




Small-scale gold mining and gender roles: Critical reflections on socio-cultural dynamics in north-eastern Ghana

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Abstract

This article is a critical examination of socio-cultural factors and dynamics and the extent to which they inflect gender roles in small-scale gold mining (SSGM) in north-eastern Ghana. Normatively, the north-eastern part of Ghana is inherently male-dominant and patriarchal with gender roles strictly divided between women and men and tightly policed by social norms. The article draws on feminist political economy and paid work and postcolonial theoretical perspectives combined with in-depth interviews conducted in five mining settlements in the Talensi District of the Upper East Region to develop a framework for analysis. Based on the analysis of the field data this study contributes to the existing discourses on gender roles and small-scale mining in several ways. Firstly, the findings show that the normative expectations of women as occupying subordinate positions to men and pervasive cultural beliefs form the basis for the construction of gender-specific roles at the household level and these are reproduced in the SSGM settings. Secondly, the deep-rooted cultural and male-centric orientations and practices inherent in the SSGM sector spill-over from the ‘private’ space of the home and tend to complicate women’s access to productive opportunities such as meaningful employment. At the same time, these constraints heighten and perpetuate women’s vulnerabilities and risk of economic and social marginalization. The repercussions are that women are often relegated to less paid income-generating activities in SSGM such as transporting and shanking (sieving) or completely prohibited from work in times of menstruation. While the minerals and mining policy of Ghana is silent on women’s involvement in SSGM, the affirmative action bill currently before parliament could widen its focus beyond political governance to include such male-dominated sectors as SSGM. It is also imperative to transform the pervasive cultural norms and expectations that discriminate against women and oppress them to accommodate their concerns, interests and aspirations in the SSGM.

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Keywords Feminist political economy · Gender roles · Small-scale gold mining · Northern Ghana · Patriarchies

Introduction

Across the global South, small-scale gold mining (SSGM), low capital and technology-intensive, labor-driven means of extracting and processing has been on the increase over the past few decades. The SSGM sector is known to provide about 40.6 million direct jobs and over 150 million indirect jobs (Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development [IGF] 2018). Indeed, across societies in Africa, SSGM has also been on the ascendency (Hilson et al. 2013). Although mining is traditionally perceived as a masculine field, women's involvement in SSGM is on the increase (Lahiri-Dutt 2004). In Africa, the participation of women in the SSGM sector is estimated at 50% (Hinton et al. 2006; Eftimie et al. 2012). In the specific case of Ghana, Ofori-Mensah (2010) and Hentschel et al. (2002) have noted that women constitute 44% of the 85% of people who are engaged in SSGM activities. However, the majority of women are involved in illegal small-scale mining, known locally in Ghana as *galamsey* (Hilson 2001).

The compelling reasons for women's participation in the SSGM sector are characterized by push and pull factors. Several of the push factors stem from endemic poverty and deprivation (Banchirigah 2008; Maconachie 2011; Kelly 2014; Mbianyor 2014; Kumah et al. 2020; Arthur-Holmes 2021; Arthur-Holmes & Busia 2022). The Upper East Region of Ghana, where the study sites are located, has consistently been one of the poorest areas in Ghana (Ghana Statistical Service [GSS] 2015; 2018; Ghana National Household Register [GNHR] 2020) due to a concatenation of reasons, including neglect by the colonial administration and successive postcolonial Ghanaian-led administrations in addition to being located in an ecologically fragile semi-arid zone (Thomas 1974; Derbile 2010; Akurugu et al 2021). The SSGM sector, therefore, offers hope for poor and vulnerable women and men to address their basic needs, including food, water, shelter, health and education for children. The pull or motivating factors refer to the relatively quick returns that mining offers (Hilson 2006; Baah-Ennumh & Forson 2017; Arthur-Holmes 2021; Arthur-Holmes & Busia 2022). With declining agricultural productivity due to climate change, over-cultivation and high input costs, SSGM has become an attractive alternative livelihood for rural folks.

Regardless of the motivation for participating in SSGM, women are known to engage directly or indirectly in different aspects of the SSGM value chain (Gunson & Jian 2001; Hilson 2001). Studies by Hilson et al. (2013), WHO (2016), IGF (2018) and Arthur-Holmes and Busia (2022) reveal that women are often excluded from the higher gold value chain production processes such as exploration, extraction and production and marketing. However, they dominate tasks relating to mineral processing such as crushing, grinding, sieving, washing, and panning, to amalgamation and amalgam decomposition (Shen & Gunson 2006; Jenkins 2014; Buss et al. 2017; Arthur-Holmes 2021; Arthur-Holmes & Busia 2022). In effect, women are mostly engaged in the labor-intensive, low-waged aspects of SSGM which require

no managerial or supervisory roles (Heemskerk 2003; Arthur-Holmes & Busia 2021). Women also play ancillary roles such as, fetching water, cooking, cleaning and these are commensurately low-remunerated (Jenkins 2014) and some serve as sex workers to earn additional income (Mahy 2011; Makaza & Chimuzinga 2020; Arthur-Holmes 2021).

This article focuses on a critical analysis of socio-cultural factors and dynamics that influence gender roles in small-scale gold mining (SSGM) in selected mining settlements in the north-eastern part of Ghana. This is done by drawing on feminist political economy on women and paid work and postcolonial theoretical perspectives. The Upper East Region and by extension northern Ghana is deeply male-centric with pervasive patriarchal ideologies. Cultural norms and practices that privilege masculine behaviors and practices and subordinate as well as oppress women and feminine ideas are deeply entrenched in the study area. For instance, decision-making power and authority, control over productive resources and property ownership are mostly vested with the male patriarchs (Apusigah 2009; Akurugu 2020), with gender roles strictly divided between women and men and strongly policed by social norms.

SSGM, supernatural beliefs and gendered roles: women's triple roles

Gender-based roles and responsibilities at the mining sites are deeply entrenched and actually reflect the cultural expectations of women and men within the 'private' sphere of the home in the mining communities. Normatively, in northern Ghana, women are obliged to perform primary functions related to domestic chores, home management, childcare, and culinary duties, physically demanding tasks that are not remunerated at the family level. This association of women with unpaid care roles remains despite women's increased participation in the labor market. The public spaces, including mining sites, are also seen as an extension of women's subordination, reflected in their participation in peripheral activities (Hinton 2006).

