

Maroon Gold Miners and Mining Risks in the Suriname Amazon

Marieke Heemskerk

Participation in small-scale gold mining jeopardizes the health, economic security, and ecological resource base of Maroon gold miners and their families in Suriname, South America. Given these risks, why do increasing numbers of Maroons become gold miners? It is often argued that gold miners are unaware of the risks of mining, or that they are ruthless adventurers with a "strike-it-rich" mentality. These stereotypes are unfounded.

In recent decades, small-scale gold mining has gained importance both as a source of income for the poor and as a cause of environmental degradation in low-income countries. Gold mining and its surrounding service economy sustain millions of households in the Amazon, and governments able to regulate mining in their countries earn urgently needed revenues. Gold miners, however, also attract violent crime, spread disease, remove wildlife and forest cover, and release mercury into the river ecosystem. In light of widespread concern over its damage to forest peoples and resources, the forces driving the Amazon gold mining boom are not fully understood.

Since the mid-1980s, small-scale gold mining has boomed in the Suriname Amazon. National annual gold production has risen from a few kilograms per year in the early 1980s to about 10-15 tons of gold per year today. Almost all gold is extracted by small-scale gold miners--informal, manual, or mechanized miners who use rudimentary prospecting and extraction techniques. Mining officials estimate that between 10,000 and 20,000 small-scale gold miners are dispersed over approximately 20,000 square kilometers of Eastern Suriname.

Almost all Suriname gold miners are tribal people known as Maroons. The Maroons are descendants of escaped African slaves who established independent communities in the rainforest. In just two decades, the role of gold mining in the Maroon household economy has changed from being an occasional emergency activity to being the primary subsistence strategy. In contrast to the situation in many other Amazon countries where foreign or urban migrants dominate the mining industry, the Maroons have maintained control over gold mining in Suriname. Brazilian migrant miners, an estimated 75 percent of the mining population, often work for Maroons or else pay them fees for the right to mine on their territories.

Small-scale mining drives the Maroon economy, but also harms nearby communities. The wives, children, and other family members of Maroon miners who live in these communities suffer from a malaria epidemic,¹ the introduction of sexually transmitted diseases, and increased mercury levels in fish, one of their main sources of protein. Moreover, damage to the forest ecosystem may reduce future subsistence options, while uncertain mining incomes will probably not provide long-term economic security.

Research Site

Suriname is located north of Brazil, between Guyana and French Guiana. The country has a land area of 166,000 square kilometers. The small population of 409,000 primarily lives in the narrow coastal region. Only tribal groups of Amerindians (est. 10,000 people) and Maroons (est. 50,000 people) live in the forest, which covers about 80 percent of Suriname. These groups operate largely independently from the nation-state in political, legal, religious, and socio-cultural matters.

The Ndjuka (est. 25,000 people), one of the largest Maroon groups in Suriname, live in Eastern Suriname, primarily along the Tapanahony and Marowijne rivers. Most mining activity on Ndjuka territory takes place in a strip of forest along the Sella Creek, a side branch of the Tapanahony River. Ndjuka miners estimate that roughly 700 people work at Sella Creek, about five percent of whom are women.

Hardships and Hazards in the Mining Area

Many Maroon miners lament the hardships of mining life and the separation from their families. Gold miners live, on average, almost seven months a year in temporary camps in the mining area, ranging from a minimum stay of half a month to a maximum of the entire year. The combination of unbalanced meals and strenuous labor reduces their resistance to disease. Some miners earn nothing for several months, and those who do succeed risk being assaulted by criminals.

Some occupations and risks in the mining area are specific to either men or women. Pit workers are exclusively men, who use their bodies most heavily and earn a percentage of the uncertain gold production. In comparison, male and female cooks have relatively healthy jobs and earn more stable, fixed wages. Most Ndjuka women in the mining area are merchants who come to sell food, cigarettes, and the popular pulp from the fruits of the Aca' palm (*Euterpe oleracea*). Like carriers, sex workers, and people who perform other services, merchants cannot refuse to sell on credit because they would have no customers. Many customers, however, fail to pay off debts. Complains Johan* (carpenter, age 29), "There are few ways to get [credit payments]; I am not a troublemaker, I am not going to fight with people. . . . You cannot trust people in the interior to pay you back." In addition, women who travel without a male companion risk their reputation, explains Carmen (age 29): "The people will say you go whoring."

Are Miners Adventurers?

Some believe that gold miners underestimate or are unaware of mining risk. Others, including some development agencies, see gold miners as adventurers with exaggerated expectations of striking it rich. These assumptions are unfounded.

