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UNIVERSITY OF GHANA

DEPARTMENT OF HISTORY

A HISTORY OF IRON PRODUCTION IN AKPAFU, GHANA, 1884-1957.

BY

OLIVER AMEDUME

(11007625)

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DEDICATION

I dedicate my MPhil thesis to my family, who supported me in diverse ways to pursue this dream and to all students of History.



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DECLARATION

I hereby declare that except for the references to other people's work which have been duly acknowledged, this work is a result of my own research work, done under supervision, and has neither in part or whole been presented elsewhere for another degree.

OLIVER AMEDUME

(CANDIDATE)

Sign: .....

Date: 27 August, 2025

DR. PHILIP ATSU AFEADIE

(SUPERVISOR)

Sign: .....

Date: 27 August 2025

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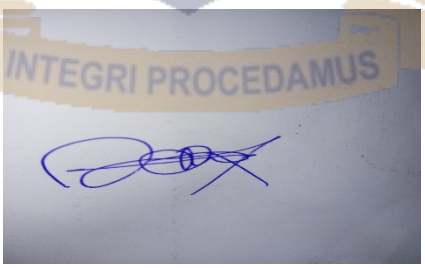
First and foremost, I would like to thank Almighty God for seeing me through this study successfully.

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Author

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Date: 27 AUGUST, 2025

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(SUPERVISOR)

Sign: .....

Date: 27 August 2025

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ABSTRACT

Indigenous cultural practices and industries in African countries, such as Egypt, Nigeria, Tanzania, and Uganda, have always been important to local communities due to their indispensable roles in the everyday lives of the local people and their ability to endure and adapt in the face of colonial encounters. This study uncovers the near-forgotten legacy of iron production in Akpafu, Ghana, during the colonial period 1884-1957. Despite its historical significance, the industry's resilience and subsequent decline and eventual collapse have been largely overlooked. Qualitative research method is employed in this study, using data from primary and secondary sources to assist me in achieving my objectives because it enables a nuanced examination of historical developments and institutional transformations that might be overlooked or underemphasized through quantitative methods alone. Therefore, the qualitative method is employed to gather rich, detailed accounts of the experiences and narratives of the study participants, providing a deeper understanding of their perspectives. This research reveals the trajectory of the Akpafu local iron production in the past, besides the importation of European iron products into the territory under study and how the imports undermined the industry's survival on one hand and its resilience on the other hand.

This thesis argues that the resilience of Akpafu iron production during the colonial era can be attributed the ritual practices of the Akpafu iron workers, combined with the technological innovations, adaptations, and the high quality locally produced iron. Conversely, the unsustainable ecological practices (ecological model), characterized by unchecked deforestation without reforestation efforts, led to the shortage of trees, the trade impact model among other factors ultimately contributing to the decline of the Akpafu iron production during the same period.

The significance of this research is not limited to its contribution to the existing body of knowledge but also reveals the complex interplay of technological, economic and social factors that influenced the industry's growth and decline. Again, it documents and preserves aspects of traditional African

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heritage, specifically focusing on the revitalization and continuation of customary practices, sacred rituals and cultural ceremonies that are integral to the identity of and continuity of African communities.



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CHAPTER ONE

INTRODUCTION

Background to the Study

The widespread adoption of metal technologies, particularly iron, can be attributed in part to the dual creative and destructive capabilities inherent in this material. When iron weapons are used in war, they become destructive tools, while they become creative when used to farm or help in domestic activities such as cutting and cooking.

According to Paul Tiyambe Zeleza, Iron production, iron technology is believed to have diffused into Africa from Western Asia, then spread to North Africa first, next was Egypt and Carthage before reaching the rest the continent. Each of these regions had its unique approach to iron work from obtaining the iron ore, building of the furnace and smelting to construction of the forge and smithing and expertise required at all these levels.[1] These activities varied from one location in Africa to another but retained some similarity index while the significance of the local iron industry remained almost the same. However, local iron industries in this region declined with passage of time.

In East Africa, iron production is known in Mwenge, Uganda prior to their colonization. The Mewenges had their distinct production processes dependent on their environment and expertise available. They also benefitted from this crucial local industry just like others before her. However, according to Louise Iles, this industry gradually declined during the colonial period between the seventeenth and nineteenth centuries. According to Louise Iles, that epoch began with the passage of new colonial government rules banning the mining of pits deeper than three feet, but for latrines and burial.[2]

[1] Paul Tiyambe Zeleza, *A Modern Economic History of Africa Vol. 1 the Nineteenth Centur*y (Dakar: CODESRIA, 1993), 174-175.
[2] Louise Iles, "Iron Production in Uganda, Memories of a Near- Forgotten Industry." 2014, 8.

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Again, the wind of iron technology is said to have reached West Africa during the first millennium according to the diffusionist approach to the spread of iron technology. However, iron smelting was noted at Nok, Nigeria around 500 BC.[3] Similarly, West Africans also had unique ways of producing iron and its wares ranging from mining the iron ore, construction of the furnace for smelting, preparation of charcoal, smelting of the ores, construction of forge for smithing and smithing itself to the human resources. The industry also declined here gradually as the locals encountered Europeans and their iron and iron products.

In Ghana, evidence of iron production is dotted across the southern and northern parts of the country predating the advent of the European in the fifteenth century. According to Esi Koah Arkoh's "A Preliminary Archaeological Study of Iron Slag and Ore Shrines at Kormantse, Central Region of Ghana," the people of Kormantse engaged in iron working in the past. They engaged in both smelting and smithing activities. That the smelting activities could be inefficient due to high iron component in slag. The remains of the slags and iron were used in constructing traditional shrines within the community.[4]

The case of a smelting site at Nasia in the Mamprugu state is a testament of iron production in Northern Ghana long before the formation of Mamprugu Kingdom.[5] Mustapha acknowledged the complex nature of iron working industry therefore needing unique organizational skills and control. He is opined that the industry in this local area was profitable and drew the attention of the political elites who seized the opportunity to control the resources involved in the iron production that is the raw materials, the labour and artisanal force and distribution network for products. The production of these social networks and structures due to the vibrant and age-old

[3] Anthony G. Hopkin, *Economic History of West Africa* (New York: Columbia University Press, 1973), 44.
[4] Esi Koah Arkoh, A Preliminary Archaeological Study of Iron Slag and Ore Shrines at Kormantse, Central Region of Ghana (University of Ghana, 2022), 168.
[5] Mustapha Mohammed, Ironworking and Political Centralization in Mamprugu: Archaeological Insights for Historiography in Northen Ghana (University of Ghana, 2022), 20.

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ironworking at Nasia and othe Mamprugu towns possibly laid the foundation of the political centralization of Mamprugu.[6] However, both Mustapha and Arkoh did not shed light on the decline or collapse of the local industries in their study areas to tell how and why the decline and subsequent collapsed might occurred.

Akpafu in the Volta Region of Ghana is one of the places renowned for iron production. According to my respondents, Akpafu people's metallurgy predates colonialism.[7] The Akpafu iron production flourished and her indigenes reaped the economic, social and political dividends of their local iron industry before and during the advent of the European colonial masters in the region somewhere in the eighteenth century. Pole among other things said the once vibrant Akpafu local iron industry declined due to the infiltration of European iron bars and iron wares on the coast of Ghana. Just like his compatriots in other regions, he did not shed much light on the resilience of this local industry. This thesis is situated within the pre-colonial and colonial context from 1884 to 1957.

The Akpafu people lived in the Northern part of the Volta Region of Ghana, currently the Oti Region of Ghana. The rich tradition of iron production of the Akpafu people predated the colonial era. This indigenous industry was essential to their everyday life because it supported their cultural and social customs in addition to their economic well-being. The iron industry of the Akpafu people provided them with tools, weapons and ceremonial objects and was intricately linked to their social system.[8] The iron enterprise gave an employment opportunity to the interested people in the community. Incomes from this venture enabled adult men to contract marriages, while

[6] Mustapha Mohammed, Ironworking and Political Centralization in Mamprugu: Archaeological Insights for Historiography in Northen Ghana, 215- 216.

[7] Interview with Honourable Agbeko at Mempeasem, 20/9/2024.
Interview with Efo Tailor at Todzi, 10/10/2024.
Interview with Efo Frank Dadza at Todzi, 12/10/2024.

[8] B.S. Agbenuvor et al., "Akpafu-Todzi Iron Making Industry-The Past, Present and Future. Iron Ore. Melbourne." The Australian Institute of Mining and Metallurgy (2019). 843-852.

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musical instruments such as the *gong-gong* and castanets made from the iron industry were played to entertain the community and for religious ceremonies.

The *Mawu*[9] (Akpafu) is an integral component of the Northern Ewe, specifically the Ewedome, which has been referred to as Krepi or Crepe by the Europeans. Historically, Ewedome territory formed part of the Slave Coast, a region notorious for its involvement in the transatlantic slave trade. Geographically and economically, this territory is situated within the Volta Basin economy, a region characterized by a diverse array of ethnic groups, including the Ewes, Guans and various remnant groups, with the Ewes being the predominant ethnic entity shaping the cultural, economic and social fabric of the region.[10] The Akpafu people are a subgroup of the Guan ethnic group, residing in this culturally diverse area, contributing to the rich cultural heritage and complex social dynamics of the Volta Basin economy.

The Akpafu town was founded by the Akpafu people (a segment of the Guans in modern Ghana).[11] They developed a thriving economy based on agriculture, hunting and iron works. Primarily, the Akpafu people were renowned iron producers, a skill they acquired from their ancestors and passed down from one generation to another.[12]

The people of Akpafu speak *siwu.* They had a distinct culture with a complex societal structure and spiritual heritage. They are located in the Oti Region of Ghana. According to Mr. Gilbert Owusu, their ancestors moved to modern Ghana through Cote d'Ivoire in the 14th century and first settled at Drobo, Gyaman, Nweneme and Duaso.[13] In search of iron ore, which they exhausted at Duaso, they migrated towards the east of the Volta River basin. They broke into two groups; one

[9] The Akpafu people were originally called "Mawu." Their present name "Akpafu" is said to be given them by the Ewes who heard the *kpafu kpafu kpafu their bellows made during iron smithing on this hills. Another account said the name was derived from the Mawu women in the market who used to say kpa fu me, which translates as gather and heap it for me. See* 'The Hammers of Mawu' *by Pole Len Michael.*
[10]Wilson K. Yayoh. "German Rule in Colonial Ewedome (Ghana), 1890-1914." African Notes 39, no.5 (2015): 129.
[11]Interview with Mr. Gilbert Y. Owusu at Mempeasem, 30/09/2024.
[12]Len Michael Pole, "The Hammers of Mawu: Ironworking Traditions in the Togo Hills, Ghana." African Archaeological Review 27, no. 1 (2010):44.
[13] Interview with Mr. Gilbert Owusu at Mempeasem, 30/09/2024.

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group went towards modern-day Ashanti, and the other settled at Aframso. This Aframso group comprised Santrokofi and Likpe. As sojourners, like any other ethnic group, they once lived with the Akwamu people near the Volta River in the neighbourhood of modern Agyins Township. With growing tensions with the Akwamus while serving them as slaves, they ran from them, crossed the river at Senchi and settled at Asikuma, Peki, Awudome and Danyi river basin.[14]

In search of ore-bearing rocks, the Akpafu found themselves at Awubeame, Togo Plateau in the early 15th century.[15] They began to live a more organized life here. They were living in fifteen or sixteen communities that comprise clans such as *Majiretei, Madabadjai, Mantendi, Mawreh, Maleza, Matedua, Agbari, Agbo, Dogua, Makoh, Magadagbe, Kpadjia, Igbagba* among others.The society was stratified into clans where each clan had its own leader-clan head and a body of elders who attended to the welfare of their members. Chiefship among the Akpafu people rotated among those clans such as *Majiretei, Madabadjai, Mantendi, Mawreh, Maleza, Matedua, Agbari, Agbo, Dogua, Makoh, Magadagbe, Kpadjia, Igbagba,* among others.