The activities and practices of SSGM are often shrouded in supernatural beliefs, such as gold being a spirit, performing blood sacrifice for gold discoveries, menstrual taboos as well as women attracting bad spirits and being symbols of bad luck (Heemskerk 2000; Dreschler 2001; Addei & Amankwah 2011). These supernatural beliefs regarding the discovery of gold affect productivity and consequently impact the socio-economic status of miners. The deep-seated beliefs further determine who works in the mining pits and processing as well as who controls the gold and its proceeds. The beliefs also play an important role in determining the types of rituals to be performed and at which periods during mining and working and resting days for the miners (Addei & Amankwah 2011). The socio-cultural factors, functions and expectations which determine what is done and gender roles affect the rights and entitlements of women to resources and decision-making (Eftimie et al. 2012), thus reinforcing structural inequalities. Yet these beliefs have remained dominant and uncontested because they are deeply rooted in the customary practices of the people, and they serve the interests of the dominant groups—powerful and influential men in that context.

Globally, the archetypical belief in the existence of a mystical world beneath the ground, comprised the earth deities and the spirits of the ancestors and their relationship with women form the basis of perspectives held by men that exclude women from mining underground (Finn 1994; Nayak & Misra 2005; Sarpong 2015; Arthur-Holmes & Busia 2021; Arthur-Holmes 2021). For instance, the notion of land as spirit to be controlled by men for and on behalf of the family (Derbile et al. 2022) endorses the control of resources such as, gold by men. Generally, these mystical beliefs and taboos are more evident in Latin American and African countries' where they restrict women from working underground. However, Labonne (1998) and Hinton (2006) observe a different situation in Mali where women of Kangaba can work with men during gold-digging and underground activities but are supposed to hand over all the gold to their male partners according to the Malika tradition. This tradition is similar to a situation reported in Kenya where female miners only manage and control the income of their families and give allowances to their spouses (Amutabi & Lutta-Mukhebi 2001).

Across Africa, there are several mystical beliefs surrounding mining (Dreschler 2001; Synergy Africa, 2001; Kaingu 2003). According to Synergy Africa (2001), women in Zambia are not allowed to get close to gemstones due to a belief that the gems would be driven deeper down the earth or the spirit of the stones would let them vanish. The prohibition of women from mining usually happens when they are menstruating, and this is occasioned by a belief that their periods lead to the disappearance of the gems. To avoid the disappearance of the gemstone, a sacrifice is often made to the spirits of the gemstone and the ancestors (Kaingu 2003). In a similar vein, in N'tulo in Mozambique there is a belief that the presence of women in mining underground attracts evil spirits which may cause accidents or the disappearance of gems. Consequently, women are prohibited from underground mining (Dreschler 2001). They are, however, allowed to perform such tasks as loading, transporting and washing the gold ore, activities which yield less remuneration compared to digging (Makaza & Chimuzinga 2020).

In Ghana, findings from Addei and Amankwah (2011) on supernatural beliefs in SSGM and Ofosu-Mensah (2010) on traditional gold mining in Adanse revealed that women are prevented from working underground or handling gold. This is often justified by pervasive belief that women are weak and "unclean" during menstruations and hence the spirits will withdraw the gold belonging to them, upon seeing women in menstruation handling them. Ofosu-Mensah (2010) further revealed that customs demand miners to abstain from sex a night before mining. Recent studies by Arthur-Holmes (2021) and Arthur-Holmes and Busia (2021, 2022) in the Prestea-Bondaye mining area in southern Ghana reveal that gendered work patterns and norms in the SSGM sector entrench and normalise popular perceptions that women's role in mining is to carry loads. The interplay of these taboos and beliefs limits women's involvement in SSGM activities thus inhibiting their economic empowerment.

The role of women in low-income settings such as north-eastern Ghana has been conceptualised in terms of the 'triple role' concept comprising reproductive, productive and community organizing activities (Moser 1989). The reproductive tasks include childbearing and nurturing and home management while the productive activities refer to income-generating ventures in agriculture or the informal sector.

The third category is community activities where women play various roles in organizing and mobilising labor to undertake community development. These roles reinforce the gendered division of labor and women's subordinate position. The gendered practices in SSGM settings resonate profoundly with the triple role perspective which discriminates and marginalises women. Consequently, the marginalisation of women in SSGM is grounded in social norms, beliefs and cultural practices that prohibit women from playing profitable roles in mining which further creates inequalities in the SSGM sector.

Historical antecedents of gender division of labor in mining- global, Africa and Ghana

Historical developments, socio-cultural revolutions and globalization have resulted in changing gender roles across societies in contemporary times. Despite these, gender stratification, the subordination of women, and unequal power balance between women and men persist. The invisibilization of women's imagery, work and involvement across societies has been pointed out by several feminist scholars (Tong 1994; Armstrong & Braedley 1995; Elson 2000; Armstrong & Laxer 2005). Though women's domestic work has historically been omitted from Gross Domestic Product (GDP) calculations, their contribution has been of substantial economic value (Frader 2020). Women's unpaid work such as, cooking, water harvesting, firewood harvesting, childcare and care for the aged persons form part of economic activities. For instance, on the average, a Ghanaian woman spends about 6.32 h on these activities, yet they are often omitted from the calculations of GDP in several countries including Ghana (Amporfu et al. 2018).

According to Hartmann (1976), women's subordination within the spectrum of gender division of labor existed long before modern capitalism. However, such gender division of labor experienced in early hominoid societies has been contested by physical and social anthropologists and archaeologists, with Leacock (1987) arguing that both men and women gathered and hunted for survival. Archaeological evidence from Dakotas in North America indicates that women engaged in tool-making, long believed to be male-domain. In the Middle East, it is reported that women were engaged in egalitarian and unrestricted roles in Neolithic farming communities (Bolger 2010). According to Frader (2020), cultural perception of sex variations has been critical in shaping the experiences of all types of labor. Striking continuities in gender divisions and inequalities have developed in extremely diverse parts of the globe. Though men and women have performed economic roles crucial to the survival of their families, societies and countries, men's access to some forms of labor such as, machinery operation, vehicle technicians, carpentry, engineering and construction has been privileged and protected whilst women's opportunities have somewhat been circumscribed. Where men and women have labored at the same time, employers tend to value women's labor less than men. Historians across the globe believe that the growing complexity and bureaucratization of societies, the emergencies of centralized states and the expansion of capitalist production together constituted major factors leading to inequality. However, this is not well explained by growing structural complexities. This is because, gender discourses,

religion, laws and overlapping ideologies regarding race and class have been key in shaping gender division and in perpetuating unequal relations of power between men and women globally.

