

## Prospecting for Nutrition? How Natural Resource Extraction Impacts Food Choices in Marginalized Communities

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### Key Takeaways

- A key driver of poor diets appears to be variability in income for artisanal miners; while the profession can afford opportunities to make substantially more money than agriculture (particularly for women), the income generation is highly variable and unpredictable.
- Instability of income can be a challenge for maintaining a nutrient-dense diet, and this is exacerbated by gender inequities in salaries.
- Mining households generally have limited access to food from their own production, making them largely dependent on markets that often sell processed and packaged foods (e.g., cookies, sugar-sweetened beverages) at levels higher than might normally be expected in rural areas.
- Nutrient-dense non-staple foods were scarce and pricey, particularly in remote mining camps.
- Societal expectations around gender mandate that women undertake the vast majority of household and caregiving work in addition to substantial mining work, which, when combined with a lack of safe and affordable childcare options, puts a heavy burden on women's time for young child feeding.
- Food safety concerns are also a driver of food choice, as both vendors and consumers place considerable value on ensuring foods are clean and safe at the generally unhygienic mining sites.

### Objectives

The overall project objective was to depict how artisanal mining livelihoods impact food choices, with a particular focus on the choices women make for themselves and their young children.

### Background

Millions of people in remote and rural areas of low-income countries depend on artisanal and small-scale mining (ASM) for their livelihoods. 'Artisanal' refers to miners who work independently and informally, digging and panning for minerals using simple hand tools, often under poor working conditions. A significant share of miners in West Africa are women. As an informal, labor-intensive, and transient occupation, ASM is associated with many environmental, health, and nutritional risks but is a very important industry in Guinea, which contains almost half of the world's bauxite reserves and significant deposits of iron ore, gold, and diamonds. Although ASM communities

are widespread and growing around West Africa, little is known about the nutrition and drivers of food choice of these communities. This study sought to identify factors that might be shaping diets and food choices in mining communities in rural Guinea, with a special focus on young children, who are highly vulnerable to malnutrition.

### Methods

This study was conducted in the gold-mining areas of Kouroussa and Siguiiri prefectures in the Kankan Region of northeastern Guinea from May 2018 to December 2019. Structured observations were used to understand the context, actors involved in the food system, and occupational roles. Cross-sectional surveys at ten mining sites (613 mining households) examined livelihoods, food access, diets, food insecurity, food preferences, and gender roles. 112 in-depth interviews, along with some participant observations, were conducted with mothers and other caregivers of young children, food vendors, and young

single miners; these sought to understand the nature of their livelihoods and the motivations for their food choices. Market surveys and observations were conducted to assess food availability and prices as well as market functioning.

## Results

Diets for women and young children in the ASM communities studied were very poor, with 23% of women meeting minimum dietary diversity and 21% of young children meeting each of minimum dietary diversity and minimum meal frequency, with less than 6% achieving a minimally acceptable diet, according to WHO standards. About 28% of households were classified as being severely food insecure. While at the mining sites, some participants chose to fast for the duration of their work hours and instead would eat later in the day.

Households had limited access to home-produced food, especially in mining camps and remote villages. 60% had cultivated any agricultural land in the prior two years, 16% had a home garden, and 47% raised chickens. Most households had easy access to smaller food outlets that sold ultra-processed or packaged foods (e.g., bouillon

cubes, cookies), as well as to vendors of prepared foods (e.g., fried snacks, sandwiches). Access to supermarkets and open-air markets was limited, especially in remote camps. Fresh meat and fish could be found in most markets but were unaffordable for participants compared to rice and other staples. Vendors selling ready-to-eat and processed or packaged foods was common at mining sites. Vendors who sold similar items would try to enhance their sales by offering credit or emphasizing the safety of their food.

Incomes of miners vary each day, and this variability leads to large shifts in food choices in order to align with incomes. Most women brought their youngest child (under age 5) along to the mining site; about 30% left their child with another older child. Among children over six months of age, over half of them did not eat a meal during the day while at the site. Many mothers fed their child snacks that were purchased from mining site vendors. There are thus key gaps in nutrition for miners' young children and closing these will likely require working not only with miners themselves but also other stakeholders, such as non-parent caregivers and food vendors.

## More Information

- Zhang LX, Koroma F, Fofana ML, Barry AO, Diallo S, Songbono JL, Stokes-Walters R, Klemm RD, Nordhagen S, Winch PJ. Food Security in Artisanal Mining Communities: An Exploration of Rural Markets in Northern Guinea. *Foods*. 2020;9(4):479. doi: 10.3390/foods9040479. - <https://www.mdpi.com/2304-8158/9/4/479/html>
- “Artisanal mining in rural Africa: Blurring the line between urban, non-agricultural and rural, agricultural food environments” By Nordhagen S, Winch P, Klemm R, Fofan ML, Barry AO, Diallo S, Stokes-Walters R, Zhang L. 5th Agriculture, Nutrition & Health (ANH) Academy Week, June 30 – July 2, 2020. [https://www.youtube.com/watch?v=P\\_UX5QQG1Es&feature=youtu.be](https://www.youtube.com/watch?v=P_UX5QQG1Es&feature=youtu.be)
- “Food Security in Artisanal Mining Communities: Exploring Rural Markets in Northern Guinea” By Zhang L, Koroma F, Fofana ML, Barry AO, Diallo S, Songbono JL, Stokes-Walters R, Klemm RD, Nordhagen S, Winch PJ. 5th Agriculture, Nutrition & Health (ANH) Academy Week, June 30 – July 2, 2020. <https://www.youtube.com/watch?v=Zg6uCL7Bm1U&feature=youtu.be>
- “Young-Child Feeding in Challenging Settings: A Case Study in Artisanal Mining Families in the Republic of Guinea” By Klemm R, Nordhagen S, Winch P. *Current Developments in Nutrition*, Volume 4, Issue Supplement\_2, June 2020, Page 714 - [https://doi.org/10.1093/cdn/nzaa051\\_011](https://doi.org/10.1093/cdn/nzaa051_011)
- **Project Page** - <https://driversoffoodchoice.org/research/project-descriptions/natural-resource-extraction/>

This research has been funded by the Drivers of Food Choice (DFC) Competitive Grants Program, which is funded by the UK Government's Foreign, Commonwealth & Development Office and the Bill & Melinda Gates Foundation, and managed by the University of South Carolina, Arnold School of Public Health, USA; however, the views expressed do not necessarily reflect the UK Government's official policies.

