

Gender of the Gold: an Ethnographic and Historical Account of Women's Involvement in Artisanal and Small-scale Mining in Mount Kaindi, Papua New Guinea,

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ABSTRACT

The Kaindi area of Papua New Guinea is home to a large community of Anga small-scale miners. While they constitute nearly half of the local population, women do not participate in mining to the same extent as the men. Drawing on ethnographic data this paper shows that this is not just due to personal choice but also to a series of limiting factors that include pollution beliefs, land tenure practices, the unequal control of household resources, and the gendered division of labour. Far from being simply intrinsic to Anga culture, these impediments also relate to the gendered history of the colonial goldfields and to contemporary national law and company practice in the extractive sector. Similarly, they are neither unambiguous nor resistant to change. Indeed, since the Anga first entered the mines their women have engaged in resource extraction in ever increasing numbers, both independently and alongside male relatives and partners. Through an analysis of this historical trend, my paper will show that historically conscious ethnography can help specify not only the main obstacles women face in entering artisanal and small-scale mining (ASM), but also the conditions that lead to their strengthening or weakening through time, thus identifying factors to be stimulated or countered in policies and strategies for equitable development within the sector.

INTRODUCTION

The mineral price boom of the late 1970s and early '80s led to the opening of new mining ventures in many previously isolated and marginal areas of the Asia-Pacific. As these locales had been traditional foci of ethnographic research, regional anthropologists became increasingly preoccupied with the dynamics of resource extraction and its implications for indigenous lifeworlds (Ballard & Banks 2003). In Papua New Guinea, where law requires environmental and social assessment studies to be conducted for all proposed large-scale mining developments, this type of research was given additional momentum by consultancy opportunities both within the industry and for donors and advocacy groups with a stake in the sector. As a result, the past two decades have witnessed the development of a very rich 'anthropology of PNG mining' (for a few examples see Banks 2000; Filer 1990, 1997; Hyndman 1994; Haley 1996; Hirsch 2001; Howard 1991; Kirsch 2002; Macintyre & Foale 2004; Rumsey & Weiner 2004; Toft 1997).

Besides a few isolated cases (Biersack 1997, 1999; Clark 1993), however, PNG anthropologists have focussed exclusively on large-scale extraction, so that little ethnographic insight exists on the country's largely indigenous artisanal and small-scale mining sector (ASM).¹ Indeed, even after the Mount Kare gold rush brought it to international attention (Hancock 1994), commentaries within the discipline have remained so few that anthropological audiences could be forgiven for ignoring the very existence of an ASM sector in Papua New Guinea.

And yet, even conservative estimates suggest that at least 60,000 Papua New Guineans - or around 1.25% of the country's entire population - are already directly engaged in this type of production, with an additional 420,000 of them dependent on it in some way for their livelihoods (Susapu & Crispin 2001; Crispin 2004; Lole 2005; MMSD 2002). Despite their low level of financial and technological capital, these miners extract an estimated 150 million kina of gold and silver per annum, equivalent to around 1.4% of the national GDP (Susapu and Crispin 2001). And if these statistics were not already sufficiently impressive, all economic indicators suggest that the PNG ASM sector is not only here to stay, but to grow significantly in the near future.

In recognition of its mounting importance and in tune with a global trend towards its revaluation and valorisation, the PNG government,² international donors,³ and private interests⁴ launched a range of recent initiatives to promote ASM through scientific research, financial assistance, and technical support (Banks 2001; Lole 2005; MMSD 2002; Susapu and Crispin 2001). Far from being aimed at increasing mining production per se, these efforts stem from the recognition that, if properly stimulated, harnessed and regulated, ASM could become a positive force for 'sustainable and equitable development', particularly in the most deprived rural areas of Papua New Guinea (for amore detailed outline of the development potentials of ASM see Blowers 1983; Crispin 2003, 2004; Lole 2005; Hinton, Veiga and Beinhoff 2003; MMSD 2002; Stewart 1987, 1989, 1997; Susapu and Crispin 2001).

In PNG, artisanal and small-scale miners operate in a great variety of geo-historical settings, from the wintry heights of Mount Kare to the lush meanders of the Sepik, from historically marginal areas to regions of long colonial experience, and from new mining frontiers to established sites of large and small-scale resource extraction. In addition, they exploit deposits that differ dramatically in nature, dimensions, ease of reach, and average ore grade and fineness through techniques as diverse as sluicing, dredging and tunnelling by means of anything from shovels and pans to water pumps, portable floating dredges, and hydraulic excavators. Similarly, they bring an astonishing spectrum of 'traditional' political forms, cosmological outlooks, gender ideologies, kinship practices, landownership systems, subsistence strategies and modes of ritual exchange to bear on how they regulate access to mineral deposits, understand the environmental and health and safety risks connected to resource extraction, assess the viability and durability of their enterprises, and organise the production, distribution, and consumption of their mineral resources.

In turn, this high degree of historical, geographic, geological, economic, technological and cultural diversity means that a detailed understanding of how ASM is organised and unfolds in particular locales is crucial to the development of effective strategies and policies for greater sustainability within this growing national sector. One way to obtain these kinds of data could involve the creation of networks and common frameworks with which to consolidate information that is already held by stakeholders active in the sector and to capitalise on their ability to generate fresh knowledge during their routine activities. In addition to this, though, it is also necessary to encourage more anthropologists and other social scientists to contribute their expertise to this realm of inquiry, particularly through independent and long term research on the ground.

In the course of this paper, I will draw on my own fieldwork experience in the Mount Kaindi area of Papua New Guinea to offer a localised case study of one of the central concerns over the 'equitability' of the national ASM sector; namely the degree to which women are able to participate in it and to benefit from the revenues it generates. By means of both historical and ethnographic evidence, I will show that local women face serious obstacles to full participation in mining, including a variety of cultural factors such as pollution beliefs, land tenure practices, the unequal control of household resources, and the gendered division of labour. Far from being simply intrinsic to indigenous culture, however, I will argue that the current male dominance of Kaindi's mining landscape also related to the gendered history of the colonial goldfields and to contemporary national and international law and employment practice in the formal extractive sector. Similarly, I will suggest that local understandings of the roles women should or should not hold in mining are neither homogeneous and unambiguous, nor resistant to change.