In the mining spectrum, the gendered division of labor, where men engaged in digging and women in hauling, processing and service provision, is well-documented for metallic minerals and gemstone production in Colombia, Sudan, Suriname, Mozambique, Burkina Faso, Brazil, Philippines, Kenya and several other countries (Heemskerck 2000; Amutabi & Lutta-Mukhebi 2001; Chakravorty 2001; Dreschler 2001; Hentschel et al. 2002; Hinton & Veiga 2002). In Burkina Faso and Mali, for instance, 90% of mineral processing activities such as, separation, comminution and concentration are carried out by women (Dreschler 2001; Gueye 2001; Keita 2001). Studies have shown women's involvement in the mining and processing of industrial minerals such as, stone aggregate, limestone and dimension stone in Uganda; stone aggregate and sand in India; stones, sand and clay in Ghana; and marble in Zambia (Babu 2004; Sahnaj 2004; Hilson 2006; Romano & Papastefanaki 2020). Women in Cooce Camp at Tarkwa in Ghana were involved in transporting gold ore, carrying water and pounding rocks than digging (Akabzaa & Darimani 2001). Arthur-Holmes (2021) revealed that women in the Prestea-Huni Valley mining area are engaged in food vending but only directly involved in carrying mineralized sand, providing water to wash mineralized sand, transportation of gold ore and serving as forewomen due to their association as relatives to owners of Chang Fa—a machine used in smoothening mineralized sand and crushing gold ore into fine particles. These women were sometimes not paid due to their marginalized roles. Studies show that where men and women perform similar tasks, women tend to receive less money (Eftimie et al. 2012; Eshun 2016; Buss et al. 2019). Women in the formal mining camp in Tarkwa in Ghana who transport gold ore, water and pounded rocks received 60% lower than men involved in digging (Akabzaa & Darimani 2001). In Siguiri in Guinea, for every five calabashes of ore washed by women, male intermediaries receive profit from four with women retaining one (USAID 2000). Women are over-represented in sales and service provision but under-represented in production and manufacturing (ILO 2016; USAID 2020). The predominance of women in care work is high; Addati et al. (2018) reports that women make up about 76% of unpaid care workers across the world. As well, they spend an average of 201 days carrying out unpaid care work while men do only 63 on average per annum (Lokot & Bhatia, 2020). The domestic ideology and the perception of the male being the breadwinner complicate definition of gender division for women's work in mining and the value of women's unpaid labor in the mines (Moser 1989; Frader 2020). The gender division of labor in the household and the assumptions of a male breadwinner and a female mother or wife extends to the mining sector and there are myriad factors at play.

Feminist political economy and postcolonial perspectives in the SSGM sector

Feminist political economy focuses on the politics of gender division of labor in everyday life and in the public arena as well as the intersections of race/ethnicity, gender and class. Feminist political economy concerns how women are affected by

the market system, household work and decision-making practices. Feminist political economy also analyses the way in which discrimination against women in both the market system and the 'private' sphere of the home complicates women's social conditions (Armstrong & Armstrong 1980). Women are subjected to discriminatory practices within the normatively assigned gender roles in the household and this disadvantaging replicates in the public sphere (Armstrong & Laxer 2005). The concentration of women in low-waging, low-skilled jobs, as feminist scholars have argued, is traceable to the gendered division of labor within the household (Armstrong & Armstrong 1980; Moser 1989). Feminist political economy argues that traditionally, women earn lower wages than men. Within the household, women have disproportionate responsibility for unpaid care and nurturing work. The devaluing of women's work within the household has translated into them occupying similarly low-remunerated, precarious jobs in the market system. A feminist political economy perspective is committed to transforming the unequal gender division of household labor, while at the same time increasing the valuation of unwaged work through policy reforms (Lokot & Bhatia 2020). Whereas formal policy formulation and interventions are rarely the governing practices in the informal sectors, such as, the SSGM, they can serve as the basis for engaging the dominant males who control decision-making regarding the gendered division of labor at the mines. In addition to this, a sustained engagement of the stakeholders in mining is central to transforming the inequitable gender roles in the SSGM.

Extending feminist political economy perspectives to the gender division of roles within the SSGM sector, we could see how the ideas resonate profoundly with the discourses explored above. Feminist political economy approaches thus offer great opportunities to grasp the relegation of women to marginal, low-paying activities in the mining sector, although the perspectives do not offer scope for explaining the deep-seated mystical beliefs and assumptions and the important roles they play in assigning peripheral to tasks to differently positioned women in the postcolonial setting of northern Ghana. Yet, this limitation is only part; a further axis of domination for the marginalized female subjects of the SSGM sites relate to their being located within a postcolonial setting with inherently male-dominant assumptions and beliefs. Postcolonialism is committed to struggles against imperial powers and the exploitation of formally decolonized settings. Rajan and Park (2000:53) describe postcolonial feminism as 'an exploration of and at the intersections of colonialism and neo-colonialism with gender, nation, class, race, and sexualities in the different contexts of women's lives, their subjectivities, work, sexuality, and rights'. Postcolonial feminist discourses draw attention to the continuities and discontinuities in formerly decolonized settings and they afford an avenue to explore the specific struggles of the women in our study with the legacies of colonialism, current neo-colonial structures of domination and local androcentric government institutions that fail to address the specific struggles of women. These struggles include hunger and malnutrition, normalised violence and sexism within both formal and informal working environments and lack of tailored social protection schemes to effectively meet the needs of vulnerable women as well as eliminate discrimination against women on the basis of their gender.

Materials and methods

The context of the study

Data for this study were collected between October and December 2017 in five mining settlements in the Talensi District of the Upper East Region, Ghana, namely Gbane (also known as Kejetia and Obuasi), Tarkpan (also known as Tarkwa), Soumbore (also known as Accra-site), Yale and Mwachiboke. These names—Kejetia, Obuasi, Tarkwa and Accra-site are not indigenous names but were adopted by local miners based on the intensity of mining activities in such areas that mimic these historical mining sites in the southern part of Ghana. The Talensi District was carved out of the then Talensi-Nabdam District in 2012 with Tongo as its administrative capital. The District is located in the Upper East Region of Ghana and shares boundaries with the Bolgatanga Municipality to the West, Nabdam District to the North, East Mamprusi District to the South East, West Mamprusi District to the South West and Bawku West District to the East (Fig. 1 gives visual context and location of the study communities in the Talensi District).