The chains of mountains and valleys offered natural protection to the Akpafu. This new settlement was difficult to access; the steep and rugged mountain slopes prevented roaming tribes from attacking it. In this conducive and peaceful atmosphere, the people of Akpafu instituted chieftaincy on a rotational basis. Their agricultural activities included crop cultivation such as rice, cocoa, maize, plantain and livestock rearing.[16]

Gradually, the shortage of ore nearing rocks in this new settlement also caused the clans to look elsewhere for ore. Finally, they found iron-bearing rocks again, not too far from Awubeame, hence their new habitat, Akpafu, till date.

[14] Interview with Mr. Gilbert Owusu at Mempeasem, 30/09/2024.
[15] Interview with Honourable Agbeko at Mempeasem, 20/09/2024.
[16] Interview with Efo Koffie Gbede at Odome, 16/10//2024.

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The Akpafu people once called themselves Matrekpi and Mawu or Kawu, but distant traders who established contact with them in their present home call them the Akpafu. This name is onomatopoeic-'kpafu kpafu,' the sound from the bellows in a blacksmith's forge or shop. Akpafu Todzi is the traditional capital of Akpafu on top of the chains of mountains surrounded by other towns such as Odomi, Adokor, Sokpo and Mempeasem. These folks are surrounded by the Twi-speaking Akan, the Guan-speaking Nkonya and the Ewe.[17]

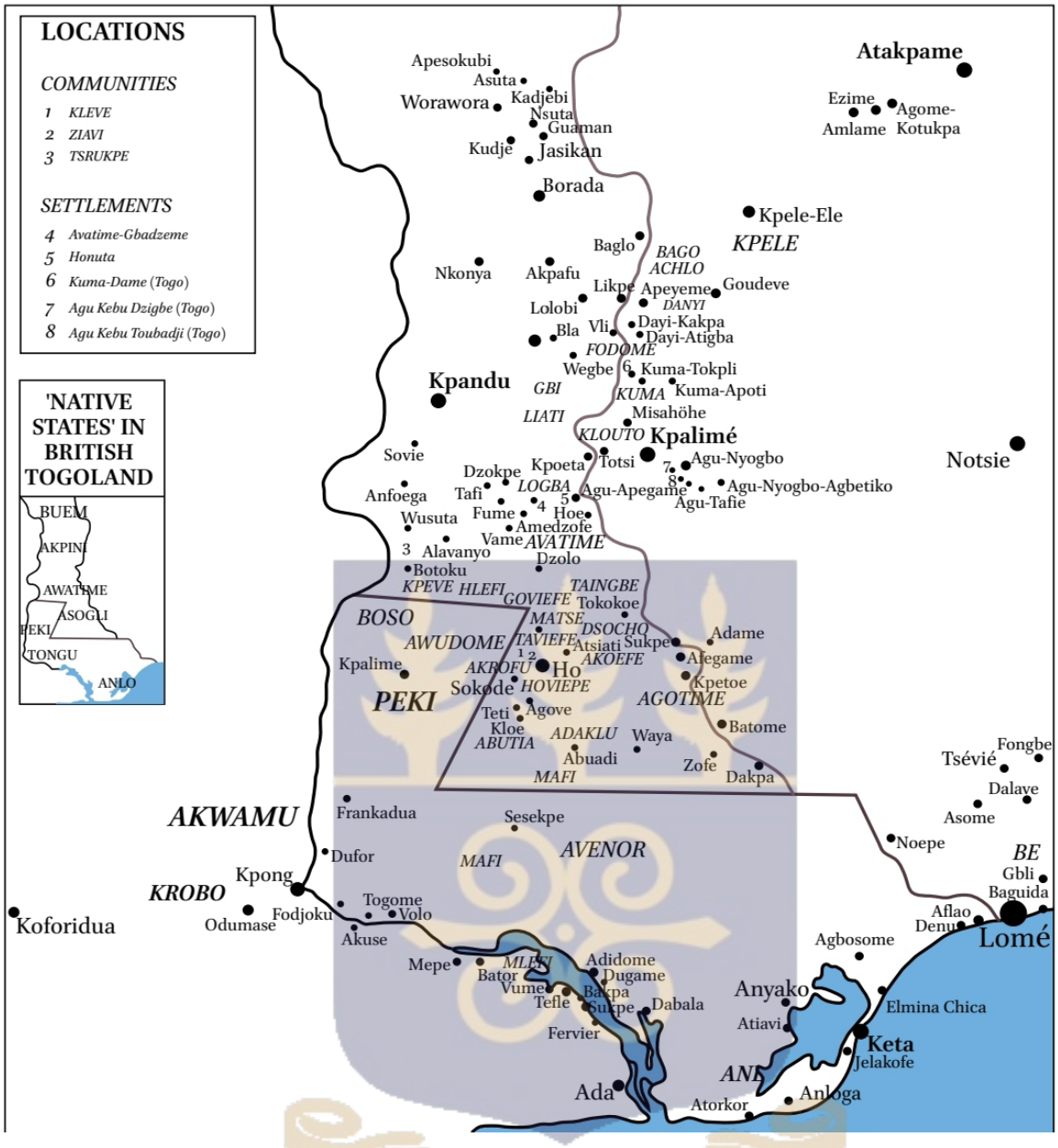
On the other hand, Pole gave another version of the etymology of the name Akpafu for the Mawu people. According to him, the Mawu women were said to have been using a phrase, "kpafume" in their market trading. This phrase translates to "gather and heap it for me." Their culture also embodied African traditional worship, elaborate rites of passage (marriage, naming ceremony, and funeral-rites), and entertainment including storytelling, music and dance, which all culminated in shaping their cultural and social practices.[18]

Prior to their contact with Europeans, people of Akpafu interacted with neighbouring towns and cities such as Krachi, Hohoe, Kpandu, and Akuapem, among others.[19] The interactions among them were in the areas of trade and commerce where they exchanged or bought and sold essential items of trade such as metal wares, salt, smoked fish, local rice and yams, among others.

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[17] Interview with Mr. Gilbert Owusu at Mempeasem, 30/09/2024.
[18] Pole, "The Hammers of Mawu," 44.
[19] Interview with Mr. Gilbert Owusu at Mempeasem, 30/09/2024.

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Gold Coast and Togo Map Depicting Various Settlements Mentioned in the Study Culled from Yayoh's Work

According to Pole, Akpafu iron working processes can be classified into three phases: mining, smelting and tool manufacturing.[20] About mining, the people dug complex tunnels within the ironstone mountains. The tunnels were of various orientations, including vertical shafts with lateral galleries as well as sloping and horizontal passages. The iron ores were mined with iron-shod wood

[20]Pole, "The Hammers of Mawu," 48.

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sticks (spear shafts). Two classes of workers were engaged in the mine; one dug and struck the rock with their picks, and the other collected the usable ore into baskets and took them to the entrance of the mine.[21] In its raw state, it was conveyed to the smelting area.

At the smelting area was the furnace (a tall shaft with several vents in or near its base for slag runoff and air inlet), which contained hot burning firewood for refining the ore when placed in it. *Manilkara multivenervis, a* specific tree species *(kuredziri in Siwu),* was utilized for charcoal production for smelting. The wood was fired through a process involving the construction of a grid of freshly cut logs over a lit firewood in a shallow pit. The fire was then covered with green leaves and earth, remaining unventilated for a period of up to eight days.[22] The refined ore is moulded into balls or slabs for sale or use. Once the ore is prepared into iron balls or slabs, the blacksmiths use it to produce durable iron tools. At the forge centres, the blacksmiths heated the ore in clay furnaces with charcoal to produce a spongy bloom. This is hammered and shaped into desired forms with the aid of anvils and bellows. The iron is quenched in water to temper it. The result of this process is tools such as hoes, cutting tools, spears, axes and arrow heads for domestic utilization and the market. The musical instruments made from iron, such as castanets and the 'gong-gong', were used with songs during entertainments and religious ceremonies. Besides, the 'gong-gong' were used with song during entertainments and religious ceremonies. Again, the" gong-gong" was used to communicate messages from the chief and his elders to town folks [23]

Some of the Akpafu indigenes took those products to sell in markets outside Akpafu. Some Togo, Krachi, Ewedome and Asante traders came to purchase these products and resold them in their

[21]Pole, "Hammers of Mawu," 57.
[22]Ibid., 59.
[23]Interview with Mr. Gilbert Owusu at Mempeasem, 30/9/2024.

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various communities to their consumers.[24] This cycle kept the industry flourishing until the Akpafu came into contact with the Germans in early 1880s.[25]

The Akpafu local iron production was mainly a part-time occupation.[26] The workers were farmers who engaged in the iron works only in the non-farming season to supplement their basic source of livelihood. As done in other parts of West Africa, where specialists formed guilds to protect their trade, including regulation of entry to the arts, methods of production, and standards of workmanship and pricing of their products,[27] the specialists in the iron production in Akpafu also formed guilds of iron workers.[28] The duties of the Akpafu iron workers' guilds were not different from those found in other parts of West Africa. They also regulated entry to the arts, methods of production, and standards of workmanship and prices of their products.

Culturally, the Akpafu regarded iron work as sacred, hence their observance of certain practices (rituals) in order to keep the iron production alive. From the commencement of the mining of the iron ore to the building of furnace and forging of the iron, specific rites were performed and taboos observed to safeguard the industry: corn flour mixed with water in one calabash and palm wine poured into another, were used to pour libation and prayers said, thanking the gods and the ancestors for life. They requested strength, protection and success before the commencement of any activity related to the iron works. Again, the construction of the furnace also witnessed special rites, of placing palm kernel and special herbs in the foundation of the furnace to give it strength to produce iron.[29] The furnaces were sited at a location out of the view of women since they believed they might malfunction when seen by a woman. Men who were engaged in the smelting

[24]Pole," The Hammers of Mawu," 48-57.
[25]Wazi Apoh, *Revelations of Dominion and Resilience: Unearthing the Buried Past of the Akpini, Akan, Germans and British at Kpando, Ghana* (Legon-Accra: Sub-Saharan Publishers, 2019), 4.
[26]Interview with Honorable Agbeko at Mempeasem, 20/9/2024.
[27] Hopkin, *Economic History of West Africa*.
[28]Interview with Efo Tailor at Todzi, 10/010/2024.
[29]The elders of Akpafu believe that herbs have creative and destructive powers if used for an intended outcome. By placing the palm kernel and herb in the foundation of the furnace during the construction stage, it fortifies the furnace to produce quality iron.

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process at the site dared not sleep with the same woman prior to the smelting, for the sequel is beyond producing bad or nothing at all from the smelting process. More so, the anvil of the blacksmith was considered a sacred female and must not be defiled. Therefore, the blacksmiths and their assistants abstained from sexual relationships prior to forging in their shops. It is believed that sexual intercourse before working on the anvil would defile it, and this would affect the quality of the work done.[30]

Statement of the Research Problem

The history of iron production in Akpafu during the colonial period has been largely forgotten in the historical literature of the Volta region of Ghana. This study aims to help fill the gap by examining the historical fluctuations of the industry during the period under review.