In a survey about gold mining and risk, more non-mining Ndjuka answered questions with "don't know," suggesting that gold miners are better informed about the risks of mining than others (which may not be surprising given their day-to-day experience with the activity). In addition to being more opinionated, miners also are more negative about most aspects of mining. Seventy-two percent of miners versus 65 percent of non-miners believe that the occupational risks of gold mining are higher than those in other jobs. More miners than non-miners agree that the mining area is a place where many bad things happen, and about 60 percent in both groups believe that those who participate in gold mining increase their chances of getting malaria.

While most non-miners said that they do not know about the health impacts of mercury, most miners agreed that their use of mercury would eventually damage their health. Still, they challenged me to explain how to make a living without using mercury. The only time miners were more positive than non-miners was when asked about their chances of getting rich. Nevertheless, over 30 percent in both groups denied that miners had a high chance of economic success, and 28 percent of miners were indecisive. When I asked people why they participated in mining, not one person mentioned an expectation to strike it rich. One man explained: "I do not know any rich gold miners."

Another indication of gold miners' risk awareness is their use of diverse strategies to minimize mining risks. One pit worker (age 32) avoided health problems by returning to town frequently to rest and build up strength. "You know how we struggle; your health is always more important. That is why you should not stay for six months." Adan (age 29, mine operator) explains, "Gold mining is a risky job; you cannot do it your whole life long. For a short period of time you can do it, to set up another job." For protection, Ndjuka also rely on supernatural powers that are appeased by obia (traditional magic) and the keeping of taboos. Other miners guard their health by avoiding the mining pit where most accidents occur.

So Why are Maroons Mining?

Many gold miners are the primary economic providers for their families, supporting their nuclear household as well as parents, siblings, and extended family members. They have entered mining because they believe that there are no other jobs, that they have insufficient education for better work, and that formal wages are insufficient to meet their economic needs. Some mention specific goals that range from providing their children with a decent education to setting up an independent business (such as a taxi company). Alex (25, pit worker) explains that only mining provides a sufficient income: I came back from the French side [French Guiana]. My brother told me "Come, let's go to the gold

mining area." I came, and see it pays better than the city. In the city you cannot make it; you maybe work for 60,000Sfl per month [approximately 60 USD in January 1999]. One bag of rice costs 5,000Sfl, so how are you going to make it? A man works perhaps three jobs to be able to survive. So you have to work in gold mining.

Alex refers to the rising costs of living in Paramaribo. In 1994, inflation in Suriname had reached 586 percent per year. Costs of food items increased ten-fold between 1990 and 1997, and from May 1998 to May 1999 consumer prices increased by 102 percent. Real wages in 1995 were less than half what they were in 1985.

Ndjuka miners estimated that they would earn about 60,000 Suriname guilders per month doing wage labor, which was the equivalent of about 60 USD in 1999 and about 30 USD in mid-2000. In comparison, reported earnings in all mining-related occupations generated higher incomes. Pit workers in Sella Creek earned an average of 43 grams of gold per month.² With one gram of gold worth roughly 9 USD in 1998-1999, the average pit worker's wage was just short of 400 USD per month. Cooks earned a fixed wage that ranged between 25 and 60 grams per month, and they often washed clothes, did sex work, or traded for additional income. The combination of activities could bring their income to the equivalent of more than 600 USD per month.

Mining incomes are uncertain and variable, but formal wages rarely provide more economic security. Theoretically, formal wages provide a monthly income, medical coverage, and pensions. Many are skeptical, however, about the economic security offered by the government. One miner (age 30) explains:

Even if you are eligible for child support or pensions, the government does not pay. Moreover, with the money of social security you cannot do anything. . . . Only once a year or once every six months the government comes to pay something to the people [who live in the forest].

In 1998-1999, the Suriname government, plagued by economic deficits, failed repeatedly to pay the wages of its employees and social security benefits. In practice, therefore, mining may be economically less risky than relying on other sources of income. Erwin (age 25, pit worker) explains:

I myself I do not want to do the work [gold mining]: I don't like it. I already did other jobs, but in gold mining you do not lose your money. When you come, you only need to take your clothes with you. The boss has all costs.

In the mining camps, laborers do not pay for food or housing, and can save all the money they earn, minus payments for the cook. With formal wages dropping to levels insufficient to live on, mining is a sensible choice.