The geographical area, now known as the Talensi District is one of the oldest settings with gold resource endowments in the Upper East Region. The District currently has the highest licensed and registered concessions, and mining companies operating on a small-scale basis in the five regions of northern Ghana (Minerals Commission UER 2017). Following this, it has the highest number of mining communities in the region with three foreign mining companies. Mining in the Talensi District is an all-season activity due to the concentration of gold and the intensity of mining activities in the area. Thus, it attracts women and men from diverse socio-cultural and economic backgrounds. The District is largely rural with strong adherence to customary norms and practices, including those on the gendered distribution of labor. Although Christianity and Islam are practised within the District, residents of the District largely belong to the African Traditional Religion. Thus, belief in the ontological presence of the ancestors, the deities, magic power and witchcraft permeates everyday and socio-economic life of the people. Similarly, practices at the SSGM sites, including gender roles, are deeply inflected by these beliefs and what is socially permissible in this cultural setting. Together, the five communities form the largest mining area in the District characterized by proximity between them, intensive and all-season mining. Consequently, they were selected for the study because of the scale and intensity of mining occurring there.

Research design and sampling methods

A cross-sectional study design was adopted to examine the cultural dynamics and gender roles in the Talensi mining industry within a period when the Government of Ghana had banned illegal mining activities in 2017. Cross-sectional design is more suitable when dealing with short-term timescales and studying a phenomenon at a particular period (Gray 2019). In particular, it provides an opportunity

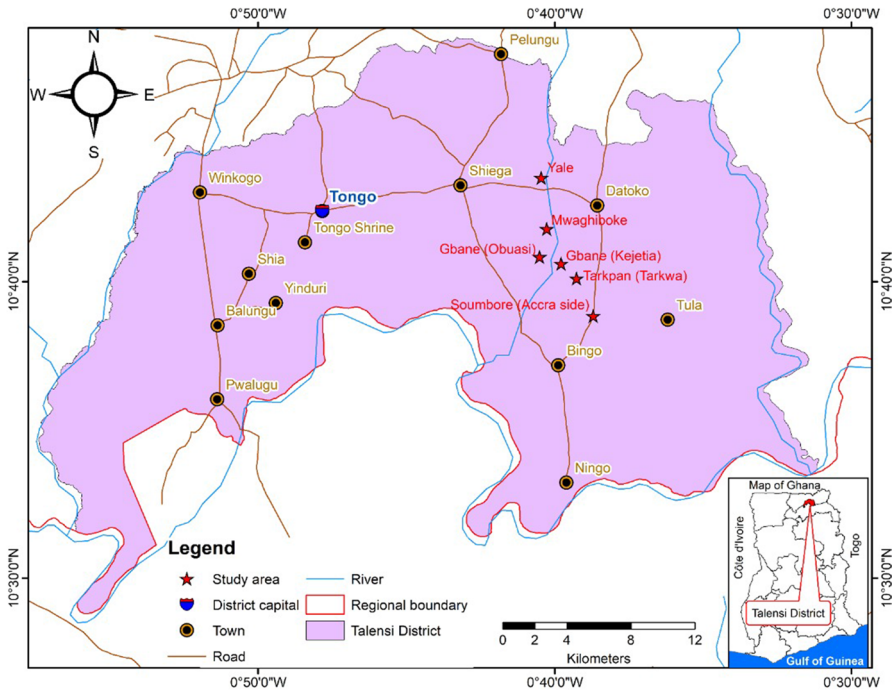


Fig. 1 Map of Talensi district showing the study communities

for snapshot analysis of gender perspectives in mining from multiple worldviews. A total of forty-one respondents participated in the study. The sample size of forty-one was reached at the point of saturation when adequate data and relevant issues were captured with no further insights emerging. Thirty of the respondents were key informants (16 men and 14 women workers), six mine concession owners, two divisional chiefs (Gbane & Yale) and the Tongodaana (The overlord of Tongo Traditional Area). In addition, a staff each from the Minerals Commission (male) and the Talensi District Assembly (female) were purposively selected for in-depth interviews on knowledge of existing cultural practices in mining, how these cultural norms limit women’s participation, the impact on gender, mining activities and strategies to address them so as ensure equal participation. The key informants and the concession owners were selected based on a number of factors, including: the type of mining activities engaged in which included underground and surface mining. Other considerations were the roles they perform, the duration of stay in the mining communities, their experience in mining and whether they were victims of gendered cultural practices in the mines. For instance, the inclusion of men and women miners engaged in underground and surface mining was to understand how gender roles in both types of mining are distributed on cultural grounds. The duration of stay was vital in sharing normative views on beliefs and whether these cultural beliefs have changed over time. The chiefs and institutional heads were considered primarily because of their

roles as stakeholders in the mining business, knowledge and experiences about mining in the area, the cultural set-up, gender relations and women's engagement in mining.

Research instruments

The study used multiple data collection methods to facilitate validation of data from same and/or different sources. The use of an interview guide and face-to-face interaction with respondents and groups enabled further probing, clarification of questions and reframing of questions appropriately. Face-to-face in-depth interviews were conducted with thirty key informants (men and women) using a semi-structured interview guide and with each interview lasting one hour on average. The interview guide was centered on cultural beliefs, norms and taboos governing the mining sites and practices; the influence of these cultural beliefs, norms and taboos on gender roles; gender-differentiated roles in mining; and differentiated mining benefits and remunerations due to the gender-specific roles. Specific questions for the chiefs included what cultural beliefs, norms, or taboos exist and were practiced in the mining areas and whether these beliefs, norms and taboos were gender specific and how they defined gender roles. Additionally, the chiefs addressed questions relating to the linkages between mining and cultural beliefs, taboos, or norms and the extent to which these beliefs and norms affect men's and women's activities in the mines.

The interview guide was pre-tested in Gbane and Yale mining communities to help address associated gaps and issues prior to the data collection exercise. The initial gaps identified were that the interview guide was too long and the interviews lasted for about 90 min. Consequently, the interview guide was revised to allow for flexibility and this helped to reduce the interview time. Additionally, questions on overlapping roles, taboos and cultural issues were not part of the guide from the start. They were considered to be important and included. As a multi-site study, four research assistants in addition to the lead author stayed in the field for 3 months from October to December 2017 for data collection. The research assistants were trained on interviewing and navigating ethical issues in the study. All interviews were conducted in the preferred language of the respondent and the responses recorded and transcribed.

Besides the interviews, a total of ten Focus Group Discussions (FGDs) were conducted in the five study communities. Thus, two FGDs were conducted in each mining community (a male group and female group). A total of sixty-two miners across the five mining communities participated in the group discussions. Membership of each group ranged from six to eight discussants and were drawn from mine association leaders, long-serving miners and other opinion leaders. Themes discussed were miners' experiences of beliefs, norms and taboos; gender division of labor; culturally restricted roles by gender; and the implication of cultural restrictions on gender roles in the mines. The dynamism and the natural conversational pattern in the groups triggered a reflection and recollection of varied and interrelating experiences of cultural beliefs and taboos which complimented the individual interviews. The

venues and time for the FGDs were agreed upon by participants at their convenience. On average, the discussions lasted for one and a half hours. Sound recorders were used to record the FGDs after seeking the respondents' consent. Data from the FGDs complemented the interviews.