To conclude, I will present a short life history of a Hamtai woman who, thanks to the support of two local small mining companies, was able to obtain control of and operate her own mining tribute (see note 5). This specific case study will provide a summary and a clear illustration of the main issues debated in the various sections of the paper, and will offer a concrete demonstration of how women could benefit from enhanced freedom to take an active and independent role in the ASM sector.

KAINDI AND THE MOROBE GOLDFIELDS

The first alluvial gold find in the Bulolo District occurred at Koranga in 1921. Five years later, when a much bigger discovery was made in the Edie Creek area of Mount Kaindi, hundreds of white miners and thousands of indentured labourers rushed to the region. Within a few years, the 'easy' deposits had been worked out and many independent miners left to prospect further afield, so that larger syndicates and companies like Guinea Gold No Liability, Day Dawn Ltd, Bulolo Gold Dredging (BGD, a subsidiary of the Canadian Placer Development Limited), and New Guinea Goldfield (NGG, a subsidiary of the Russo-Asiatic Consolidated) were left to dominate the Morobe extractive scene.

The Japanese invasion of New Guinea during World War II brought a sudden halt to the development of the goldfields. At the end of the conflict, large-scale mining was swiftly resumed, but production never regained pre-war levels. By the 1960s, BGD closed all its dredging operations and in the following decade NGG - the main employer in the Wau side of the goldfields - followed suit and wound down its activities, which came to a complete halt by the early 1990s. In the years before and after Independence (1975), most expatriate residents abandoned the district, which began to suffer from unemployment and a general decline in the economy, public and private services, and law and order. As economic conditions worsened, mineral prices rose, and mining legislation and controls were considerably relaxed, a growing number of district residents (of both autochthonous and migrant origins) took up artisanal and small-scale gold mining as a commercial or subsistence activity.

This process of renaissance and 'indigenisation' of the Morobe ASM industry began in the 1950s when the first PNG miners started to operate independently of Europeans. By the late 1970s, native producers accounted for over 80% of the goldfields' alluvial gold production and 45% of

its overall output, and in the following decades ASM overtook large-scale mining as the main motor of the district's economy. Today, an estimated 75% of Wau's population, including women and children, are believed to engage in mining at one time or another of their productive life.

Furthermore, even though the imminent opening of a local large-scale extractive project by Morobe Consolidated Goldfields (MCG) will offer alternative sources of employment, income, and services to both urban and rural residents, ASM is likely to remain a crucial component of the future economic and social landscape of the District (Blowers 2000; Bulolo District Administration 2003; Burton 2001; Crispin 2004; Jackson 2003; Lole 2005; Lowenstein 1982; Sinclair 1998; Susapu and Crispin 2001; Tjamei 1994; Wangu 1995).

In the summer of 2001 and between April 2004 and January 2005, I undertook fieldwork in the Mount Kaindi area of the Morobe goldfields. Located to the south of the Wau Valley, between the headwaters of the Upper Watut and the Bulolo Rivers, Mount Kaindi rises to a height of 2,500 metres above sea level, but most local mining operations are found between 1,000 and 2,300 metres of altitude and cluster around the Edie Creek Basin. A steep and narrow road links this area to the district townships of Wau and Bulolo, which are in turn connected to the coastal city of Lae, the second largest urban centre in Papua New Guinea. Because of its cold and humid climate and of tribal warfare, Mount Kaindi had not been permanently settled in pre-contact times, although the Anga and Biangai peoples of the neighbouring Upper Watut and Wau-Bulolo Valleys visited it regularly for hunting, gathering, trade, and ritual purposes (Gressitt & Nadkarni 1978; Tjamei 1994; Lowenstein 1982; Plane 1967).

At the height of the pre-war mining era, Edie Creek became home to hundreds of expatriates and over a thousand native labourers who worked individual claims or in the sluicing and underground operations of the larger companies. Today, the area is occupied by over two thousand people scattered in a myriad of settlements of between just one to over forty households, who live from alluvial and hard-rock mining supplemented by small trade and a limited degree of subsistence agriculture.

Although this 'community' includes recent and long term migrants from all areas of Papua New Guinea, the majority of residents and the focus of my ethnographic study are speakers of the Hamtai and Menya languages of the Anga linguistic family, who started to accrue to the mines in the immediate post-war years, first from the Upper Watut and Aseki areas of the Bulolo District, and then from the Menyamya District of Morobe Province and the Kaintiba Sub-District of the Gulf Province of Papua.

In the late 1950s, the first Anga migrants (mostly former NGG employees and tributers⁵) began to work independently of whites and a decade later some gained ownership of both old and newly created mining leases. In some cases, these pioneers won considerable fortunes that they reinvested in mining, housing and commercial properties and alternative businesses in and beyond the Bulolo District. Almost invariably, however, lack of education, poor finance and management skills, reliance on dishonest expatriate and national managers, social pressure and family politics led to the collapse of these mechanised operations and the alternative businesses they had generated. As these early fortunes were won and lost, more Anga and PNG migrants

were attracted to Kaindi to find their own ground or work as labourers and tributers for established white and indigenous leaseholders and for NGG. For reasons already mentioned above, this process accelerated significantly in the past two decades, with the Edie Creek population more than doubling between 1980 and 1990, and nearly tripling again between then and 2000(6) (National Population Censuses 1980; 1990; 2000).

At the time of fieldwork, many official leases remained in the hands of the early Anga pioneers, or their descendants, who employed family members and considerable numbers of non-related Anga and non-Anga people as labourers and tributers. The majority of indigenous miners, however, operated on 'customary land' that had never been officially registered for mining development. Despite the relatively common usage of water pumps, only one indigenous operation was sufficiently mechanised to warrant the title of 'small-scale'. Another small-mining enterprise belonged to an Australian expatriate, while a larger venture called Edie Creek Mining Company (ECM), which had inherited some of NGG's leases in the early 1990s, was owned 51% by an Australian expatriate and 49% by two local landowners associations, the Kukukuku Development Corporation and the Biangai Development Corporation (see Neale 1995). All other mining, whether alluvial or hard-rock, was conducted by means of gravity-powered water and very simple tools such as crowbars, spades, shovels, hammers, panning dishes, wooden and metal sluice boxes, and mortar and pestle.