Objectives

1. To examine the factors that influenced iron production in Akpafu during the period 1884-1957.

2. To identify and analyse the technological innovations and adaptations that emerged in the Akpafu iron production between 1884 and 1957.

3. To analyse the impact of iron production on the local economy.

Research Questions

1. What factors influenced Akpafu's iron production and development?

2. What technological innovations and adaptations emerged in Akpafu's iron production between 1884 and 1957, and how did they impact iron production?

3. How did the iron production affect the local economy?

[30]Interview with Honorable Agbeko, 20/09/2024.

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Significance of the Study

This study provides an in-depth examination of the historical development and transformation of iron production in Akpafu, shedding light on the intricate dynamics that shaped this key industry during the colonial period. By meticulously analyzing the evolution of Akpafu's iron production, this research reveals the complex interplay of technological, economic and social factors that influenced the industry's growth and decline.

It will also enrich our understanding of the economic and technological history of the Akpafu people of Ghana, offering fresh perspectives and new insights that build upon and expand existing knowledge. By exploring the intricacies of Akpafu's iron production and its impacts on the local economy, this research will provide a more nuanced and detailed understanding of the historical context and development of this valuable industry.

The research will also inform and shape policy initiatives that foster growth and protection of local industries, providing evidence-based recommendations to promote their competitiveness, sustainability and contribution to the national economy. By identifying key challenges and opportunities, this study will help policymakers develop targeted strategies to support local industries, enhance their global competitiveness and ensure their long-term viability.

This research aims to document and preserve aspects of traditional African heritage, specifically focusing on the revitalization and continuation of customary practices, sacred rituals and cultural ceremonies that are integral to the identity of and continuity of African communities. By exploring these enduring customs, the study seeks to contribute to a deeper understanding and appreciation of Africa's rich cultural legacy, while also promoting its relevance and significance in contemporary society.

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Conceptual Framework

The conceptual framework for this research posits that the intersection of traditional iron production practices and colonial influence in Akpafu, Ghana, will reveal a complex dynamics of cultural resilience, adaptation, and transformation, 1884-1957. This framework anticipates that the study will illuminate the agency of local iron producers in navigating technological innovations and colonial pressures, shaping the trajectory of iron production in the region.

Akpafu iron production is said to have been preserved in the cultural practices and traditions of the people in the past. The Akpafu believed that iron working was a sacred art, passed down from their ancestors whom the gods entrusted with the knowledge and skills of iron works.

Due to this, certain rituals and taboos were observed to safeguard this valuable enterprise. For instance, libation is poured, and prayers said before the erection of a furnace for refining the iron, just as it is done preceding the mining of the ore. Men were also forbidden from engaging in sexual relationships with their partners during the smelting process, while women were restricted from seeing the smelting process.[31]

Again, the environment might also preserved the iron production. The region is rich in iron ore deposits due to its geographical location (mountainous area, large rocks and fertile land that supports plant growth). The abundance of trees in the area provided the locals with the necessary energy (firewood or charcoal) to continuously fuel the fires for ore extraction and smelting.[32]

In furtherance, technologically, the Akpafu had the technical know-how to mine the iron ore, smelt it and produce goods from it. Pole observed the contention among scholars in his work over the malleability of ores mined at Akpafu. The pioneer researchers asserted that the amount of phosphorus in the Akpafu ore would make it brittle, but Pole established that such ores exist in

[31]Pole, "The Hammers of Mawu," 59.
[32]Ibid., 58-59.

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West Africa and were successfully smelted by carefully preparing them.[33]The Akpafu iron workers' technique of making the brittle ore malleable though with much effort also kept this industry functioning for quite a long time.

The economic dividends of the Akpafu's iron production perha ps also preserved this industry for a while. The iron production in the Akpafu community was a viable economic venture for the local folks. The mining, smelting and sale of iron and iron products were a source of employment to the Akpafu people. They traded the iron for other commodities with the Akwapem and Ewedome people. This also brought them into contact with the Asantes, who depended on them for their iron for martial and agricultural purposes.[34]

Also, iron and iron tools made by the Akpafu local artisans were traded with people from Lome (Togo) on barter and later for currency. The continuous demands of iron and iron tools by neighbours near and far meant there must be a constant supply to keep the cycle in motion.

Again, technological change and innovation were possibly responsible for the industry's resilience in the past. Technological change happens when a new technique is adopted in production, expanding the existing range of techniques in a particular field. This change encompasses two key processes: invention, which creates a novel technique to accomplish a specific task, and innovation, which marks the first practical application of that new technique in a production process.[35] Technological innovation in this context is the development and execution of new or improved techniques to enhance the efficiency, quality and sustainability of iron production. This may encompass advancement in smelting and refining processes, furnace design and operation and iron alloy development.[36] In effect, Technological change is the overall progression or

[33]Interview with Honourable Agbeko at Mempeasem, 20/09/2024.
[34]Interview with Mr. Gilbert Owusu at Mempeasem, 30/09/2024.
[35]Afeadie Philip Atsu, Technological Change and Continuity in West African Handloom Weaving, C1300-1980: A Case Study of Southern Ghana. 64.
[36]See generally Bryan Jeffrey Dean, *Technological Innovation: Creating and Sustaining an Innovative Organization* (New York: Springer, 2014).

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advancement in technology over time, influenced by scientific breakthroughs, market needs or societal pressures. It represents a fundamental shift in how things are done, products are created, or services are provided, whereas technological innovation is the specific process of introducing and applying new or enhanced technologies, products, or integrating novel solutions that bring value to individuals, businesses or societies at large.

The adoption of new techniques in iron production a possible contributory factor to the resilience of Akpafu's iron industry, allowing it to adapt to changing circumstances, improve efficiency and maintain competitiveness. This, in addition to the aforementioned conditions could have enabled the industry to survive for a longer period.

Historiography

Len Michael Pole explored the history of iron work of the *Mawu*, Akpafu people from the seventeenth to twentieth centuries. He highlighted the economic and political importance of the iron industry to Akpafu and her neighbours. His works centred more on the archaeological evidence of the iron production in the past among the *Mawu* while I focus on the historical trajectory of the Akpafu iron enterprise.

He further observed that the Akpafu iron industry was in fierce competition with foreign products from Germany and Britain between seventeenth and eighteenth centuries which gradually crippled the industry.[37]This phenomenon is in agreement to Afeadie's thesis, that vibrant local cloth industries in Ghana at a point in time were threatened by powerful foreign competitors but survived due to some unique factors such the social importance of the handloom cloth and technological change in the production of handloom cloth, demand for particular patterns and weaves of handloom cloth among others.[38]

[37] Pole, *"The Hammers of Mawu*," 50.
[38] Afeadie, Technological Change and Continuity in West Africa Handloom Weaving, 58-63.

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Also, Amenumey also agreed with Pole that indigenous industries in Ghana exist from antiquity and iron industry is one of them. That this industry cuts across Ghana: Northern Ghana, Brong Ahafo, Asante and Volta Regions due to abundance of rich iron ore deposits or laterite crust containing iron oxide. He briefly described iron mining, smelting and blacksmithing unlike Pole's elaborate description of the Mawu people's iron industry. [39]That is to say Amenumey could not give a detailed account of iron production in Akpafu, the nitty-gritty of the iron production processes were missing in his work but for the acknowledgement of this once vibrant enterprise in Akpafu and its positive impacts on the actors involved.

Amenumey agreed with Pole on the socio-political and economic essentials of this iron industry among the Ghanaians. He also admitted that the European importation of iron bars into Ghana from the seventeenth century onwards contributed to the gradual decline of the local iron industry in the country.[40] Amenumey differed from Pole on the ground that he only summarized the history local iron industry in the whole of Ghana in the past, whereas Pole focused on the Mawu, Lolobi and Santrokofi people, giving further details on their local iron industry in the past.

Pole's study lumped together the Mawu (the people of Akpafu), Lolobi and Santrokofi, perhaps due to geographical proximity, same ancestry and linguistic factors, but I am particularly interested in Akpafu because the best ore came from the Akpafu, hence the quality of their products in competition with foreign products on the market.[41]

[39] D.E.K. Amenumey. *Ghana, a Concise History from Pre- Colonia Times to the 20th Century* (Accra. Woeli Publication, 2018) 87-88.
[40] Pole, "The Hammers of Mawu,"72.
[41] Ibid.," 72.
Philip Atsu Afeadie , *Foundations of Agbozume: The Keta-Someawo in Ghana, A.D. 1000 2023 -1930* (Accra: Golden Images, 2023), 18.

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Again, Pole and Amenumey discovered that the Akpafu local iron industry faced foreign threat and began to decline gradually from the seventeenth century, but they failed to throw more light on how the industry survived for ages before collapsing. This I intend to investigate.

In a related development, Louise Iles exploration of traditional iron production in Mwenge, Uganda showed a gradual decline of iron production in Mwenge during the colonial period between the seventeenth and nineteenth centuries. According to Iles, this epoch began with the passage of new colonial government rules banning the mining of pits deeper than three feet, but for latrines and burial.[42]This ban on digging deep trenches obstructed the prospect of iron production since iron ores were mined underground by the local smelters.

On the other hand, both Iles and Pole shed light on the creative potentials of iron production in their respective areas of study, Mwenge and Akpafu. The agricultural tools produced led to the expansion of agriculture, increased sedentism and the growth of towns and cities. Also, strong and durable weaponry manufactured for the army led to the rise of complex political systems. Regardless, none of these scholars highlighted the destructive potential of the iron production during the period under study. I set out to explore the destructive potentials of iron production in Akpafu from 1884 to 1957 and inquire if this had contributed in any way to the collapse of the once vibrant local iron industry.

James R., Dankwah, Eric O., Baah, James B., Dankwah, Bernard S., Agbenuvor, Bismark Amankwaa-Kyeremeh, and Koshy, Pramod researched how to make the Akpafu iron usable on a large scale in 2019. They investigated the chemical composition of the Akpafu iron ore and how to successfully reduce the slag and make it more efficient in iron production.[43] Their work did not

[42]Louise Iles, "Iron Production in Uganda, Memories of a Near- Forgotten Industry." 2014, 8.
[43]James R. Dankwah, Eric O. Baah, James B. Dankwah, Jessica. Dankwah, Bernard S. Agbenuvor, Bismark Amankwaa-Kyeremeh and Pramod Koshy, "Production of Iron Nuggets From the Akpafu-Todzi Iron Ore and Artisanal Ferrous Slag Using Post Consumer Thermosets(Waste Electrical Sockets) as Reductants," Ghana Mining Journal 19, No. 2 (2019): 41-49.

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consider the origin of the people whose iron ore they came to study. Besides, the cultural, social, political and economic lives of the Akpafu were overlooked. Again, the impact of the iron ore on the people of Akpafu and how the industry came to a halt did not feature in their study as I set out to explore.

Similarly, Travieso and Westland also argued in their research on the resilience and decline in local textile industry in Northern Nigeria that the Northern Nigerian's local textile industry was resilient during the colonial era despite foreign competition from Manchester because of the high quality of the local loom woven textiles which made it most preferred by Nigerians, low opportunity cost of dry season labour and technological innovation, among others[44]. The local textile industry gradually declined in some areas as in the case of the Akpafu iron production. The reasons for the resilience of the Northern Nigeria's local textile industry were explored, but restricted to the local cloth industry and Northern Nigeria. Since Ghana and Nigeria shared a common culture and lived under a common colonial master in the past, the factors of resilience of Ghana's local industry will not be far different from those of her neighbour, Nigeria. This thought can only be authenticated by researching into another significant local industry, such as iron production in Akpafu in Ghana.