Data analysis and presentation

Semantic Reflexive Thematic Analysis (SRTA) was used to analyse the data. According to Braun and Clarke (2020) and Byrne (2022), Reflexive Thematic Analysis (RTA) is a pragmatic, data-driven and flexible approach to analysing qualitative data without any reference to a pre-existing coding framework. Data from the IDIs and FGDs were captured in the form of field notes, transcripts and audio recordings. The SRTA process involved a number of steps. The first process involved reading the scripts, field notes and listening to and transcribing the audio files to create a dataset for the analysis. The next step was the generation of themes from the data. This involved reading through the transcripts to identify common concepts or themes. Major themes that emerged from the IDIs were gendered remuneration, gendered division of labor, gold value chain, gender roles as well as gender histories and experiences. Themes that emerged from the FGDs were the patriarchal system, belief about menstrual blood, shea butter and cracking of groundnuts. These themes were further reviewed, defined and labeled after which extracts from the dataset were grouped under the appropriate themes. These themes and the extracts formed the basis for structuring the results.

Results and discussion

Labor history and experiences of mine workers

A total of 53.33% and 46.67% of men and women, respectively, participated in the study. The study revealed that 61.3% of the men and 47.6% of women previously relied on agriculture (farming and live stocking) as their main livelihood source. As well, petty trading in vegetables, cereals and clayed pots, charcoal burning and firewood cutting dominated as complementary livelihood sources. Apart from charcoal production and firewood harvesting by men and women, some women in SSGM had engaged in "pito brewing" (local beer) previously. Pito brewing and firewood harvesting were culturally feminine activities, however, charcoal production was mainly carried out by men in the study area. Livestock rearing was almost exclusively carried out by men while in terms of farming, men and women performed different roles. For instance, sowing and harvesting were done by women with the support of men in some households. However, men were responsible for land preparation, ploughing and weeding until harvesting. Excerpts from the FGDs revealed that alternative livelihood sources in the District before the discovery of gold in the 1930s were limited and underdeveloped (Hilson 2001). The overlord of the Talensi Traditional Area (Tongodaana), through his linguist, indicated that gold is the only

natural resource in the district and its discovery has since eased the economic burden of the people. From the analysis here, both male and female participants' lived experiences are marked by their vulnerabilities. The Ghana Living Standards Survey Round 7 (GLSS7) data identifies subsistent farm households as the poorest in Ghana (GSS 2018). This high level of poverty is a reflection of the erratic nature of their source of livelihood, which is very much dependent on the vagaries of the weather.

Gender roles and participation in the gold value chain

Gender roles in the small-scale gold mining chain reflect the hyper-masculinist structure of Talensi society. Results from the study revealed that the SSGM value chain involves seven stages: exploration, extraction, processing, concentration, amalgamation, refining and trading (see also Hinton et al. 2003; WHO 2016). Exploration involves the search for gold deposits. According to descriptions by respondents, the exploration process may take weeks, months, or even years. This process involves the use of both traditional and modern methods, including deploying traditional means involving the use of supernatural powers such as, precognition and praying to the ancestors by offering ritual sacrifices to aid in the discovery of gold. Majority of the respondents explained that soothsayers,¹ mallams,² prophets or pastors both within and outside of the district are important spiritual actors in the discovery of gold. However, the Talensi tradition forbids women from consulting these spirit mediums. The restriction is based on the reason that the male child remains a child of the family and so his ancestors identify and communicate better with him than females who are married into a family. This explains why male children of less than 5 years can be taken for consultation at the shrine instead of elderly women where there is no adult male. Whilst men and women could consult prophets and pastors, women's inability to explore other spiritual means like men is believed to limit their participation in the gold exploration stage. Apart from this spiritual mode of exploration, miners also talked about the use of gold detection machines for exploration. Miners scavenge around suspected gold areas with the machine, which then produces a sound upon detecting gold. Another means is by trial and error where the prospectors simply carry out the drudgery of manual test digging and processing in areas known to have gold-bearing rocks hopeful to strike gold. In addition, artisanal miners discover gold by simply encroaching into existing mining concessions through illegal means or by scavenging abandoned mine sites.

The study results indicate that the exploration of minerals is predominantly a masculine affair. Only 14.69% of women in our study are involved in the exploration process because of their financial incapability to purchase gold detection machines, inability to consult powerful deities for direction on mining and lack of strength required for manual digging in search for gold. Globally, the participation of women

¹ In the context of African Traditional Religion, soothsayers are persons believed to have supernatural powers to foretell the future.

² Mallams are people of the Islamic origin believed to predict the fortunes and future of people by reciting the *Quran*.

in mineral exploration is considered rare (IGF 2018) and several factors limit women's participation in mineral exploration. According to the IGF, these include limited access to land, licensing and legal protection, lack of access to technology, equipment and financial assistance.

The extraction stage involves the commercial exploitation of the minerals through digging, loading and transporting the mineral ore. Digging is done using physically demanding tools such as, pickaxes and chisels, as with the exploration, this was mainly carried out by the men. However, the loading and transportation of the ore to the processing point was done by both men and women, with the latter predominating in this activity with about 71.06% of participation. The exclusion of women in underground activities but dominant in surface roles was a result of women being perceived as weak and not physically strong to exhibit the exaggerated masculinities about mining underground. The overhyped risks associated with mining further formed the basis for women's absence in underground mining. The exclusion of women from underground mining in the study area is consistent with the assertion of Lahiri-Dutt (2011a), Makaza and Chimuzinga (2020), Arthur-Holmes and Busia (2021, 2022) that men mostly perform labor-intensive roles which confirms the perception of masculinity associated with mining. The processing of gold involves crushing and milling the ore. The crushing is mainly done by pounding using a metal mortar and pestle and the milling is by a grinding machine. Men dominate the crushing and milling stage of the small-scale gold mining value chain, with a percentage of 68. The concentration stage which involves the separation of the gold from the ore through sieving/shanking and panning had women dominating with about 83 percent. The dominance of women in shanking was attributed to the less energy-demanding nature of the activity. Amalgamation is the final separation of the gold from particles after concentration. The final separation of the gold from the particles is done using mercury. Results from the study indicate that women's participation at this stage is minimal. After amalgamation, the gold is refined; it undergoes heating to get rid of residual mercury and to remove impurities. Refining is the last stage before the gold is sold and it is mostly the preserve of men. The absence of women in gold amalgamation and refinery was attributed to the cultural perception of women's presence or association with gold which reduces its value. The study results indicate that men dominate the trading and marketing of gold. Though gold buying requires huge financial start-up capital, most of the women who were not financially strong engaged in gold buying and the few women who ventured into the activity eventually collapsed because of the cultural perception associated with women handling gold.