THE 'GENDERED MORPHOLOGY' OF KAINDI'S EXTRACTIVE LANDSCAPE

Transformations of Angan Tradition

Even the briefest visit to Kaindi would reveal that while women make up nearly half (44.56% according to the 2000 National Census) of the population, most local mining is conducted by men. As I discovered, mining is universally viewed as a dangerous and physically demanding activity, and those women who engage in it often described their involvement as a matter of need rather than choice. Nevertheless, this limited female participation in mining is not just a matter of personal preference but also the outcome of men's nearly complete domination of this contemporary sphere of production and social reproduction.⁹

In accordance with established principles of landownership, almost all registered mining leases, tributary rights and customary land in Kaindi are held by men and transmitted patrilineally. Of course, as was the case in 'traditional' Anga culture, this patrilineal ideology is not always strictly observed, and in practice women do hold certain secondary rights to the land and resources of their kin and affines (cf. Bonnemère & Lemonnier 1992 and Burton 2001). Nevertheless, even these secondary rights are for the most part claimed and exercised, not by the women themselves, but by their spouses and male relations.

Apart from ensuring an almost complete male monopoly over the land, which constitutes the most crucial 'means of production' in indigenous ASM, historical indigenous models of gender limit even women's capacity to participate in the sector as 'labourers'. Like all other Anga peoples (see Bamford 1997; Bonnemère 1996; Bonnemère and Lemonnier 1992; Godelier 1986; Herdt 1981, 1987; and Mimica 1981), the Hamtai and Menya followed a markedly gendered division of labour. While men took care of 'heavy duties' like felling trees and clearing and fencing agricultural plots, women undertook most day-to-day gardening chores such as weeding and the

planting and harvesting of subsistence crops. Similarly, the hunting of large game, which used to have great ritual significance, was an exclusively male prerogative and women were confined to catching less 'valued' preys such as insects, frogs, rats, and lizards. Furthermore, men planted, owned, and tended the most valued forest and garden trees, like pandanus or areca nut trees, whereas women only helped in their harvesting and collected other forest produce like mushrooms, moss, ferns, and fruits.

Women, on the other hand, were largely responsible for the rearing of pigs (a prized but relatively minor activity for the Anga compared to other Highlands peoples) and for everyday household chores like child minding, cooking and the collection of water and firewood. Far from being confined to adulthood, this gendered mode of production formed an essential part of every child's socialisation, and girls as young as three were expected to follow their mothers and help them around the house and the garden, while boys were largely left free to play among themselves until they turned nine or ten, at which point they would begin to engage and be instructed in archery, hunting, and other masculine endeavours (cf. Bamford 1997: 63-4).

In present-day Kaindi, women carry all the roles that 'traditionally' pertained to their gender. In addition, heavy male involvement in mining has actually augmented their daily workload, obliging them to take on even those tasks that traditionally fell onto men, such as the felling of trees and clearing of gardens (cf. MMSD 2002). Furthermore, as Kaindi was settled because of mining rather than for its climate or the fertility of its soils, most mining settlements are located close to workings but far from cultivable land, clean water supplies or sources of firewood and natural building materials, and population pressure has led to indiscriminate clearing of forests, loss of subsistence resources and pollution of water and land. As a result, local women have to walk considerable distances on a daily basis to wash pots and clothes, collect drinking and cooking water, and garden or gather fuel and forest foods, and their subsistence activities are made more difficult by harsher climates and often poor soils.

Coupled with their duties of child care, this effectively means that women are left with very little time to engage in gold mining, and that when they manage to do so they are forced to take even extremely young children along to the mines (cf. Crispin 2004; also see Hinton, Veiga and Beinhoff 2003 for similar situations in Africa and Latin America). In addition, as girls are expected to help their mothers in their daily domestic and gardening chores from a very early age, they tend to gain lesser practical experience of mining than boys, who are also more likely to receive informal training in prospecting and mining techniques from their fathers and other male relatives.

Far from being simply a question of skill acquisition, however, this differential involvement in gold extraction has deep implications for how men and women come to relate to the land and the spiritual cosmos and for what could be labelled 'the mystical ecology and economy of indigenous mining'. So, for example, the Anga of Kaindi believe that avoiding mining accidents, locating new ores, and winning gold from known deposits depend on the goodwill of the ancestral and nature spirits (*hikoāpa* or *masalai*) that guard the land and its riches. Although some people possess magic and ritual means to communicate with the *hikoāpa*, it is mostly through dreams (*wata*) that the spirits provide counsel and guidance to the miners.

Overall, women are reported as, and report, experiencing far fewer 'gold dreams' than men. One of the reasons commonly given for this difference is that the masalai only 'love' and 'help' those they 'know'. Thus whether male or female, a newcomer to the mines will not receive many or any 'gold dreams' until, after weeks or months of living and mining in a specific area, s/he will have won the trust of the local nature spirits.

According to this same logic, women receive fewer gold dreams because, as many an informant put it, 'if you hunt you'll have dreams about hunting, if you garden you'll have dreams about gardening, and if you mine you'll get dreams about gold'. Being less involved in mining due to competing responsibilities, women are thus held unable to develop as close a relationship to the spirits of the mines as their male counterparts. In turn, this results in a widespread belief that they should leave all mineral extraction to the men who, thanks to their deeper spiritual connection to the gold, can mine it more productively and with lesser risk to the masalai, the environment, and themselves.

Apart from this singular catch-22, the Anga women of Kaindi face other cultural barriers to full participation in the ASM sector. As was the case for the wider Anga region (see, for instance, Bonnemère 1996: 184-5, 189, 191; Herdt 1981: 84), pollution beliefs and specific ideas regarding male and female physiology were intrinsic to the gendered division of labour of Hamtai and Menya society. Today, most miners of Kaindi maintain that women are inherently dangerous beings whose presence (particularly around and during menstruation times) in the mines can pollute the gold and anger the hikoäpa (cf. Biersack 1999; Clark 1993; Ryan 1991: 52; Hinton, Veiga and Beinhoff 2003; MMSD 2002). So strong is this belief that even male miners who have frequent sexual relations with women are considered less likely to find gold and to be at greater risk from mining accidents. In part, this is said to be because sex temporarily pollutes male bodies, making them as 'Offensive' to the spirits of the gold as those of women. However, there is another reason why too much contact with women should be avoided.