Rattray in "The Iron Workers of Akpafu" agreed with Pole and Amenumey that the Akpafu people were renowned iron workers in Ghana. He described the iron work of the Akpafu people under three thematic areas: the mines, the smelting furnace and the blacksmith shop, his tools and articles manufactured in agreement with Pole's work.[45] Rattray did not include the history of the origin of the Akpafu people and their culture**.** It is important to note that Rattray's account, while valuable in its detailed description of iron production techniques, overlooks the broader socio-economic

[44] Emeliano Travieso and Tom Westland, "What Happened to the Workshop of West Africa? Resilience and Decline of Handicraft Textiles in Colonial Northern Nigeria," The Economic History Review, 2024, 1.
[45] R.S. Ratttray, "The Iron Workers of Akpafu," The Journal of the Royal Anthropological Institute of Great Britain And Ireland, 46 (1916):432.

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and political dimensions of the iron enterprise as it related to the Akpafu people and their neighbors. His narrative is narrowly centered on the processes of smelting and forging, without adequate consideration of how this once-thriving industry shaped patterns of trade, social organization, or political power in the region.

Furthermore, Rattray gives little attention to the themes of resilience and decline that characterized the trajectory of the Akpafu iron industry. By focusing almost exclusively on the technical aspects of production, his work omits equally significant externalities—such as the cultural meanings attached to ironworking, the economic implications for both local communities and neighboring groups, and the broader questions of survival and eventual decline of this important enterprise.My own study is positioned to address these gaps by moving beyond the limited scope of Rattray's analysis. In doing so, it seeks to provide a more holistic account of the Akpafu iron industry—one that integrates cultural, economic, and political perspectives with the technical processes of production.

Paul Tiyambe Zeleza in *A Modern Economic History of Africa* had described most of Africa's local industry: iron, pottery, salt mining, gold and copper mining, farming, among others. For lack of space, his description of the countless local industries in Africa in the pre-colonial and colonial epochs turned out to be a synopsis of those rich and once vibrant local industries in Africa rather than an elaborate account about them. Zeleza's information on the local iron industry in Ghana in the Southern and Northern parts (which included the Akpafu) did not deal with the production processes and the value chain thoroughly. For instance, the rituals and taboos that were observed during the iron production in Akpafu were omitted, the political importance of it and how those iron bars and tools were traded in the various mark ets were inadequately covered.[46] He observed that the quality products from African local industries, which facilitated internal and external

[46] Zeleza, *A Modern Economic History of Africa,*180.

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trades in Africa, and the absence of European counterpart products initially in the past, preserved those industries. I intend to fill these gaps in his work, relying on other secondary sources on this topic in addition to oral accounts by respondents and some archival materials from the Public Records and Archives Administration Department in Ghana at Accra and Ho respectively.

Goucher attempted to find a new model to explain the decline of West African iron smelting, having described the labour-intensive iron smelting in West Africa and the trade-impact model. The details of technical know-how in West Africa in regard to iron production, its social, political and economic impacts on the local people and resilience of the industry were not covered in Goucher's work.[47]My goal is to explore all those missing links in his findings and apply his novel cause for the decline of West African iron industries (ecological model) to the case of Akpafu iron production and investigate it to a logical conclusion.



[47] Candice. L. Goucher, "Iron is Iron Til it is Rust: Trade Ecology in the Decline of West African Iron Smelting," The Journal of African History 22, no. 2 (1981): 179-189.

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METHODOLOGY

This research will utilize a qualitative research method. According to Creswell, the qualitative method is an approach designed to explore and gain a deeper understanding of the meanings and interpretations that individuals or groups assign to a particular social or human problem. This research process characterized by a flexible and iterative approach, where questions and procedures emerge and evolve over the course of the study. Data collection typically occurs in the participant's natural setting, allowing researchers to gather rich and contextualized information. The analysis of this data involves an inductive process, where specific details and observations are used to build towards more general themes and patterns. Ultimately, the researcher plays a crucial role in interpreting the meaning of the data, seeking to uncover meanings, motivations, and experiences that shape the phenomenon under study.[48]

Through this approach, I seek to cultivate a detailed and contextualized understanding of the research topic, one that is deeply rooted in the participants' own perspectives and lived experiences. The choice of this method arose from the fact that it will aptly uncover the history of the Akpafu local iron industry without producing statistical data in order to do the analysis inherent in this study. The analysis of this study will be centred on Akpafu local iron production in the colonial era utilizing both primary and secondary sources.

Primary sources here consist of materials from the Public Records and Archives Administration Department (P.R.A.A.D), Ho. The archival materials are essential in this study because they also provide valuable information for filling some of the gaps I identified and assist me in understanding and interpreting my findings about this research. Archival documents include some

[48]John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* (Thousand Oak, California: SAGE Publications Inc., 2009), 1.

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monthly and annual reports and directives on Akpafu Native Affairs. For instance, VRG/1/147: "Akpafu Native Affairs 1951-1955" provides information on the case of Lolobi, a component of Akpafu petitioning the Jasikan-Buem state Council for autonomy because of alleged unfair treatment and suppression from the then Akpafu chief. This file is essential to this research project as it serves as evidence that the Lolobi, Santrokofi and Akpafu were once a unit and engaged in iron production before their separation.

Annual directive from the Ministry of Interior labelled VGR/1/415 Arms and Ammunition (Amendment Regulations) 1954 and 1952 is also relevant. This dealt with the law on the acquisition of import licenses for arms and ammunition and the kind of guns to import into the Gold Coast. This is important because it shows the influx of guns and ammunition into the colony, which competed with the local ones manufactured by the local manufacturers from Alavanyo who were believed to have acquired quality iron and blacksmithing skills from the Akpafu people[49].

Additionally, there are materials from the Public Records and Archives Administration Department (P.R.A.A.D), Accra, labelled ADM 39/1/567 Akpafu Native Affairs 1946-1947 and ADM 39/5/45 Bremen Mission in Ghana and her operations in the Volta Region and German Togoland. These records mentioned the traditional authority that exists in Akpafu land. This authority predated colonialism, met colonialism and survived in managing the local affairs of the Akpafu people.[50]The Bremen Mission from Northern Germany brought a new religion, Christianity to the then German Togoland and subsequently Trans Volta Togoland and then, the Gold Coast. It is widely accepted that the Bremen mission's presence in this area, which kept

[49] Interview with Efo Tailor at Akpafu Todzi, 10/10/2024.
Interview with Mr. Gilbert Owusu at Mempeasem, 30/9/2024.
[50] PRAAD, ADM 39/1/567 Akpafu Native Affairs 1946-1947

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changing name under various European rulers, contributed immensely to the social, economic and political developments of the Akpafu people and her neighbours.[51]

These archival materials complement other sources such as oral interviews.

Oral tradition is essential in this study. According to Jan Vansina, "oral traditions are documents of the present. Yet they also embody the message from the past. Oral traditions are therefore the representation of the past in present.''[52] This is essential because oral traditions serve as primary sources for historical research, providing firsthand accounts or stories passed down through generations. The Akpafu oral traditions contain local knowledge, techniques and practices related to iron working, which will be valuable for comprehending the historical iron production of the Akpafu people. Additionally, oral traditions can offer insights into the cultural context of iron working, including social, economic and symbolic importance. In fact, relying on oral traditions as a source of data in this research would enable me to bring the past into the present.

I used interviews with respondents and the snowball sampling technique to reach my respondents who are mostly indigenes of Akpafu: retired blacksmiths, elderly men and some royals of the Akpafu community. I interviewed Mr. Frank Dadza, a retired civil servant and custodian of some of Akpafu's iron relics, Honorable. Agbeko, a retired teacher and former Assemblyman of the Akpafu local area; Gilbert Owusu, a retired teacher; Efo Yao Tailor, a farmer and local historian; Efo Koffie, a retired blacksmith of Akpafu Odomi and Togbe Koku, an elderly man and a farmer.

I used open-ended questions to solicit information on the Akpafu local iron industry during the colonial era. This is due to the fact that I did not ask 'yes or no' questions. Neither could I restrict

[51] PRAAD, ADM 39/5/45 Bremen Mission.
[52] Jan Vansina, *Oral Tradition as History* (Madison: University of Wisconsin Press, 1985).

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my respondents to a specific answer as characterized by closed-ended questions. I intend to allow my respondents to give me ample information from which I would choose my specific answers.

In furtherance, I made use of secondary sources on Akpafu iron production and some local industries in Africa during the pre-colonial and colonial periods. These secondary sources enabled me to comprehend the historical arguments about resilience and in some cases, the decline of local industries in Africa during the colonial era. More so, they were sources of supplementary information which enabled me to make balanced arguments in this study. The secondary sources include books, journal articles, unpublished documents and theses relevant to the study.

Limitations of the Study

During my study, I encountered challenges such as missing and inadequate archival materials, as well as limited availability of respondents due to work pressure or ill health. Additionally, memory became a challenge on the part of my respondents who were above sixty years. They had difficulty in recollecting some of the traditions of the past. This phenomenon echoed Lynn Abram's memory is "not a storehouse where one can search round and find a ready-formed story."[53] Old age affected their recollection of specific dates of movements of the Akpafu people to their present home, detailed accounts of the construction of the smelting furnace and smelting itself. To address these issues, I complemented the archival gaps with oral sources and additional written materials to fill the void and rescheduled interviews to accommodate the respondents' convenience, after emphasizing the value of their contributions to the study to them. I again cued my respondents to enable them to remember.

[53] Lynn Abrams, Oral History Theory (London: Routledge, 2010), 79.

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Organization of the Chapters

This thesis is partitioned into five chapters.

Chapter One introduces the study on Akpafu iron production, providing an overview of the research context, objectives, and significance. This sets the stage for the investigation, highlighting the importance of understanding the historical and cultural context of Akpafu iron production.

Chapter Two explores technological innovations and adaptations in Akpafu iron production. It examines technological innovations and adaptations that characterized Akpafu iron production, highlighting the ingenuity and resourcefulness of local iron producers. The analysis focuses on the development and refinement of traditional iron production techniques, as well as the incorporation of new technologies and methods.

Chapter Three discusses the profound impact of colonialism on Akpafu iron production, exploring the ways colonial policies, economic systems, and cultural influences transformed the industry. The analysis focuses on the complex interactions between colonial powers and local producers, highlighting the tensions between traditional practices and imposed changes.

Chapter Four examines the decline of Akpafu iron works. It examines the factors that contributed to the decline of Akpafu iron production, with a particular focus on colonial era. The analysis explores the interplay between environmental, economic and socio-political factors that led to the decline of this once-thriving industry.

Chapter Five provides a summary of major issues addressed in the study. It provides a comprehensive summary of the major issues addressed in the study, highlighting the key findings and insights gained from the research. This chapter synthesizes the main themes and arguments presented in the preceding chapters, offering a concise overview of the study's contributions to the understanding of Akpafu iron produ

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Ethical Clearance

Ethical clearance was obtained from the University of Ghana's Research Ethics Committee for Humanities, ECH 011/24-25, to conduct this study.