Box 1. Survey responses of 95 gold miners and 108 non-mining Ndjuka

1. *Gold mining is more dangerous than other types of work*

	Gold Miners	Non-miners
Agree	72 %	65 %
Disagree	22 %	9 %
Don't know	6 %	26 %

4. *There is more evil (ogii) in the mining area than there is in the city.*

	Gold Miners	Non-miners
Agree	83 %	52 %
Disagree	11 %	15 %
Don't know	6 %	34 %

2. *As a gold miner, you have a good chance of becoming rich.*

	Gold Miners	Non-miners
Agree	40 %	23 %
Disagree	32 %	36 %
Don't know	28 %	41 %

5. *Working with mercury damages your health.*

	Gold Miners	Non-miners
Agree	70 %	40 %
Disagree	12 %	3 %
Don't know	18 %	57 %

3. *Participation in gold mining increases your chances of getting malaria.*

	Gold Miners	Non-miners
Agree	64 %	57 %
Disagree	31 %	17 %
Don't know	5 %	26 %

6. *As a gold miner, you find gold every month.*

	Gold Miners	Non-miners
Agree	39 %	13 %
Disagree	59 %	66 %
Don't know	2 %	21 %

The few women who enter mining mention similar reasons as the men; they are the household breadwinners and often single mothers. Sonia, a mine operator (age 39), explains how gold mining allows her to get by financially:

First I was selling, and I used my profits to buy a machine, a 4-cylinder, which cost a million guilders (approximately 1,500 USD). Four of my children go to school. . . . I pay for school with the gold mining income. I want my children to complete their education, then they can go somewhere else. In the early days you received child support, now you have to try everything you can.

Sonia's concern about her children's education is common to many miners; they see their limited education as a barrier to upward mobility. While the educational rates of the national population are among the highest in Latin America, almost 50 percent of Ndjuka do not speak the national language, Dutch, and 48 percent of women and 19 percent of men have no formal education. Literacy rates for Ndjuka men (69 percent) and women (45 percent) also compare poorly to national rates of 94 percent for men and 89 percent for women.³

Gold miners typically want their children to be educated in Paramaribo, where they will learn the skills necessary to do less strenuous "sitting" work, "in an office," and "with a computer." Unfortunately, elementary education in the forest suffers from a lack of funding, a high frequency of malaria among teachers and pupils, and a reluctance among teachers to work in forest schools. Secondary education is not available within several hours' travel. Many Ndjuka prefer to send their children to family or boarding schools in the city, but traditional incomes do not cover expenses. As one miner says, "My children have to go to school, therefore I suffer."

Policy Implications

Ndjuka poverty and limited opportunities for advancement or even employment in Suriname society are the root causes of Ndjuka participation in small-scale gold mining. Consequently, information campaigns aimed at increasing the ecological awareness of miners and police actions that remove miners from the forest will not reduce participation in gold mining or its environmental impacts. More effective policies to reduce gold mining would probably be to encourage people-centered development both in the interior and in the country as a whole. Many Ndjuka miners have in fact indicated that they do not like gold mining and would like to stop if other income generating opportunities were available.

To provide an education to their children is one of the main motivations for people seeking an income from gold mining. A more sustainable way to reach that goal would be to increase public investment in good elementary and secondary education for forest peoples. Furthermore, endemic disease in the interior impairs people's ability to develop their communities and provide for their children. Enhancing healthcare by suppressing diseases such as malaria and by improving pre- and post-natal care would greatly

improve the quality of life in the Suriname interior. At the national level, lowering inflation and stabilizing Suriname's currency would help provide economic security for poor households in Suriname. These changes would allow Ndjuka households to invest in a more sustainable future for their families, communities, and country.

Notes

1. Small-scale gold mining areas are centers of transmission of malaria and other tropical diseases. The open pits of standing water created by miners are excellent breeding places for mosquitoes and other disease-spreading organisms. Meanwhile, the mobility of miners and the general absence of public health care in mining areas have prevented the effective treatment or containment of malaria. Miners' frequent travel stimulates the transmission of malaria beyond mining camps, especially among gold miners' families. Health workers in Suriname reported that in the 1970s malaria was almost entirely exterminated in the country's interior. Today, due to a combination of civil war, the collapse of the public health care system, and the gold rush, malaria has returned as the most common and deadly disease among Suriname forest peoples.

2. (N=32, SD= 27).

3. These percentages pertain the research sample of Ndjuka who mostly live in the more isolated South of Suriname. There are no national statistics on education in the interior of Suriname, nor on educational achievement per ethnic group.

* Names have been changed to protect identities.

Marieke Heemskerk is a postdoctoral researcher in the department of Rural Sociology at the University of Wisconsin, Madison. Research in Suriname was conducted in 1996, 1998, and 1999 as part of her doctoral dissertation in Anthropology at the University of Florida, Gainesville. Please direct correspondence to: mheemskerk@yahoo.com.

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