As appears to have been the case in pre-modern times and to be true to this day in nonindustrial societies (Eliade 1978 [1956]), the miners of Kaindi conceptualise their rapport with the spirits of the mines in highly sexualised terms. Thus in many gold dreams I recorded the hikoapa appear as (often white) women who offer 'marriage' or sex to the miners. More generally, the miners hold that 'Gold is like a woman, and it wants a man, a husband, to work it'. So engrained is this logic that men often referred to the spirits of the gold with whom they had regular oneiric intercourse (literally and figuratively) as their 'wives'. Even more interestingly, their actual spouses seemed to do just the same, as I first discovered when, in the course of an interview, a woman matter-of-factly asserted:

'My husband has a first wife, another woman, a white woman. She lives in my husband's workplace... she was with him before I married him. She's his first wife. I, who am the real woman, I am only his second wife'.

In Kaindi, however, the spectre of jealousy applies as much to the partly spiritual as the purely flesh-and-blood triangle, and many miners believe that the female spirits of the gold, who are just as capable of jealousy as of love, will withhold their bounty from those who 'betray them' by marrying, sleeping and having children with other women (which, as my informants pointedly

highlighted, explains not only why womanisers never remain rich for long, but also why younger men, who have few if any wives and children, always appear to get more gold from their labours than older, and thus more experienced but physically weaker, colleagues ever do).

Now, whether this is justified in terms of their polluting physiology, or because they're not sufficiently close to the masalai, or again because they can make these spirits angry with jealousy, the fact remains that most Anga men proclaim that 'if you let women mine, the gold will disappear from your land, or landslides will cover and kill you', and on this basis attempt to keep women away from their workings. Moreover, as men control not only the public sphere of politics (all community leaders and local politicians are male) and institutional representation (women are scarcely represented in official and unofficial landowners associations, miners associations, and government institutions like local administrations, the police, or the local courts), but also decision making within the household, even when they manage to engage in mining and obtain their share of gold, women find it hard to hold-on to it and are often forced to hand it over to their male relations or reinvest it in accordance to the latter's interests and wishes (cf. Crispin 2004). In turn, this means, that women have less of an incentive than men to mine. They will often be unable to benefit directly from it. They will also find it harder than the men to acquire and maintain tools like metal bars, dishes, boxes, shovels, or to procure mercury or water pumps. Without these they will be unable to mine, or at least to mine as productively as their male counterparts.

The patriarchal legacies of the colonial gold fields

Far from being simply the product of 'traditional' Anga culture, however, the gender inequalities of Kaindi's extractive landscape also reflect the peculiar history of colonial development of the Morobe goldfields and the Western 'mining culture' that continues to dominate the legislative system of Papua New Guinea.

When the goldfields were opened in the 1920s, the Australian Administration decided that only married women would be allowed to join in the gold rush. On the one hand, this was justified in terms of protecting 'the weaker sex' from the harsh living conditions of the frontier, the risk of attack by hostile local populations, and from sexual violence by indentured labourers (a recurrent obsession of the PNG colonist). On the other hand, however, the move was prompted by a logic not very dissimilar to that reported above for the Anga, that is that loose single women and 'prostitutes' would 'exploit' (pollute?) the miners, draining them of their will to work and relieving them of their hard earned gold (see, for instance, Demaitre 1936; Roberts 1996: 55).

What is more, even married women faced considerable resistance when attempting to enter the goldfields. In her highly entertaining 'Mountains, Gold and Cannibals' (1929: 1), for instance, Doris Booth recounts how, on her attempt to leave New Britain for the fields:

...the Government secretary at Rabaul told me that a woman could not hope to reach the locality. The country was inhospitable, he said, and the natives were hostile - even cannibals. On no account, he concluded in his best administrative tone, would he issue me a miner's right.

Even though she applied to travel with her husband, Doris had to be smuggled to Morobe in a private schooner. When she reached Salamaua, those prospectors who had already flocked to the

area welcomed her with such charming words as, 'if you were my wife, I would club you before I let you go!' (ibid: 36). Eventually, Mrs Booth prevailed and was issued a miner's permit. A trained nurse, she then settled near Wau and, as she ironically points out in her memoirs, was later awarded a MBE for saving the lives of many a (male) miner during the worst dysentery epidemic of the Morobe goldfields by that very Administration that had tried so hard to keep her from ever entering them.

Of course, the very fact that Mrs Booth made it there indicates that the goldfields were not wholly female-free zones. From the very early stages, women became miners to follow their husbands or became wives in order to join in the gold rush, and Edie Creek itself came to have its long-term female residents (Clune 1951: 52; Roberts 1996; Sinclair 1998). Having said this, even decades after their opening, the European women of the goldfields remained few in numbers and continued to be largely confined to domestic and 'ancillary' roles rather than being directly involved in resource extraction (cf. Roberts 1996; Sinclair 1998; also see Demaitre 1936 and Struben 1961).

Far from having escaped the attention of the first Anga indentured labourers, this reality fed into and strengthened their own cultural understanding that women and gold should not mix. As a matter of fact, the patriarchal structuring of the colonial goldfields continues to be evoked by indigenous miners to justify the exclusion of their female folk from mining as I realised after hearing young and old men alike explain time after time,

...If I am present, I don't let any woman mine (on my land). According to our custom, women stay in the house and look after the children and cook food for their husbands and nothing more. And when the white men came here to mine they followed the same law, they didn't let their women into the mines, oh no! Women were not allowed in the mines, they had to stay in the white men's houses, and that was that.