All interviews relating to this research were conducted by me, the researcher, Oliver Amedume.



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CHAPTER TWO

TECHNOLOGICAL INNOVATIONS AND ADAPTATIONS IN AKPAFU IRON PRODUCTION

Introduction

This chapter examines the evolution of iron production technologies and innovative responses employed by the local iron producers.

During the precolonial period, the Akpafu iron producers employed traditional techniques to mine iron ore and produce iron tools. These traditional technologies included charcoal-based smelting, bloomer forges and hand-tool production.

Pole categorized Akpafu iron working processes into three phases: mining, smelting and tool manufacturing. In ancient times, indigenes dug complex tunnels within the ironstone mountains. The tunnels were of various orientations, including vertical shafts with lateral galleries as well as sloping and horizontal passages. The iron ores were mined with iron-shod wood sticks (spear shafts). Two classes of workers were engaged in the mine; one dug and struck the rock with their picks and the other collected the usable ore into baskets and took them to the entrance of the mine. In its raw state, it was conveyed to the smelting area.[54]

Rattray, however, provided a succinct account of the ore mining. The writer was informed that a large number of the shafts were sunk vertically, with side galleries emerging from the vertical shaft. In these situations, workers standing in shaft notches handed the ore up in baskets from hand to hand.[55] The argument that "the miners worked without lamps, their eyes being accustomed to

[54] Pole, "The Hammers of Mawu." 48.
[55] R.S. Rattray, "The Iron Workers of Akpafu. "*The Journal of the Royal Anthropological Institute of Great Britain and Ireland* 46 (1916): 432.

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the darkness"[56] is unpersuasive because the depth of those shafts automatically rendered them too black to see through during the day, let alone at night. Rattray's story is not all that different from Pole's.

It's interesting to note that when I asked my responses about this, several of them agreed that it might have been the case in the past when portable lights were not available and underground fires might have gone out due to a lack of oxygen to keep them burning and provide miners with good vision. However, it would be simple to employ light underground when mining the ore until the colonial masters arrived with portable lights like hunter's light and torch light.[57]

Talking about the blacksmith's work in detail, Efo Tailor recounted the narrative from his forebears. He said anyone having charcoal and iron bloom pieces could get hammers made by the community and kept at the chief's palace from the chief's house and go to his clan's forge to make his tools. At the forge, the iron bloom pieces were well-heated and brought onto the anvil and beaten with large stones at the forge. (hammers locally made of stones were initially used before those made of iron). After the iron had been consolidated, it was divided into pieces suitable size of tools being made and shaped.[58] His account resembled that contained in Pole's work, though Pole asserted that during his interview in the 1970s, most of his respondents had difficulty in recalling production narrative. It is not clear if Efo Tailor relied on Pole's work for his information when he said he had not had any formal education. Interestingly, the educated respondents seemed to have little or no knowledge of this piece of work, therefore kept referring me to Efo Tailor for more details on the production activities. They were more informed about their place of origin, their immediate neighbours and economic activities. Perhaps Efo Tailor became the expert in the

[56] R.S. Rattray, "The Iron Workers of Akpafu." 433.
[57] Interview with Mr. Gibert Owusu at Mempeasem, 39/09/2024.
[58] Interview with Efo Tailor at Todzi, 10/10/2024.

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community's history as far as their iron production history is concerned though he was not an eyewitness either.

When Rattray visited the smelting sites at Akpafu, he noted that the majority of the furnaces were on the brink of collapsing, most likely due to prolonged inactivity.[59] This supports Pole's claim that smelting at Akpafu stopped sooner. His story was quite similar to Pole's detailed description of the Akpafu blacksmiths 'furnace.

At the base of Akpafu, Rattray provided an accurate depiction of the smelting process and the furnaces located at the base of the conical mountain. Rattray stated that the furnace had a bottle-shaped neck and measured around 4 feet in height and 3 feet in diameter at its widest point. A 12-foot-diameter chimney goes down the middle (dotted lines).

At the very base of the furnace is an entrance or doorway, marked as B. Around this lower section, at ground level, there are several additional openings, indicated as C. These small holes allow workers to poke and adjust the charcoal within the funnel during operation. They may also play a role in ventilating the furnace, since the fact that there are as many as six openings suggests they serve more than one purpose. The main doorway, B, is primarily used to rake out the burnt charcoal and the treated ore once the process is complete. When the fire is first lit, this doorway is sealed with mud, leaving only a narrow channel through which the molten waste or dross can flow away. Encircling the base of the furnace is a walkway, also lettered C, along with a protective mud wall, D. This wall likely serves as a barrier against rainwater, which would otherwise flow into the furnace since it is constructed on the slope of a hill. Above the furnace, a flat roof, E, has been built, and this is surrounded by a shallow clay parapet, F. The roof is supported by upright wooden poles and horizontal beams, one of which is identified by the letter G. Rising above the roof is the top of the chimney, H. The chimney has been extended upward in order to prevent water from

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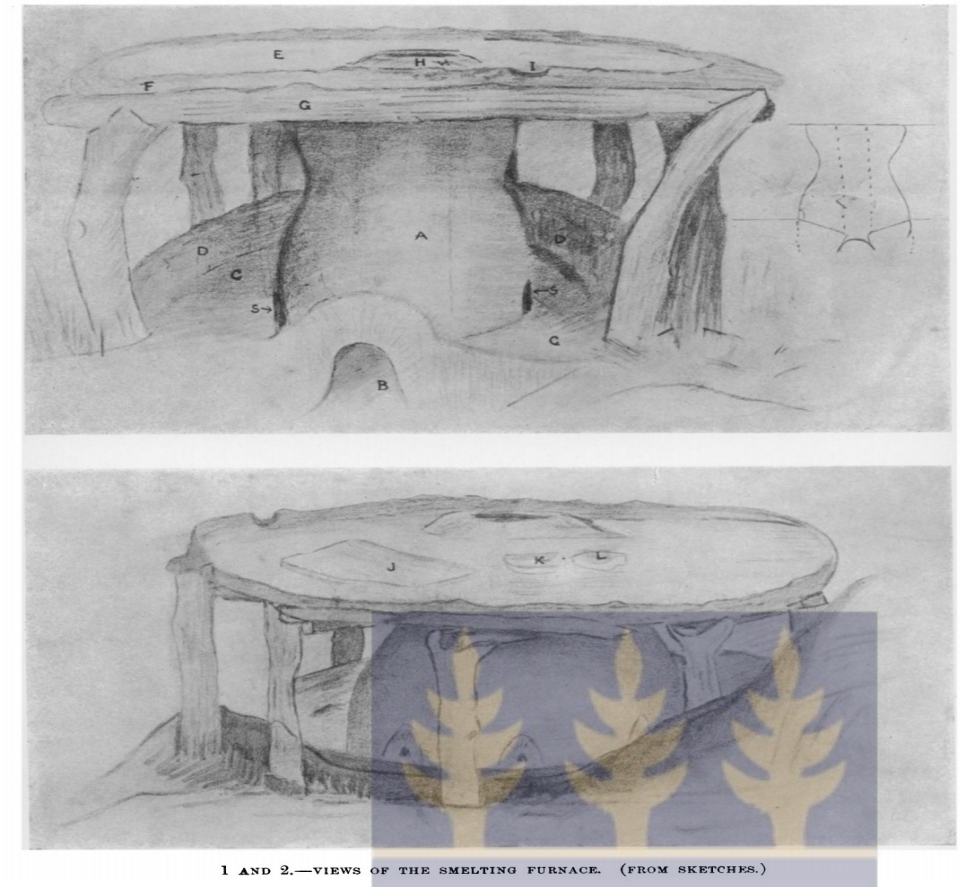
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entering, and an additional outlet, I, is left in the side so that rainwater can be drained away from the roof during heavy storms. This flat roof has a double function: it shields the furnace from rainfall while also serving as a working platform for the smelters who stand upon it. Unfortunately, the wooden supports have begun to rot badly, and before long the entire superstructure may collapse. On the roof rests a wooden slab, labeled J. It is noteworthy that this slab has not been cut with a saw but rather carved directly out of a solid tree trunk. Alongside this, two heavy stones, K and L, are kept ready to be placed on top of the slab when it is positioned over the chimney's opening to stop rain from entering.

The smelting process itself was described as follows: charcoal is first prepared by burning wood cut into bundles or faggots. At a certain stage of the burning, the fire is quenched with water to produce the charcoal. Once ready, the funnel-shaped chimney is filled completely, and the fire is kindled at the lower opening near D. Afterward, this exit is sealed with clay, leaving only a narrow duct so that the dross can escape. The ironstone, already broken into smaller fragments, is then poured from baskets into the chimney from the top opening at H. A fresh layer of charcoal is added above the ore. The loaded furnace is then left to burn steadily for about twelve hours. During this time, the fire is regularly stirred and managed through the small poking holes around the base. The liquid dross trickles out through the duct at B. When the workers judge that the ironstone has been sufficiently smelted, the mud plaster sealing the doorway at B is broken away. From here, the mixture of charcoal and ore is removed, with the ore now transformed into lumpy masses of iron. These solid lumps are further broken down with hammers before being taken to the forge, where they are shaped and worked into usable iron.[60]

[60] Rattray, "The Iron workers of Akpafu," 433.

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1 AND 2.—VIEWS OF THE SMELTING FURNACE. (FROM SKETCHES.)

Front and Back Views of Akpafu Furnace From Rattray's Work.

It is worth noting that the transformation began at the smelting area where the furnace is situated. This furnace was like an oven that transformed raw dough into bread hence greater attention was given to the activities that occurred here until the finished product, iron ore is obtained. Owing to its significance, much thought was given to the construction of this furnace in the Akpafu community. [61]

[61] Interview with Efo Tailor at Todzi, 10/10/2024.

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Akpafu Furnace About 1890-1900 From Pole's "The Hammers of Mawu"

Since the furnace was considered a mother who produces children, like the Mother Earth from whom all living things come, the Akpafu local iron producers therefore built furnaces delicately in order to realize a good outcome of their metallurgy. An accurate description of the construction process in the past was a bit challenging for my informants because they said they hardly witnessed the furnace construction.

Leaving out the 'mother' of my research would amount to building without a solid foundation. Therefore, I attempt to describe based on the fragments of information l gathered in Pole's work and critical observation of some old pictures of the furnace I chanced upon during my research. They were cylindrically shaped, having a base, shaft, platform and conical roof covered with thatch.

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Rituals of pouring of libation with palm wine, to invoke the assistance of their forefathers in the furnace construction, preceded ground breaking for the work to commence. A length of twisted vine was put in the hole dug before a white palm nut was added. The twisted vine is said to give strength to the furnace. It is an undisputable fact that the Akpafu furnaces were made of unique clay to endure the intensity of the heat to produce iron blooms. Efo Tailor said anthill clay was used because it's stickier, adhesive to hold the structure together.[62] This clay is then mixed with retted rice stalks.[63] The mixture is then heaped on four large stones placed in the hole dug to begin the furnace construction. This served as the foundation of the furnace. Once the foundation is laid, the base is raised by continuous addition of the soft clay till a tall cylindrically shaped structure is obtained. The shaft had a shelter and a platform. Four stout poles were set in the earth, one at each corner; each had a forked upper terminal cut from a tree. According to Pole, horizontal beams were laid across the front pair and the back pair. More slender poles were laid from the back to between these beams to provide support for the layer of wood shingles, which were covered with clay to a depth of about 10 cm, with a parapet all round.[64] This was skilfully done in a manner that space was created for rain water to run off. The top shaft came through the roof to about 15cm depth. The roof was to protect the walls of the shaft from the forest rains and the platform.

