cause of gender equality? Women like Hillary were certainly present in the national section of our sample, and our evidence does seem to indicate a recent growth in the number of women employed in technical and managerial roles. Furthermore, the women in our sample distinguished themselves from the men by reference to their experience of promotion, or their hopes for further promotion, within their current line of work. None of the unmarried women expressed a desire to exchange their jobs for a life of domesticity as mothers and housewives, even if this was the fate that awaited them. But in this respect our sample is clearly one-sided. Although we asked the married workers in our sample if their spouses also had wage-earning jobs, we did not ask the women whether they were married to men who were also working in the mining industry or whether this had helped them to retain their own

places in the formal workforce. Nor did we ask the married men what their unemployed wives got up to in their spare time, so we cannot tell whether these women were victims of the ‘jealous husband syndrome’ that is said to restrict the social and economic activities of many women in PNG’s urban households (Gustafsson, 1999; Strathern, 1984).

In the period since our study was completed, there has been a noticeable increase in the number of corporate press releases advertising the recruitment and advancement of women in PNG’s extractive industry workforce. These could be read as a somewhat belated response to the national ‘women in mining’ program initiated by the World Bank in 2002, even if that program was primarily aimed at strengthening the position of women as representatives of mine-affected communities in the first two zones of entitlement (Eftimie, 2011). Yet manifestations of corporate social responsibility, like the dispensation of remittances, can also be read as expressions of economic self-interest. Maybe women resemble the ‘tribal’ section of the workforce to the extent of being less recalcitrant, less likely to join a trade union, and less likely to leave their employer, or even leave the country, in search of a better job. That was the gist of the argument we made in our contribution to the World Bank’s companion volume (Filer et al., 2016, p. 125), but it must be said that our evidence is largely circumstantial. If that argument was based on the opportunities created by a resource boom that was coming to an end at the time of our survey, there is no reason to assume a simple and constant relationship between the different forms of mobility and inequality that we were able to detect.

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