In addition to confirming and reinforcing autochthonous prejudice the indentured labour system, mining laws, and 'macho' culture of the pre-Independence Morobe goldfields ensured that indigenous men became involved in resource extraction in much greater numbers and long before indigenous women, who in most cases remained in the villages to meet the subsistence needs of their communities.¹⁰ Even when they did make it to the mines, they were very rarely employed as workers or tributers by European miners, syndicates, or the larger companies (Healy 1967, 1968; Kuluah 1983; Sinclair 1998). As a result, indigenous males found themselves better placed than their womenfolk to learn Pidgin and 'the ways of the white men', gain mining skills, develop contacts within the industry and, once Papua New Guineans were permitted to work independently and the expatriate miners started to leave, to obtain miner IDs and take over abandoned or newly registered mining leases.

Instead of redressing these historical inequalities, successive reviews of mining law and practice since Independence have only succeeded in ensuring their continuity. According to the latest incarnation of the PNG Mining (Safety) Act (Chapter 195A, Part III, Division 3, Clause 23), no women are to be employed in underground workings and, more crucially, female workers can be employed in any type of mining operation only if (a) they are over 16 years of age (which also

holds true of men) and (b) they are engaged in exclusively clerical or technical duties, or (c) they work a tenement of which they are the holders. Because of these limitations, women have fewer legal employment opportunities than men within the large-scale extractive sector. In turn, this means that they are at a relative disadvantage in terms of earning potential, exposure to mining-related health and safety practices, and the acquisition of technical skills that could be transferred to ASM.

Today, as in the past, the gendered organisation of large-scale foreign companies continues to influence Anga understandings of who should and should not be allowed in the mines. Indeed, when arguing with me, among themselves, and with their women about why men alone should be allowed to mine, my male informants would often point out that all mining staff at Morobe Consolidated Goldfields are men, and that women are hired by the company only as caterers or office workers. This, they would argue, was clear confirmation that the Europeans knew as well as they did that allowing women into the mines makes gold scarce and angers the masalai into causing landslides and other potentially fatal accidents.

By stating that women can mine only in a tenement over which they hold title, the Mining (Safety) Act also hinders women's chances of being legally and independently involved in artisanal and small-scale mining. One way women can circumvent this is to become the 'tributers' of a company or an established leaseholder. Under this system, a woman could mine alluvial deposits within the company or individual lease and pay a share of the gold she extracts to her employer. Under the old mining legislation, tributers had to be taken on because claims and leases had to be continuously worked and manned by a minimum number of workers in order to be retained (Weston 1978). With the new Mining Act, however, this requirement ceased to exist and now both companies and individual leaseholders have neither the obligation nor the incentive to hire new tributers or retain old ones (cf. Lole 2005). As a result, women have even fewer opportunities than in the past to work for the larger companies and, at least in Kaindi, those who operate as tributers under individual leaseholders tend to do so informally and thus, not being officially registered, illegally.

Of course, women could always apply for registered tenements from the government. However, their chances of acquiring such titles are, to say the least, very remote. As already mentioned, in Kaindi men have a firm stranglehold on ASM, are better placed to gain employment in the large-scale extractive sector, and dominate all spheres of public and private decision-making. As a result, women are less likely to receive formal education, to acquire technical and practical skills related to mining, and to accumulate savings. In turn, these factors make it harder for them to cope with the paperwork required for applications, to pay the necessary registration fees, and to demonstrate to the relevant authorities that they possess the knowledge and the capital to exploit the proposed lease. Finally, even if a woman were to surmount all these obstacles to obtain her own mining title, the customary Anga principle of patrilineal inheritance would mean that, at the next generation, the lease would in any case pass to the woman's son, brother, or other male relative. And here we come to the last issue with current PNG mining law.

According to the last Mining Act (1992, Part II, Clause 9.2), any natural person who is a citizen of Papua New Guinea, including women, can engage in the non-mechanised alluvial mining¹² of an area of which s/he's the owner without having to register it as an Alluvial Mining Lease.

Ostensibly, this provision was introduced to widen and legalise indigenous participation in the ASM industry by enabling 'customary landowners' to mine their land without the need for expensive and complicated paperwork. In practice, however, the new law widens participation only in so far as this is permitted by the customary system of landownership of each particular PNG community and leaves all PNG women who desire to mine, but live under patrilineal regimes of social organisation and of land tenure, just as dependent on their male kin and as disempowered as they were before it was introduced.

The expansion of female involvement in ASM

From what has just been written, it is clear that while 'traditional' indigenous sociality and culture do pose some obstacles to female participation in ASM, sectoral gender inequalities are also connected to events that unfolded in the colonial past and to current mining law and practice. In addition, if indigenous beliefs and cultural attitudes to gender and mining are not to be essentialized and misrepresented, it is important to observe that they are neither unambiguous and unopposed, nor resistant to change.

To begin with, although some women appeared to agree that females should limit their activities to rearing children, cooking and looking after the household and growing and selling garden produce; or that being like a woman gold gives itself more freely to men than women; or again that the presence of one of them makes a mine barren and dangerous, many others maintained that these were only 'lies' (tok giaman) the men used to keep all 'important' activities and valuable things, including mining and gold, to themselves.

In particular, some of my female informants vigorously denied that the spirits of the gold are more attracted to one or the other gender. Instead, they argued that all that matters to the hikoāpa is whether a miner makes good use of the gold s/he gets or if s/he spends it on bad things (pasin nogut) like alcohol, promiscuous sex or gambling, sometimes commenting further that, as men are more likely than they are to engage in such types of behaviour, they actually make better and more productive miners than their male counterparts. On the other hand, certain women did not altogether reject the gendered nature of the gold but reasoned that its guardian spirits can be either women or men, and that as such they can be partial to either male or female miners, according to each particular case. So, for example, when I was working with a mixed group of alluvial miners, a young woman stood up after panning her gold dish and called out to me. When I approached her, she excitedly pointed to three shiny gold specimens in her dish and said:

...Look! My husband came here to work yesterday. He dug this same spot and got nothing. But look here, look at what I found! This gold must be a man, and he only wants women to marry him. You see, sometimes the boss of the gold is a woman, and she loves only men. She wants to marry them, so she gives them gold. But other times it is a man, and he wants to marry a woman. If a man tries to get his gold, he'll get nothing and will walk away empty-handed. But if it's a woman who digs, she'll find gold... he'll give it to her.