One could see the furnace having a base, shaft, platform and conical roof covered with thatch with an opening at the bottom of it while the shaft had two inlets for the ventilation and slag run off.

After smelting of the iron bloom comes smithing. Smithing is done by blacksmiths at the forge. In Akpafu, there was no distinction between smelting and smithing because most smelters were smiths at the same time so smithing continued uninterrupted except in a few circumstances where smelters sold the bloom to others when necessary. The Akpafu forge was a rectangular building

[62] Interview with Efo Tailor at Todzi, 10/10/2024.
[63] Pole, "The Hammers of Mawu," 50-51.
[64] Pole, "The Hammers of Mawu,"51-54.

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with a roof supported on vertical timbers and horizontal beams. The bellows and the bellows operators were protected from the heat of the forge fire by a low wall between the hearth and anvils. There were places for charcoal and old pieces of iron and water.[65] The bellows were made of wood from *kotekpkpa.* [66]Two chambers were hollowed out, and each was capped with a skin diaphragm made from a kind of deer known in Ewe as *kladza* and Siwu as *dui*. These diaphragms are reinforced with rings of vine. The skin is made supple by using palm oil residue. The diaphragms are pulled up and down by an attachment of a plantain stem stick at the top.

The air in the diaphragms is pushed into the hearth through a hole at the bottom of each wooden chamber to which a nozzle is attached. The nozzles are made of different kinds of wood. The nozzles point through a hole in the base of the wall which leads to the hearth.[67]

Rattray provides a vivid yet concise account of the traditional blacksmith's forge and workshop, complementing his written description with a rough sketch that helps us visualize both the structure and its practical use. The forge was housed within a hut whose walls were built of *block swish*—a construction technique involving earth thoroughly mixed with water and shaped into layers. Each layer of swish was carefully laid down, left to harden, and then built upon by the next, gradually raising the height of the wall. Set into the wall itself, close to the ground and aligned with the level of the raised platform or dais, was a small window marked as C. This opening had a dual purpose: it provided ventilation to keep the bellows operator—who worked behind a protective screen, D—cool, and it also enhanced the draught, channeling air towards the fire to intensify the flames. The screen, D, was another wall of mud built parallel to the main hut wall. At its left end, the wall curved downward and extended backward as section E, thereby creating a kind of trench, trough,

[65] Pole, "The Hammers of Mawu," 64.
[66] A kind of wood known in Ewe as *papawu* and *Afzelia Africana* in English
[67] Pole, "The Hammers of Mawu," 64.

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or box for holding charcoal. Near a point marked F, a hole was made through wall D; through this aperture the nozzles of the bellows were inserted.

The bellows themselves were operated by a worker positioned behind the mud screen. The placement of the screen was deliberate, serving as a barrier to protect the bellows man from the intense heat radiating from the fire. When air was pumped through the bellows, the charcoal within the trench flared into a searing white-hot flame. Into this fire, the smith standing in front of the screen inserted the pieces of iron that required heating before being hammered into shape. To the left of this working space was a small hollow cup or basin, labeled G. The smith used this receptacle to dip his tongs periodically, cooling them when they became too hot to handle. On the dais or raised mud floor, indicated by letter B, there were also mud-formed stands where the bellows, H and I, could be rested when not in use. Slightly lower down on the left side stood a mud-built seat, J, where the blacksmith could sit and wait patiently while the iron heated to the proper temperature. In front of the screen D, and a little to the right, stood yet another mud structure, this one a pedestal shaped of swish with a cup-like hollow at the top. This feature was known as *eti*, essentially a font or receptacle for offerings. Into it, pieces of ore or other symbolic tokens were deposited as a form of tribute, often by visiting smiths or outsiders who sought permission to make use of the forge. The presence of the *eti* not only underscores the practical nature of the forge but also highlights its spiritual and communal significance within the wider social fabric.

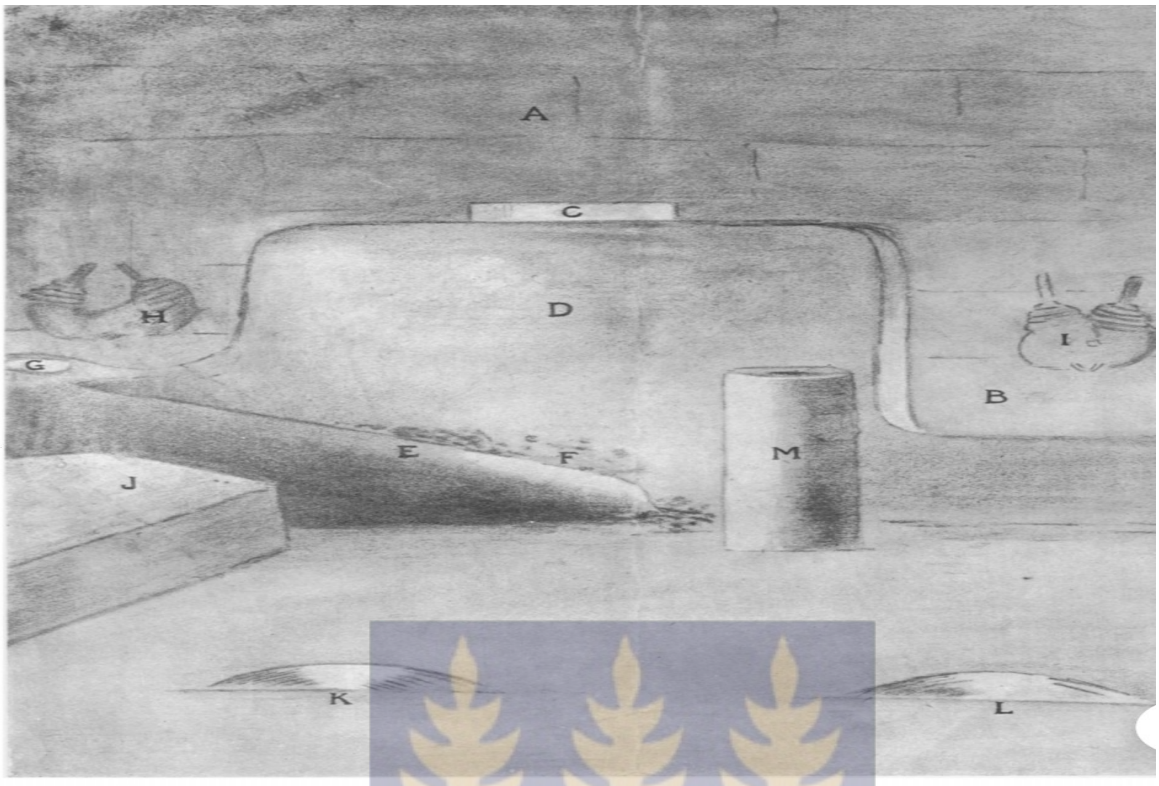
Rattray's account of the traditional blacksmith's forge and workshop, accompanied by a sketch, provides a valuable description of the architectural layout and functional arrangements of the smithing space. The blacksmith's hut was constructed with walls of *block swish*, a building technique involving the layering of earth mixed with water. Each layer was applied sequentially, allowed to harden, and then built upon by the next, resulting in a durable wall structure.

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Within the wall, positioned low to the ground and level with the raised dais, was a window (C). This opening served a dual purpose: it facilitated airflow to keep the bellows operator cool and simultaneously enhanced the draught feeding the fire. Immediately behind this opening stood a parallel mud wall (D), which acted as a protective screen. To the left, this wall curved downward and extended backward as section E, forming a trench or trough that functioned as a storage space for charcoal. At point F, an aperture pierced through the wall (D), permitting the nozzles of the bellows to be inserted directly into the fire chamber. The bellows were operated from behind the mud screen, which shielded the worker from the intense heat of the forge. Through this arrangement, the burning charcoal was fanned into a white-hot flame, providing the necessary conditions for heating the iron. The smith, standing at the front of the screen, introduced the iron into the fire until it reached a workable state. Additional structural features surrounded the working area. To the left of the forge was a small hollow basin (G), which served as a receptacle for cooling tools such as tongs. On the raised dais (B), two mud-built stands (H and I) provided resting places for the bellows when not in active use. Slightly lower and also to the left was a mud seat (J), where the smith could rest while awaiting the heating of the iron.

Another significant feature was located in front of the screen (D) and slightly to the right: a pedestal of swish with a cup-shaped hollow at the top, identified as *eti*. This structure functioned as a ritual font into which offerings—often pieces of ore—were placed. Such offerings were typically made by fellow smiths or outsiders who sought the right to borrow the forge. The presence of the *eti* underscores the symbolic and social dimensions of the forge, reflecting its role not only as a site of technical production but also as a locus of ritual practice and communal exchange.

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THE FORGE AND WORKSHOP. (FROM A SKETCH.)

The Forge and Shop From Rattray's Work.

Closely linked to the furnace and forge is the fuel, charcoal, which is used to charge them and convert matter from one state to another. The extraction of the ore from the rock bearing it and the transformation of the iron into useful tools largely depend on intense heat, which is obtained from thick woods in the form of charcoal. An essential component of the iron production industry is the making of firewood and charcoal. The charcoal-making process commenced with excavation of a pit, typically one meter in depth and three to four meters in diameter. Subsequently, wood logs were arranged in a tower-like structure, leaving a hollow core approximately thirty centimeters in width. The perimeter of the pile was then surrounded with refuse. Once ignited, the pile was covered with a layer of green leaves, grass and finally earth. Notably, the absence of air holes necessitated careful consideration of prevailing wind patterns and seasonal variations, a nuance demanding considerable expertise. Following a period of approximately five days, the charcoal

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was deemed ready for use, at which point the earth was removed and faggots were promptly extinguished.[68]

Unique species of trees were used depending on whether it was for smelting or smithing.[69] The smelters' and smiths' choices of a unique species of trees for their work is based on the fact that the metallurgy required a high amount of intense heat for long hours to enable them to achieve their quality product.[70] This quality could not be found in all the trees around them, but in a few hence their decision to utilize only those few.[71]*Manilkara multinervis* tree, known in the *Siwu* dialect as *kuredziri* wood, *kube* woods, *kuo* and *gale* woods were used in Akpafu.[72] The iron workers chose these species of wood for the smelting activities because they are hard wood, which produced hard charcoals that generated the much needed heat for the smelting process since smelting is a heat intensive activity.

Their forges are unique; their anvil was not made of iron but was a large quartzite stone that was attached to the ground, with a polished upper side.[73] The blacksmiths walked around the anvil (a large hard stone) while forging. Their local tools: hammer, tongs and chisels were different from those of the Europeans. For example, their hammer (stone hammers were initially used) could be big or small with an iron handle like the upper part and short and smooth round about. About three to four men operated the bellows at a time. One must use both hands to grasp and work it like a drum[74].

[68]Pole, "the Hammers of Mawu," 59.
Interview with Efo Tailor at Todzi, 10/10/2024.
[69]Interview with Efo Tailor at Todzi, 10/10/2024.
[70] Interview with Efo Koffi, at Odom, 16/10/2024.
[71] Interview with Efo Koffi at Odome, 16/10/2024.
[72] Interview with Honourable Agbeko at Mempeasem, 20/9/2024.
[73] Interview with Efo Koffi at Odome 16/10/2024.
[74] Interview with Honourable. Agbeko at Mempeasem, 20/9/2024.