The results also revealed that men equally hold the power to assign roles in mining, to determine wages and duration of work. Men exercise full control of mining operations and unilaterally take decisions regarding discipline and rewards. It was also revealed that numerous indirect services support the mining industry. These include food vending shop keeping, water supply, and commercial sex work. These services, majority of which yield marginal incomes, are predominantly carried out by women and girls. Several studies have revealed that women dominate in the provision of services such as, food and water supplies in SSGM in many countries and these also give credence to the feminist political economy perspectives about women

being disproportionately concentrated in low-wage jobs (Armstrong & Armstrong 1980; Moser 1989; Armstrong & Laxer 2005; Hilson et al. 2013; WHO 2016; Lokot & Bhatia 2020; USAID 2020).

Respondents expressed mixed feelings about restrictions in some stages of the gold value chain or activities in mining. For instance, women miners who participated in the FGDs, held the view that the roles in mining are bifurcated along gender lines such that women have limited access to some mining activities such as, extraction (underground) work with the claim that it is risky. The men, by contrast, did not understand the gender role stereotyping in mining, arguing that roles are assigned according to one's ability and willingness to perform the task and not gender identity. However, about 16.5% of men who were interviewed admitted that some aspects of mining activities bear restrictions depending on the job assigned whereas 12.8% of women miners believe there were no restrictions along gender lines. Women work in less profitable areas of the mine such as, loading, transporting, crushing, grinding, sieving, washing, and panning (Hinton et al. 2006). According to Amankwah and Anim-Sackey (2003), major impediments to women's active participation in small-scale mining activities are associated with cultural norms and social taboos. This study revealed that gender roles in mining are determined by cultural values, the physical makeup of men and women, social factors, women in a male-dominated work environment and the skills or experience of both genders. These cultural norms and social taboos serve as stumbling blocks to women's participation in SSGM as Amankwah and Anim-Sackey (2003) and Arthur-Holmes and Busia (2021) have argued. It can be concluded that the different perceptions of the restricting factors to female miners participating in some roles or stages in mining are built on normative gendered assumptions and constraints.

Perceptions of concession owners on gendered division of labor in SSGM

The study results show that the division of labor for men and women in the Talensi mining sites is dependent on the duration of the activity (time, number of days or months required), the nature of the activity (energy-demanding or not), cultural beliefs surrounding the activity and bravery (ability to withstand perpetrators underground- people who purposely sneak into others mining pits to steal mineral ore). Drawing inferences from previous work history, concession owners stated that men performed more demanding tasks such as, exploration, extraction, and drilling than women. The perceived ability of men to undertake relatively challenging and physically demanding tasks was said to be the basis for recruiting them for digging, chiselling, blasting the ore, pounding, crushing, milling, and underground mining whilst women were mostly recruited for shanking (sieving), panning, transporting, and fetching water to areas earmarked for washing gold. According to the concession owners, men deemed not physically fit also participated in panning, loading and transporting mineral ore, which are classified in this study as overlapping roles. Paradoxically, some women, during the FGDs, informed the researchers that they have sought for crushing and milling jobs but were denied without any reason. Those who expressed interest in underground mining were women who ever worked in

*sambalga*³ pits (shallow mining). However, mine concession owners, during the in-depth interviews, revealed that no woman had requested or applied for underground mining. Results from mine concession owners, men and women miners pointed to shanking (sieving) as the traditional and primary role of women in the mining area. Our discussion here draws attention to the troubling replication of essentialist assumptions regarding women's and men's roles and aptitude and what is culturally permissible, and the normative expectations. These essentialist framings work to complicate women's participation in SSGM and reward systems.

Cultural constructions of gender roles in the Talensi District

Patriarchal social system

To understand the origins of socio-cultural beliefs, taboos and norms that affect women's participation in SSGM and how they translate and apply in the mining areas, we obtained data from respondents on the cultural practices and norms that existed, were recognized and practiced before the emergence of mining in the Talensi District. The study revealed that male-dominant patriarchal systems pervaded the social fabric of the Talensi people. These systems exalt men above women in terms of decision-making, access to and control of economic resources (Koomson 2017). In Talensi society, the presence of these systems means that the rule of men with women having little or no say in decision-making is commonplace. For instance, women are not permitted to sit with men during decision-making. Additionally, female-heads of households are not culturally permitted to take important decisions regarding their families. This was backed by two quotations from female respondents who are both widows;

It is a taboo for us (women) to sit with the men. That is why the men sit in front of the houses while we sit under trees in the afternoon when we all return from farm. In my thirty-three years of marriage, I have never contributed to any major decision concerning my children particularly regarding their marriage issues. I am a widow and head of my household, yet my late husband's brothers still make major decisions regarding my children, despite the fact that they do not support us with money or food. (48-year-old female respondent, October 2017)

Our culture does not favor women. My husband passed on two years ago, and as I narrate to you, the final funeral rites are yet to be performed. I remain the wife of my deceased husband until the final rites are performed. I will be considered to have committed adultery and will incur mystical illness or even death upon myself or children if I had an affair with a man before the funeral rites of my deceased husband. However, a man can even marry a day after the death of his wife. (40-year-old female respondent, December 2017)

³ Sambalga involves digging of shallow pits along banks of rivers to discover gold deposits.

Respondents indicated that the Talensi people practice patrilineal system of inheritance whereby children inherit properties (mainly land and cattle) from their fathers. This patrilineal system considers girls as *saama* (strangers) in the house because they are expected to grow and marry into different clans. The patriarchal system vests all lands with the men who act as custodians by virtue of their positions as household and family heads, clan heads and chiefs. It was revealed that among the Talensi, land is mainly acquired through inheritance, although there is an emerging trend involving the sale of land. Consequently, girls are not considered in Talensi culture as permanent members of the family and therefore are not entitled to the property. Even, in their husbands' houses, women cannot own land. However, their male children, regardless of how young they are, are entitled to land. In addition, women are normatively not allowed to buy and own lands. A woman who wishes to buy land must do so through her husband, brother, or other male member of her family. Akurugu (2020) has described the situation that women in northern Ghana find themselves, that is belonging fully to neither the natal or marital family, as an ambiguous identity and it serves to constrain their exercise of power and agency in various spheres as discussed here.