In other cases, while women assented that they should ideally refrain from ASM, they then added that, as these days many husbands, fathers, and brothers waste all their money on drinking, gambling, and prostitution and fail to adequately provide for their wives, children, and sisters, women are left with no alternative but to become miners. They further concluded that men 'should bear this shame in silence' instead of attempting to prevent them from doing whatever they can to meet their own and their children's needs.

As well as being resisted and subverted by women, the idea that gold is totally averse to females and that women should have no role whatsoever in mining falls short of universal and unambiguous currency even among the men. To begin with, all men accept that women are perfectly capable of receiving 'gold dreams' from the hikoāpa, and even that some of them, usually referred to as the 'good women' (āpaqa qeta ti or āpaqa kayata ti) or those who have 'good blood' (hinge ä kayata ti), obtain more of these Omens' and thus potentially more gold than the average male miner. In addition, some women were widely believed to possess the power to attract gold to themselves and their land or to make other mines barren, either because of their 'good blood', or because they are seers (hingo wa'anga) with secret means (p 'mapane 'a or pä'ä) of contacting and binding the masalai, or because they hold the destructive power of witchcraft (phānga).

As is the case among women, moreover, some Anga men questioned the belief that one's gender has any direct bearing on one's ability as a miner. Instead, they argued that what truly matters is whether one lives according to the teachings of the Bible and spends one's gold in a considerate way or, more rarely, that minerals are just inert things that are simply found and exploited with skills and sheer luck. What is more, whilst the majority of men maintained that women should ideally stay out of mining, many of them had (like a prominent local leaseholder who, observing a group of women mine close to his lease, commented with resignation, 'What they are doing is bad, but how are we to stop them?') grown to accept that from the late 1970s and 1980s things had changed too much to ever return to the complete exclusion of women from mining. Asked what had contributed to this alleged increase in female participation in ASM over the past two decades (which unfortunately I found no reliable archival sources to either confirm or dismiss), my informants repeatedly mentioned a number of concomitant factors.

For a start, at Independence Papua New Guinea enshrined the goal of gender equity in its national law and Constitution, and prominent national and local figures and politicians gave public support to the rights of female citizens to participate fully and equally in the economic, political, and social life of the country. As seen in relation to mining legislation, these discourses did not result in the complete eradication of established patterns of discrimination. Nevertheless, many Kaindi women felt that they had served to make people aware that women too had 'rights' and had encouraged them to gradually challenge men's exclusive monopoly on mining.

Of course, this process was also facilitated by a series of other modern developments, including the abandonment of Anga male initiation, the incorporation of men and women in a relatively more equal ritual community under the aegis of Christianity, relatively greater access to education for both genders, the weakening of pollution beliefs, and the collapse of parental control over marriage. As has been the case in other Anga areas, this combination of factors has led to a

greater level of 'equality' between the genders than was 'traditionally' the case (see, for instance, Godelier 1986: 220-24; and Herdt 1987: 210).

According to many male and female informants, moreover, these processes had a 'snowball effect'. When the first younger, post-independence Anga and non-Anga women began, often with the open or at least muted consent of their young husbands and male relations, to break established taboos to directly engage in gold mining, they served as an example to others, encouraging greater and greater numbers of women to follow in their steps.

A second important boost to female engagement in ASM was given by the process of deregulation of the sector of the late 1980s and 1990s. Before those changes took place, only the holders of a miner's ID were allowed to mine and to legally sell gold. As the vast majority of permit holders were male, women had little incentive to mine independently because they were effectively unable to sell any gold without passing through their husbands, kinsmen, or male employers, who would more often than not retain all profits for themselves.

Today, on the other hand, miner IDs no longer exist and intra-national gold transactions are fully deregulated. Consequently, women have a greater incentive to mine because they can retain a greater portion of what they get, either by mining in secret or on unclaimed land. If they have to work with a husband or male relative or for a leaseholder who will appropriate most of their declared finds, they can hide part of the gold they produce to sell of their own accord either locally or in Wau and Bulolo.

In addition to offering women an incentive to mine the recent relaxation of mining legislation and regulations and the progressive decrease in the levels of supervision and control of local mining operations by Department of Mines (DOM) officials made it easier for new migrants to move to Kaindi to open virgin land or to squat on existing leases and 'customary holdings'. As international mineral prices rose in the face of the worsening or stagnating economic conditions of the Bulolo District and wider Papua New Guinea, ASM became an increasingly attractive proposition to both the urban unemployed and migrants from areas with few cash earning opportunities and/or growing land pressure (precisely like the Menyamya District and the Kerema Sub-District of the Gulf [see Hanson et al. 2001]). In turn, this led to massive levels of immigration which, as mentioned in the opening overview of the Kaindi area, resulted in a manifold increase in the number of people living and working there.

As had happened in the original gold rush of the 1920s, however, local deposits amenable to exploitation by simple tools proved insufficient to comfortably sustain such a large number of people and the miners of Kaindi found themselves competing more and more intensely for limited resources.¹³ In turn, this meant that many found it difficult to provide for themselves and their families without some occasional or full time help from their wives or female relatives, and so the historical reluctance of Anga men to allow their women to mine was gradually eroded by sheer economic necessity.

But if more women became directly involved in gold mining as a result of their men no longer being able to provide for them and their children by themselves, many others were forced to do so because their partners refused to contribute to the running of the household and spent their earnings on beer, gambling, and prostitution. As well as being recognised by the women, who, as

related above, use it to justify their participation in ASM, this reality is also fully acknowledged by the men. Indeed, on many an occasion I was told by some leaseholder or other that, although women should not be allowed to enter the mines but should stay in the house or the gardens, he allowed some to work on his land because he knew that their husbands, fathers or brothers didn't 'look after them well' and felt too sorry to chase them away.