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Again, the environment played a pivotal role in preserving Akpafu's iron production, proving to be crucial factor in the community's metallurgical success. The region's mountainous terrain, endowed with abundant iron ore deposits and fertile land fostered ideal conditions for ironworking The lush vegetation, in particular, proved instrumental, providing ample firewood and charcoal that fueled the ore extraction and smelting processes for generations. This harmonious relationship between the environment and the Akpafu people's skills likely contributed significantly to their own industry's resilience and output.

The Ewedome people had a unique experience of being under the rule of two different colonial powers simultaneously: the Germans and the British. Notably, the Germans had established trade relations with the Ewe states as early as the 1870s, and by 1890, they had formally established their rule over the region. The Bremen Mission played a significant role in paving the way for German influence in the area, having begun its missionary activities in 1869, particularly after the Asante invasion of Ewedome forced them to relocate to Keta.[75] It is noteworthy that the Akpafu people were part of the Ewedome people, Northern Ewe.

During the colonial period, the Akpafu iron industry was threatened by the presence of the Europeans in the territory. The Germans observed that much of the ore was being wasted in the local smelting process in the form of excessive slag. According to Pole, the Germans promised to teach the local smelters how to smelt efficiently by reducing the slag.[76] Though the local smelting process was beset with the challenge of producing excess slag as compared to the iron proper, the Akpafu local smelters diligently followed the production processes in order to get the same iron in the end. This implies the use of more resources in the form of firewood and charcoal, ore bearing rocks and workers to achieve the same results, which could be more substantial if the slag was removed. This narrative is corroborated with Efo Koffi, who stated that such was the case in the

[75] Yayoh, "German Rule in Colonial Ewedome," 136.
[76] Pole, "The Hammers of Mawu," 70.

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past but his forebears had no option but to keep doing what they could in order to satisfy the iron needs of the people from whatever they got from the smelting.[77]

The hope of the Akpafu local smelters' receiving new skills from the Germans to improve upon their smelting process was dashed when the Germans imported foreign iron bars and wares into the territory instead. The change of things rather affected the Akpafu local iron industry negatively. The local iron bars and iron wares were competing with the foreign ones on the market in the nineteenth century, ultimately changing the taste of some local consumers.

Closely related to this is the harsh taxation regime of the Germans. The Germans were noted for their harsh colonial policies. They heavily tasked their colonies to support their selfish agenda. Yayoh attested that in Kpando, where the German established their rule, the local people were displeased with the harsh German taxation policy and they wished the British would take over.[78]Trading in the local metal and metal wares with neighbours encountered this harsh taxation regime to the extent that Efo Tailor recounted that their ancestors would like to deal with businessmen at Kpando market to escape the direct taxation on their goods.[79]

Another challenge of Akpafu iron workers under the Germans and British colonial masters was the introduction of Western formal education into the territory. [80] It is obvious that the local people began to see the benefits of formal education in the territory and enrolled their children in those schools at Amedzofe, Kpando and Ho. The outcome of this was the continuous absence of the youthful human resources needed at home for the production of iron because some had to commute over long distances to those few available schools, while others were made to stay with relatives closer to those schools for convenience. This phenomenon interfered with the smooth production

[77] Interview with Efo Koffi at Odome, /10/2024.
[78] Yayoh, "German Rule in Colonial Ewedome, (Ghana), 1890-1914"133.
[79] Interview with Efo Tailor at Todzi, 10/10/2024.
[80] Yayoh, German Rule in Colonial Ewedome, (Ghana), 1890-1914," 136.

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of the Akpafu iron industry unlike prior to the advent of the colonial masters when the schools were nonexistent and the youth were always home with their parents. According to Honourable Agbeko, though the schools took part of the local labour force from the industry thereby affecting iron production, they joined the work force during some weekends or holidays to contribute to income in the house. He noted that in the late 1940s and 1950s, when the British colonial masters and the missionaries set up more schools in the country, the labour force drastically reduced, leaving the production on the elderly and few youth who were not in school.[81] It can be said from the above that those youth enrolled in the schools upon graduation got white collar jobs like teachers, messengers, catechists, store keepers, among others so they could not return to contribute to the local iron production economy in their community.

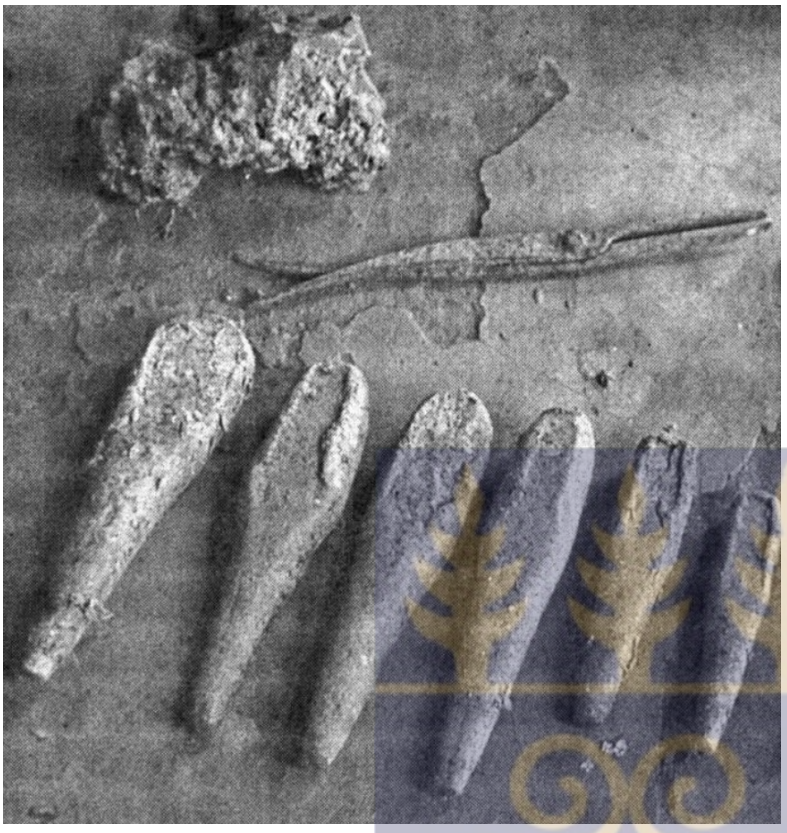
The local iron industry's ability to withstand challenges in the past can be attributed to technological advancements and innovative practices. According to Afeadie, technological change occurs when new production methods are introduced, broadening the existing scope of techniques in a specific field. This transformation involves two crucial stages: invention, which involves creating a new method to accomplish a particular goal, and innovation, which represents the first practical implementation of that new method in a production process.[82] The integration of innovative iron production methods in Akpafu played an essential role in sustaining the iron industry's vitality in the past. By embracing the new techniques, the industry was able to navigate shifting circumstances, enhanced productivity, and remained competitive. As a result, the industry would prolong its lifespan and maintained its viability.

When the Akpafu folks encountered the colonial masters, the Germans in the late nineteenth century, they borrowed some new technologies from them which improved Akpafu iron production: the adoption of European-style blast furnaces which some local smelters used local

[81] Interview with Honourable Agbeko at Mempeasem, 20/09/2024.
[82] Afeadie, Technological Change and Continuity in West African Handloom Weaving, 64.

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materials such as clay and wood to construct. The use of mechanized tools such as trip hammers and bellows were also adopted.



A Set of Mawu Hammers and a Tong in the Past From Pole's "Hammers of Mawu"

Additionally, the presence of the Europeans on the Gold Coast brought new iron ores from Europe. The local iron producers purchased these iron ores based on the recommendation of the colonial masters and experimented with them successfully using the new technologies they acquired. [83] According to Efo Tailor, mining the local iron ore was labour intensive but less rewarding. With the Europeans' presence among them, it was prudent business-wise for the blacksmiths to rely on the European imported iron bars to keep themselves in business.[84] The blacksmiths bought this foreign iron bars from the market at Kpalime and came to forge them at home into desired tools

[83] Interview with Mr. Gilbert Owusu at Mempeasem,30/9/2024
More details on this European irons bars will be provided in chapter 4
[84] Interview with Efo Tailor at Todzi, 10/10/2024

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such as round shaped hoes; hoes with flat two corners and round edge cutlass, a long-curved piece of iron for use. Sometimes, the blacksmiths themselves or retailers sent those products back to sell at Kpalime market. The results were improved efficiency and high productivity and enhancement of iron quality due to better smelting and forging techniques that ultimately expanded market opportunities and increased economic activity.

It is recounted that the Akpafu local iron producers' friendship with the Asante was intact due to their constant supply of military weapons such as arrow heads, spears and cutting tools to the Asante in their raids for slaves and expansionist wars in the region.[85] The mutual benefits gained by these two groups of people from each other was essentially friendship, friendship based on reciprocity.

As Goucher and Pole advanced, initially, the European irons were not pure nor cheap than West African iron bars and tools that the Africans would prefer them over their local iron bars and tools.[86] Later, the Africans adopted them due to the ecological challenge presented by continuous destruction of the forest in search of firewood to fuel the iron production activities[87]and the cost of European iron bars at the end of nineteenth century.[88] Though my respondents did not allude to this observation of Goucher in West Africa pertaining to the environment, Efo Tailor said that it was prudent for the blacksmiths to rely on European imported iron bars to survive as they became cheaper later due to the actions of the European merchants, not because they were purer than the local ones.[89] Prudent and businesswise, considering the much efforts in the production processes (mining, smelting and smithing) which required extensive labour and fuel in the form of firewood and charcoal, one would prefer the European iron to the local one.

[85] Pole, "The Hammers of Mawu," 72-73.
[86] Goucher, "Iron is Iron Till it is Rust," 189.
[87] Goucher, "Iron is Iron Till it is Rust," 189
[88] Pole, "Decline or Survival?," 510.
[89] Goucher, "Iron is Iron Till it is Rust," 188.

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According to Efo Tailor, the Akpafu iron workers did not abandon their traditional means of iron working in entirety upon the presence of the colonial masters, whose segment came as the Bremen mission in the 1890s. They continued to add their traditional religious beliefs and practices to their iron works.[90] Pole's assertion that the German presence ended iron smelting in Akpafu ought to be well explained here.[91] Pole himself categorized iron works in Akpafu into three phases: mining, smelting and tool manufacturing[92]. So, to say smelting ceased with the advent of the Germans in the 1890s does not imply the total stoppage of iron works (mining, smelting and tools manufacturing) in Akpafu nor absolute stoppage of smelting. A few individuals still engaged in smelting even with the presence of the Germans on their land while iron tool manufacturing by Akpafu blacksmiths continued.

Mr. Gilbert Owusu said the local smelting continued for a while during the presence of the colonial masters up to the late 1950s because the local consumers of the Akpafu iron preferred it to the imported iron products.[93] The hoes and cutting tools made from the local iron did not break easily like the foreign products. Owusu's account agreed with what Pole said about the quality of Akpafu iron, hence neighbouring communities came to purchase iron from them, which they could resell or work into iron implements for domestic use and for the market. Also, the Akpafu blacksmiths did not like the imported iron and products initially because they had some sort of spiritual attachment to their local iron and would not like to break that bond in their community.[94]

Socially, the iron smelters and smiths, like in other West African states, were accorded some respect by virtue of their work. The respect emanated from the aura surrounding metal work as the community associated the iron production with the gods and their powers. Therefore, the iron

[90] Interview with Efo Tailor at Todzi, 10/10/2024.
[91] Pole, "The Hammers of Mawu," 49.
[92] Ibid. 48.
[93] Interview with Mr. Gilbert Owusu at Mempeasem, 30/9/2024.
[94] Interview with Mr. Gilbert Owusu, at Mempeasem, 30/9/2024.