Patriarchal ideologies relegate women to less economically rewarding activities in the small-scale gold mining value chain which makes them poor. This finding is similar to Lahiri-Dutt (2011b) who established that the hyper-masculine mining industry coupled with patriarchy portray women as victims of agency with limited right over resources including land. Talensi women's participation in mining is linked to the cultural norms which do not allow them to own land. Because men have more authority over land, women's desire to own and work on their own concessions have largely been curtailed by forceful evictions and confiscation by men. As a result, women operate in vulnerable positions in mining, are marginalized, and hold less power in decision-making (Buxton 2013; McQuilken 2013; Arthur-Holmes & Busia 2021). A 31-year old and 40-year-old women during the focus group discussion indicated that:

A woman cannot own land. We can only use our husbands' lands. If your husband dies and you don't have a male child, the land is taken from you. (31-year-old FGD participant, December 2017)

Here, it's all about the men. Even my 8-month-old baby boy has more rights than me. Of course, he will inherit his father's lands, but I cannot. We are like the property of our husbands. So, you see, how can property acquire property? (40-year-old FGD participant, November 2017)

Another socio-cultural factor emerging from the pervasiveness of patriarchal practices in Talensi is the gender stereotypes that define some work as 'men only' and others as 'women only'. Traditionally, Talensi boys are socialized to be brave warriors, fearless against the odds. Any sign of physical weakness or fear in a man is unacceptable. So, some aspects of farm work such as, tending cattle, weeding in sorghum/corn or millet farms, and hunting, require much physical strength and risk and must be undertaken by men. Conversely, women take the less risky jobs such as, cooking and childcare. According to Dako-Gyeke and Owusu (2013) and Koomson (2017), masculinities in Ghana are the

direct products of the process of socialization. For instance, Koomson (2017) has argued that young children often stick to the gender roles they have been oriented to as they grow up which eventually translate into the type of work they do as adults. Concomitantly, these norms portray women as 'weak' elements who cannot perform energy-demanding jobs in SSGM. The views of a 31-year-old female respondent on gender stereotypes indicated that:

Women's main roles are cooking, childbirth and supporting the husband in his work. It's the duty of the man to take care of his wife and children by making food available. Even though these days, some of the women work even harder than the men, the onus is on the man to feed the family. If a man fails to cater for his family, he is considered a failure in society, but the same cannot be said of the woman. As for the work, we all do it but it is about who takes care of who. Even, some children work in the mines to feed their families, but that's not their duty. (31-year-old female respondent December 2017)

Another respondent informed us that;

The men here don't cook at all. There are some men who have never cooked before especially if the person is from a family that has females. In the same way, women do not dig or weed under fully grown crops; the work is physically demanding and therefore, is done by the men. But when it comes to sowing, harvesting and conveying the foodstuffs, that is typically the work of women. (38-year-old female respondent, November 2017)

The data indicate that cultural beliefs formed the basis for the construction of gender-specific roles at the household level and these are replicated in the mining areas. The expectations attached to women in Talensi culture determine what men and women can and should not do. As a result, energy-demanding tasks are designated as men's work whereas women performed less energy-demanding tasks.. This perception was visible in the mining communities where tasks such as, underground mining, drilling, blasting and crushing are regarded as laborious and are mostly performed by men while women perform less difficult and less paid tasks such as, loading, carrying, and shanking. Mkhwanazi (2014) stated that ideals and values practiced in African societies form the basis for unchallenged gender roles where people accept these roles as typical. For his part, Kwekudee (2013) who studied the custodians of the Gurushie people of the Upper East Region draws attention to how Talensi miners reconstruct patriarchal values from their society. The Talensi see the dominance of men and patriarchy in their society as a norm which makes gender roles in the mining communities uncontested. The unchallenged gendered roles at the household level are reproduced and performed in the mining communities. Consequently, as traditional leaders continue to preserve and revere cultural practices, they sustain deeply entrenched women's subordination in the SSGM sector since the gender roles are defined by norms and beliefs (Yakovleva 2007; African Mineral Development Center 2015; IGF 2018; Arthur-Holmes & Busia 2021).

The belief about menstrual blood: an exemplar of socio-cultural norms

Menstruation and menstrual blood are important cultural factors in Talensi community. Talensi people believe that menstrual blood has the power to cast out spells and disarm the *juju* or magic powers of people believed to possess them. Some respondents shared heroic stories about how menstrual blood was used in bloody conflicts to disempower *juju* holders of the opponents in the past. Insights on this disempowering valence of the menstrual blood was shared by a 63-year-old man:

Tradition is part of our life and it works effectively because we believe it. In one instance, the menstrual blood of a woman was taken and used during a bloody conflict between Tindongo and Damoligo communities in the past. In this battle, black powers/*juju* was the main defence mechanism by both communities. The battle raged for days without any side showing any sign of winning. Then an elder from the Tindongo community managed to pour menstrual blood (mixed with water) on the warriors of the Damoligo people. This made them loose their magical powers and the Damoligo army was vanquished. (63-year-old male respondent, October 2017)

Despite this, there is also a widely held belief in Talensi that, women in their menstrual periods are unclean and could even attract evil spirits. Respondents were unable to explain the rationale behind this belief from the traditional perspective. However, Christian female respondents linked the belief to an ancient Jewish tradition where women in their menstrual period were considered unclean to worship in the temple of God. Regardless of the reasons behind it, the belief which was pervasive has repercussions on women's participation in work. At the household and community levels, menstruating women are prohibited from playing the normatively assigned roles such as, cooking, going to the water points to draw water as well as sleeping with their husbands. In the mining sector, women are similarly barred from carrying out mining-related activities when they are in their menstrual period. Some respondents claimed that gold is a spirit and that spiritual rites need to be performed from time to time to ensure that it remains within reach. It was therefore argued that the presence of a menstruating woman at the mine can negatively affect their *zursong*⁴ or prospects of getting gold. This is backed by the following quotations from respondents:

I do not let my friends know any time I am menstruating. I keep this secret to enable me still work. Men often say it reduces the value of gold found, but there is no evidence on this. I do shanking when I am menstruating, but this is unknown to the male miners and because it is not known there is no problem about it. (39-year-old Female Respondent, October 2017)

Menstruating women are unclean and attract bad omens in the mines. The presence of menstruating women in the mines can cause lots of problems. For instance, the spirit of the gold can vanish, or the gold can reduce in value and

⁴ *Zursong* means good luck.

quantity. You can work the whole day, and not get anything. So, it is a serious matter. So, we always tell the women to stay away when in their period. (54-year-old Male Respondent; December 2017)

As a result, the participation of younger women in mining was limited. For instance, some employers preferred to give shanking tasks to older women workers. The practice of restricting menstruating women from participating in mining has been discussed by several authors from different jurisdictions including N'tulo in Mozambique, Suriname and Manica (Heemskerk 2000); Dreschler 2001; Kaingu 2003; Van Hoecke 2006). However, these scholars failed to establish if women still performed these roles during menstruation. Similarly, in Ghana, Ofosu-Mensah (2010), Addei and Amankwah (2011) and Arthur-Holmes and Busia (2021) have observed that traditional beliefs, norms and taboos are some of the issues which deter women from participating in mining during their menstruation. The prevalence of these beliefs leads to the concealment of menstruation on occasion.