YAMIYAE'S STORY - AN EXAMPLE OF HOW WOMEN CAN BENEFIT FROM GREATER GENDER EQUALITY IN THE ASM SECTOR

As we have seen in the course of this paper, free female participation in Kaindi's ASM sector is held back by a number of obstacles. To begin with, the 'customary' division of labour and heavy male involvement in resource extraction leaves women with little time to engage in this crucial form of production. What is more, due to 'customary' patrilineal modes of land tenure, beliefs about female pollution and the sexualised nature of mining, and of their historical domination of public and domestic decision-making, Anga males maintain a high degree of control over both access to mineral deposits and the distribution and consumption of gold earnings.

As a result, women are disadvantaged in terms of their ability to access formal education, to gain practical experience of mining techniques, to benefit from mining-related educational aids such as manuals or booklets, to obtain financing from commercial institutions, to acquire mining tools or fuels, or to meet fees for the registration of official mining titles. Far from being simply the product of 'traditional' Anga culture and sociality, however, the overwhelmingly male profile of Kaindi's ASM landscape is also a historical accretion of, among others, the indenture system and the patriarchal culture of mining that shaped the colonial development of the Morobe Goldfields, and which continues to be perpetuated by the gender bias of PNG and international mining legislation and practice.

And yet, greater freedom to participate in ASM and increased control over mining land and the fruits of their extractive labour could prove extremely beneficial to the women of Kaindi. This was indeed the case, for example, for an old Hamtai-Anga woman whose life history I collected over a series of brief encounters and long interviews. Yamiyae, as I shall call her here, was born in the Aseki area of the Menyamya District. When she was still a young girl, she married a Hamtai man, with whom she had two children. A few years into the union, her husband abandoned her for another woman. Left without access to gardening land, Yamiyae went to live with relatives near Menyamya, where she met and married a Menya man whom I shall refer to as Luk.

From Menyamya, the two then moved to Kaindi, where one of Luk's parallel cousins worked for New Guinea Goldfield (NGG). Eventually, Luk became a NGG tributer and the couple had two children of their own. In 1990, however, Luk died in a tragic mining accident, leaving Yamiyae and her children from both marriages behind. After Luk's death, some of his relatives from the Bulolo District and Menyamya confronted Yamiyae, whom they accused of having caused his death with 'poison magic' or witchcraft. In a heated confrontation, the group burnt down the couple's house and took away or destroyed all of Luk's water pumps and mining tools. Indeed it was only thanks to the intervention of some relations of hers who resided in Kaindi that she wasn't killed that very night.

Although she received monetary compensation from NGG for the death of her husband, Yamiyae was forced to relinquish it to her in-laws. In addition to this, Luk's relatives attempted to take Yamiyae's tribute away from her on the basis that she was 'only a woman' and had no right to hold on to her husband's land. According to Yamiyae, however, NGG first and then Edie Creek Mining (ECM) 'stood by her side' and refused to transfer her tribute rights to her affines. In a very touching account, Yamiyae recounted how she had initially struggled to mine and to garden at the same time on her own. After a while, a woman from a nearby settlement of full-time agriculturalists started to give her food from her gardens, freeing Yamiyae to mine full time and accumulate enough resources to finance her children's primary and secondary education. In return, Yamiyae allowed the woman's family to work on her land when they needed money for store goods.

Similarly, Yamiyae received regular support and material help ranging from child minding to gifts of food or help in building houses and tool sheds from her neighbours and local relatives, whom she repaid by letting them work for her when they needed money to buy salt, soap, or other trade items. Finally, she succeeded in maintaining regular contact and positive relations with her relatives back in the Aseki area because, she was able to assist them with PMV15 fares when they came to visit her and to contribute to marriage and funerary payments and other important exchanges in her community of origins.

As this story clearly illustrates, Yamiyae's tribute arrangement with NGG/ECM and the support she received from these companies enabled her to retain control over both her labour and her mining income. Through these resources, she not only gained enough cash for her own and her children's sustenance, but managed to do something that normally only men are able to do, or at least to do to such an extent, that is to use her land as a bargaining tool and a means to win political and material support for herself and her children both in Kaindi and in her community of origins. As a result, this example also highlights the positive role that small, medium and large companies operating in the formal mining sectors can play in empowering female miners, and why it is important that they should be offered some form of incentive to hire, train and support more tributers and to ensure that a good percentage of them should be women.

In addition to this, though, encouraging greater female participation in the formal extractive sector could also serve an important role by offering a positive example to ASM communities. In Kaindi as in many other parts of Papua New Guinea and the developing world, indigenous artisanal and small-scale miners have long coexisted and continue to operate in close proximity with mechanised foreign operations. Through my discussion of the gendered colonial history of the Morobe goldfields, the logic behind current mining law and the employment practices of large-scale mining companies like MCG, and the ways in which the Anga miners of Kaindi look at these when ordering and discussing their own mining practices, I have attempted to demonstrate two simple facts: firstly, that indigenous miners are neither closed in their own 'cultural box' nor stupid; secondly, that they do not hold a monopoly on misogyny.

On this basis, I would suggest that in any well-meant attempt to preach to 'the native' how important it is to involve women. ASM will run the serious risk of being dismissed as hypocritical (or even malicious) for so long as Western mining companies continue to be seen by indigenous people to act precisely as if they too believed mining to be especially dangerous to

women and women for minerals. Of course, whether it will prove easier to dispel our own 'pollution beliefs' than those of 'the natives' is hard to predict, although the historical masculine bias of Western mining ideology and practice is very far from encouraging.

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NOTES

1. Although there is no universally accepted definition of ASM, I follow a combination of the common PNG (see Susapu and Crispin 2001) and the Mining, Minerals, and Sustainable Development Project's (MMSD 2002: 314) usage of the term. For the purpose of this paper, therefore, 'artisanal mining' indicates individual and household-based mining activities conducted almost exclusively by manual means, while 'small-scale mining' refers to more extensive and mechanised activities with a capital investment of up to \$25,000. In PNG, around 1% of ASM enterprises employ heavy machinery such as excavators, bulldozers, and high capacity processing equipment such as trammels and jigs; 10% use just hand-held mechanised equipment such as pontoon dredges, hydraulic sluice pumps and sluice boxes; and the rest are artisanal miners who rely entirely on very simple tools and earn an average of between K250 and K500 per month (Susapu and Crispin 2001 ; 8).
2. Particularly through the Department of Mines (DOM) (Susapu and Crispin 2001).
3. At present, these include the Australian Development Bank, AusAid, the EU, and Japan's Social Development Fund (Banks 2001; Susapu and Crispin 2001).
4. Such as Metals Refining Operations Ltd, PNG's sole private metal-refining company, and mining companies like Highlands Pacific, Tolukuma Gold Mine, and Porgera Joint Venture (Lole 2005; and Susapu and Crispin 2001).