Taboos on *shea* butter and cracking of groundnuts

The small-scale gold miners in Talensi District believe that the use of *shea* butter is conterminous in effect with menstruation around gold extraction sites. Therefore, the use of *shea* butter in and around mining sites was forbidden. According to the respondents, *shea* butter makes the gold slippery and difficult to find during the process of amalgamation. Another belief widely held by small-scale gold miners was the norm prohibiting the cracking of groundnut shells at mining sites which is believed to cause the collapse of the mines. The cracking itself is considered by miners to signify damage and the sound made when cracking groundnut shells is similar to the sound of a collapsing mine. Even though, these beliefs appear general, respondents explained that they affect women's participation more than men inasmuch as the production, use and trade of *shea* butter is culturally the sole responsibility of women. Therefore, the likelihood of women going to the mines with traces of *shea* butter is much higher than men. In the same way, the cracking of groundnuts for sale or cooking is done mainly by women and children. These taboos, therefore, limit the diverse options available to women as livelihood options.

Gendered remunerations of employees

The study revealed that the type of roles performed determined payment. Men and women received the same salary for performing the same roles and different salaries for performing different work. According to the women, except for transporting and fetching water for washing the mineral ore which they receive physical cash, shanking (sieving), which has been associated with respiratory dangers, is paid with chippings (remains of minerals ore) with no guarantee of gold. Whilst payment for loading, transporting and fetching water was determined based on distance (ranging between GHS5 and 12 GHS, that is, \$0.55–\$1.32 per trip), the quantum of chippings given to women as pay varied amongst concession owners depending on the richness of the ore. Women gather the chippings for a period of three to 5 months,

grind them into powder and wash them to obtain gold. Women in an FGD asserted that they sometimes do not find gold after several months of saving these chippings which constitutes a loss. However, majority of men's roles such as crushing, milling and washing were paid with physical cash (ranging between GHS 450–GHS 700, that is, \$49.47–\$76.95 per month, for crushing and milling, and between GHS 50–GHS 100, that is, \$5.50–\$10.99 per load washed) whilst underground workers received part of the mineral ore as payment.

It can be deduced that the gender-specific roles as determined by social and cultural taboos, norms and essentialist assumptions regarding women's abilities in the Talensi District deeply influenced aspects of the mining value chain to work in and the corresponding remuneration received. The wide variation in payment between men and women and the different forms of payment (chippings and mineral ore) affect women's economic empowerment and their ability to provide family support, an important normative expectation in this cultural setting.

Conclusions

The study is an empirical examination of the socio-cultural determinants of gender roles in SSGM in the Talensi society. The findings show that the socially assigned expectations of women, backed by cultural beliefs, form the basis for the construction of gender-specific roles at the household level. Women are culturally assigned majority of the unpaid and nurturing work and this exerts a huge toll on their time (Armstrong & Armstrong 1980; Moser 1989; Armstrong & Laxer 2005; Lokot & Bhatia 2020). These totalizing assumptions and the corresponding relegation of women to low-paying jobs are reproduced and sustained by the various norms at play within the domestic sphere at the SSGM sites. The intrinsic cultural and male orientation of the SSGM sector exclude women from accessing greater opportunities available to men such as better employment while increasing women's risk of economic and social marginalization. It is clear that women are often excluded from profitable mining activities that generate high incomes. This is underpinned by socio-cultural barriers particularly beliefs and norms entrenching masculine dominance in the ownership and control of important socio-economic resources that SSGM revolves on. Additionally, menstruation and women's culturally assigned roles as key actors in *shea* butter and ground processing are abhorred in the mining sites in Talensi culture and these militate against women's participation in SSGM.

Returning to the feminist political economy and postcolonial feminist theoretical framework developed, the findings here reverberate with the politics of gendered division of labor as influenced by male-centric assumptions and to the disadvantages of women. Male-dominant cultural norms, gender role stereotyping, and mystical taboos framed around women's menstruation combine to constrain their effective participation in SSGM. Yet, differently positioned women encounter these cultural sanctions and restrictions in diverse ways. Feminist political economy which highlights the gross invisibilization of women's paid, and unpaid work offers enormous potential to draw attention to the plight of women in SSGM, challenge the essentialist assumptions that extend a lifeline to these stereotypes and develop policies and

interventions targeted at undoing these discriminatory taboos and practices against women. In relation to transforming the unequal gendered division of household labor and in the public sphere, a starting point is a sustained engagement with the key stakeholders—Tongodaana and his elders and divisional chiefs on the restricting valence of reproducing problematic gendered binaries. This way, once they are convinced about the need to reform the gender roles, they will serve as ambassadors at the household and community levels. At a second level, heads of families and ordinary women and men need to be exposed to the discourses on limiting gendered taboos and strict adherence to normative practices. In the mining settings, targeted sensitization programs may be an important step towards reforming some of the deep-seated stereotypes regards women's abilities and their roles or that of their menstruation in constraining the discovery of gold. For the activism on undoing discriminatory practices against women to succeed, all stakeholders including the Minerals Commission, and the District Assembly in addition to civil society organizations working in the area of transforming discriminatory social norms need to be included. Although social change on this scale does not happen easily inasmuch as the norms are deeply embedded in our daily and ritual practices, a sustained approach will yield some positive results.

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Data availability The authors confirm that the data supporting the findings of this study are available within the article [and/or] its supplementary materials.

Declarations

Conflict of interest We do not have any conflicts of interest pertaining to this submission.

Ethical approval The study was given ethical approval by the Department of Planning, Kwame Nkrumah University of Science and Technology, Kumasi.

Informed consent Oral consent was obtained from the study participants before they were enrolled into the study. Participation in the study was completely voluntary and participants were given an opportunity to withdraw from the study at any point in time without losing any benefits that they would have otherwise been entitled to.

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