5. As will be discussed more fully later on, a 'tributer' is the holder of a 'tribute agreement' with a company or other leaseholder whereby s/he is allowed to mine that company's or other leaseholder's tenement provided that the holder shall receive a portion or percentage of the minerals won by the tribute holder

6. This dramatic increase in the size of the Kaindi mining community mirrors a similar explosion of the national mining population from an estimated 3,500 in the 1980s, to well over 60,00 (and possibly up to 100,000) in the early 2000s (Lole 2005).

7. According to the new Mining Act (1992) this is perfectly legal as long as: a) the miners can demonstrate customary ownership of the land they work or an agreement with its customary owners; b) they limit themselves to the exploitation of alluvial deposits; and c) they use no mechanical mining equipment including water pumps. In relation to these clauses most operations I encountered were less than kosher as the customary ownership of the area is still hotly disputed between and within local Anga and Biangai communities, miners worked indiscriminately alluvial and lode deposits, and water pumps were used whenever they could be afforded or borrowed.

8. This is not to say that women are altogether absent from the ASM scene. On the contrary, females of all ages are found mining alluvial and vein gold alike, feeding gravel into sluice boxes, digging and crushing gold stones, and panning, amalgamating, and even retorting and selling the gold they extract. On average, however, women make up only a minority of mining teams, particularly in the case of hard-rock operations. In addition, the majority of female miners I met worked with their husbands, fathers, brothers or other male relatives, and only rarely were they mining independently or with all female relatives and companions.

9. In present-day Kaindi, it is impossible to obtain items of daily consumption like tinned meat and fish, salt, sugar, oil, soap, or clothes without cash. Similarly, money is essential in providing for education or medical treatment; purchasing tools and building materials like bush knives, axes, spades, gold dishes, corrugated iron, nails, cooking pots, or water pumps; and acquiring items of great personal status and business value like radios, beer or cars. Furthermore, as most ceremonial and social exchanges, from brideprice payments to church offerings, from gift giving during religious festivities to collections for marriage or funerary feasts now involve both cash and store-bought items, money has invaded all aspects of local sociality and has become an invaluable source of efficacy, power and prestige. Given its importance a cash-earning activity, it is then hardly surprising that the Anga men of Kaindi should have strived to extend established patterns of domination to include the new field of gold mining.

10. By drawing attention to the fact that the gender bias of the colonial indentured system meant that indigenous men were able to access mining well before their women; who were by and large left behind to meet the subsistence needs of their communities, I do not intend to devalue the importance of what women stayed back to do, nor to suggest that the mining labour of men was a crucial form of production and social reproduction, whereas the subsistence labour of women was not valued by their home communities and by the migrant workers themselves. On the contrary, as has been suggested by others (see; for example; Strathem 1988), the enduring subsistence efforts and the continuity ensured by indigenous women in the face of high levels of

male labour migration provided a valued form of stability that was essential to the survival of the economic, social, and cultural life of their local communities. In the context of this paper, therefore, the gender bias of the indentured system is highlighted simply as a contributing element to the present gender stratification of the Kaindi extractive sector.

11. This relative exclusion of women from employment opportunities in the formal mining sector is not confined to Morobe but is common throughout the PNG (for more detailed discussions and statistics about this see, amongst others, Macintyre 1993; 2002; PNG Department of Mining 2003; and Robinson 1996), and indeed even the global extractive industry (see; for instance; MMSD 2002: 205; and Hinton; Veiga and Beinhoff 2003).

12. That is the mining of 'all unconsolidated rock materials, transported and deposited by stream action or gravitational action, which are capable of being freely excavated without prior ripping or blasting' (Mining Act 1992, p.2) conducted 'by the use of hand tools and equipment but not by pumps nor machinery driven by electric, diesel, petrol or gas-powered motors' (ibid, p.3).

13. As is clear from my opening overview of the district's colonial and post-colonial history, Kaindi has already been the theatre of ASM extraction for some eighty years. According to my informants, the past two decades saw a relative drop in the miners' returns, partly due to the progressive depletion of some of the more profitable deposits amenable to small-scale and artisanal extraction, and partly as a result of immigration and a rapid increase in the number of people competing for local mineral resources. As far as I am aware, there are no precise estimates of the size and expected lifespan of remaining local reserves exploitable through ASM. Nevertheless, the ASM operations of Kaindi and the wider Bulolo District continue to provide significant and satisfactory amounts of gold (although they may be distributed among a larger number of miners) and are expected to remain 'viable' for a considerable time to come (Blowers 2000; and Bulolo District Administration 2003).

14. Indeed, far from being exclusive to Papua New Guinea, the concept that direct female involvement in large scale mining should be kept to a minimum is common in the legal frameworks of many other countries and is sustained by international conventions such as the ILO's 1919 Convention on Night Work and the 1935 Convention on Underground Work. This principle, however, is based on what have been recently found to be rather 'shaky' health grounds (MMSD 2002: 205) and has as its only effect that women are grossly under represented in the PNG and global LSM sector and are almost entirely confined to clerical, nursing, catering, human resources, education, and other ancillary jobs (MMSD 2002: 205). In turn, this at once limits their earning potential and economic independence, thus making them even more likely to engage in informal mining, and compromises their relative ability to acquire skills and finances transferable to the ASM sector (cf Hinton, Veiga and Beinhoff 2003), thus hindering their capacity to mine safely, productively and independently.

15. Public Motor Vehicles (PMV) is the designation used in PNG for buses, minibuses, pick-ups, trucks, or any other vehicles that offer transportation for a fee. In this particular instance, the PMVs in question were those connecting Aseki and Menyamya with Wau.

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