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workers might have possessed special powers to skillfully engage in this activity to bring indispensable implements to them for use[95].

It is noted in some parts of West Africa that the respect for iron workers is restricted to only the smiths, blacksmiths, rather than the smelters, because they possessed the art to convert iron into indispensable tools most especially for agricultural purposes. Without them, there could be no effective farm work, cutting tools in the home nor war implements for defense and attack.[96] This is rightly so, but in the Akpafu community, both the smelters and smiths were accorded special respect by virtue of the fact that both contributed to bringing out essential products for the community's consumption.[97]It is therefore safe to conclude that some Akpafu metal workers strove to continue production in order to enjoy the prestige associated with their occupation, which perhaps they might lose to enjoy if they were no longer at work.

Travieso and Westland have identified the low opportunity cost of dry season labour, the preference of locally woven cloths by the local people among other factors that accounted for the resilience of the local textile industry in Northern Nigeria during the colonial era despite foreign competition from Manchester.[98]The one-time vibrant local textile industry gradually declined in some areas, just as the Akpafu local iron production did when it faced competition from outside.

The availability of cheap labour in the dry season also preserved the Akpafu local iron industry. It is worth noting that during the dry season, when farming activities came to a stop, the availability of labour force for the iron industry improved since many were resting from their farming activities and were readily available for engagement in any productive venture. This labour force was found within the Akpafu community rather than outside.[99] It can be said from above that the large number

[95] Interview with Efo Tailor at Todzi, 10/10/2024.
[96]Zeleza, *A Modern Economic History of Africa*. 180
[97] Interview with Efo Koffi, at Odome, 16/10/2024.
[98]Travieso and Westland, "What Happened to the Workshop of West Africa?" 11-12.
[99]Interview with Efo Tailor 10/10/2024.

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of hands that engaged in this enterprise at that time ultimately made their services cheap, a phenomenon which affected the cost of production positively.

Ideally, working in this industry was clan-based (family-based) so people worked for the collective interest of their clans rather than individuals.[100] Due to this, many workers did not see the need to make heavy demands in terms of reward from their leaders in this field because it was seen as a 'family affair.' Hence, they were only compensated for work done rather than being actually paid for work done. As a family enterprise, more often, the dividend from work was spent on each member of the family. Efo Tailor recounted that all one needed for the iron smelting process was labour and it was readily available and cheap, unlike the rainy season when locals attended to their farms. The employer, the leader, only needed to make food and a little drink available for his workforce (women in the family were tasked to cook for the workforce). With the introduction of currency, workers here were given a few pennies or shillings as a token for their services.[101]

The blacksmiths engaged the services of their immediate relatives who assisted them at the forge. These blacksmiths were mostly assisted by their children, who learnt the art from their fathers. Proceeds from this enterprise were used to cater for their household needs. In fact, some of the respondents who recounted the Akpafu iron works said they witnessed the blacksmithing aspect as children assisting their fathers at the forge but had not engaged in the iron ore smelting before.[102]

Judging from above, the Akpafu iron workers kept production on for long and adapted to the changing needs of their environment, regardless of the challenges they encountered in the production process and the competition from the outside world with the advent of the colonial masters.

[100] Interview with Efo Koffi at Odome, 16/10/2024.
[101] Interview with Efo Tailor, 10/10/2024.
[102] Interview with Efo Koffi at Odome, 10/10/2024 and Efo Tailor at Todzi, 10/10/2024.

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I have realized that there is limited literature on traditional Akpafu iron smelting during the days of independence of the Gold Coast. It could mean much was done in the earlier periods where iron ore smelting at Akpafu had virtually come to an end. Smithing, on the other hand, continued as local blacksmiths depended on the European iron ores for their tool manufacturing. Perhaps, it is this late-stage smithing of smithing of the Akpafu local smiths that dominate the oral accounts of the Akpafu and her neighbours.

In all, it can be said that the technological innovation and adaptation in the Akpafu local iron production were the very things the local iron producers did to solve their society's challenges and in turn kept themselves in business for ages before going into extinction. The art of breaking ore bearing rocks, carefully preparing charcoal to produce intense heat for long hours, the skillful construction of the furnace that converts the rock into iron bloom with the ingenuity of the local smelters and finally smithing the iron bloom into various articles for use to solve man's problem while observing rituals all constitute technological innovations and adaptations regardless. This is because the whole cycle of local iron production in Akpafu, its success or failure, depended on this.

The rituals and superstitions that accompanied the production activity also constituted the technological innovation and adaptation which the presence of the missionaries in the Akpafu in 1897 could not eliminate. Iron workers were prevented from having sexual relationship with their spouses before engaging in the production. The belief is that it would negatively affect the production output. Understandably, if sexual intercourse is an act that utilizes man's energy while he needs the same energy to work at the mines or at the smelt and at the forge, it is logical to abstain (as their taboo had it) in order to conserve that energy for the tedious iron production activities. Hence, abstinence from sex for few days before production began. Similarly, if people quarrel or fight and cease having cordial relationships with one another if they are not reconciled,

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it follows that if these individuals who are at loggerheads with each other engaged in a work like this, there would be no cooperation between them for the intended purpose therefore, fighting or quarrelling before smelting is forbidden. Most importantly, iron is regarded as sacred and pure by the Akpafu people; therefore, it must be handled by 'spiritually clean' men.[103]



[103] Interview with Efo Tailor at Todzi, 10/10/2024.

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CHAPTER THREE

THE IMPACTS OF COLONIALISM ON AKPAFU IRON PRODUCTION (1890 -1914, 1914-1957)

The emergence of metallurgy worldwide is frequently linked to profound societal transformations. By controlling the knowledge, raw materials and trade networks, metals offer a novel means of acquiring power, presenting opportunities to renegotiate social status and embody symbolism and social meaning. The ancient civilizations of Egypt, Axum, Songhai and Mali in the western Sudan region had all worked with metals in the past. This put them ahead of other civilizations in Africa. The existence of this key industry in kingdoms or empires in the past increased the powers of the rulers in those kingdoms or empires because they controlled the iron trade and collected revenue from traders who engaged in commerce on their land. The iron producers, especially the blacksmiths were revered in their communities because they believed the blacksmith possessed some unique supernatural powers to convert rocks into useful metal for humanity**.** The widespread adoption of metal technologies, particularly iron, can be attributed to the material's dual creative and destructive potential. The production of durable agricultural tools facilitated the clearance of dense forests, enabling the expansion of agriculture, increased sedentism and the growth of urban centres**.** Moreover, the manufacture of robust weaponry empowered armies, contributing to the rise of complex political systems. The large-scale industrial adoption of iron technologies is widely regarded as a driving force behind significant political, economic and environmental changes, shaping the social and physical landscape.[104]

[104] Iles, "Iron Production in Uganda," 1-2.

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Iron production was a vital component of Akpafu's economy and culture. The industry provided employment opportunities besides shaping the community's identity and influencing its political, social and economic developments.

Ewedome, the Northern Ewes interestingly lived under two different colonial masters at time; the Germans and the British respectively. The Germans were said to have engaged in trading activities with the Ewedome states as far back as the 1870s before establishing her rule over them in 1890. The Bremen Mission paved the way for them through their missionary activities in 1869 when the Asante invasion of Ewedome drove them to Keta.[105]

The German rule was a short-lived when it ended in 1914 upon losing World War I. Germany surrendered its territory to the British in 1914. This later territory, known as Trans Volta Togoland came under the care of the United Nations until the 1956 plebiscite, when it was united with modern Ghana on attainment of its independence in 1957.

This chapter discusses the impacts of colonialism on Akpafu iron production between 1884 and 1957.

Political Impacts

Iron works of the Akpafu people brought them into contact with many people, far and near. Among these were the Guan, Ewe, Asante and Dagomba. The earliest of these partners were the Akans who had profound impact on the Akpafu people, politically and culturally. [106]The Akpafu unit which once comprised Mawu, Lolobi, Santrokofi, were structured into small polities, each ruled by a chief and a council of ministers. The titular designations and attendant regalia have been partially assimilated from Akan traditions, albeit integrated within an indigenous framework. Consequently, the paramount chief of Mawu is officially designated as the *Omanhene* of Akpafu

[105] Yayoh, German Rule in Colonial Ewedome, 132-134.
[106]Interview with Honourable Agbeko, at Mempeasem, 10/10/2024.

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Todzi, while his deputy bears the title of *Mankrado,* an Akan term for a chief's deputy. Furthermore, certain accoutrements of chiefship, such as linguist staffs, exhibit Akan origins.[107]

Besides, the Akpafu people of the earliest times were not insulated from attacks from enemies in the past. To them, the incursions of others influenced their movements till they arrived at Kube and ultimately their present home, Akpafu on a hilltop.

The iron implements of war and their strategic location on the mountain might have saved the Akpafu community from incessant attacks and its defeat, hence preserving the peace of the community. As recounted by Mr. Gilbert Owusu, the intelligence coupled with strong iron weapons of the Akpafu people throughout their sojourn, made them undefeatable to others they met on their way. Their notable encounter with the Awudome people and subsequently the Akpini attests to the fact that their intelligence and iron weapons gave them the upper hand in those skirmishes and that might have spread to surrounding communities, alerting them of danger.[108] The knives, arrow heads and spears produced by the Akpafu smiths in their present home had saved them from warlike Asantes.

Economic Impact

This encompasses agricultural, employment and trade impacts during 1884-1975. These constitute a significant change since agriculture is the bedrock of every civilization.

Agricultural Impact

The advent of the colonial masters in the territory did not deter the Akpafu blacksmiths from producing agricultural implements such as hoes, cutlasses and axes. The advent of these implements gave impetus to food production between 1884 and 1957. These tools made it possible for trees to be felled and large areas of farmland cleared for sowing. The hoes, the cutlasses and

[107]Pole, 2010. "The Hammers of Mawu," 48.
[108]Interview with Mr. Gilbert Owusu, 30/9/2024.

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the axes were used to prepare the land, plant crops, weed the farm and ultimately harvest crops on the farms. The durability of the metal tools and man's ability to use them to clear a large portion of farmland for cultivation resulted in an abundance of farm produce to feed the community and its neighbours.

It is established in the beginning that the Akpafu people were farmers as well and cultivated maize, rice, a little yam and plantain and cocoa when they encountered the Europeans. According to Efo Tailor, the metal tools were like the modern-day machines because they made work simple and increased productivity in the past.[109] When he showed me a relic of a metal cutlass of his forebears in the custody of Mr. Dadza, I could not disagree with him. It is thick and heavy in the form of an arc with a flat metal handle. How possible and easy it was for their forebears to utilize those tools to clear large acres of land is mind-boggling. Dadza, Efo Tailor's brother, added that the farm activities were not individual affairs; it was a communal activity just like forging metal to make a hammer for the community.[110] Thus, farming was a cooperative venture where their forebears grouped to clear a brother's land and rotate among members of the group until every member's land was cleared. The same was done during the sowing of seeds until every member's farm was attended to. The cycle repeated to weeding the farm when crops began to grow till harvesting. The group members' feeding was taken care of by their host who provided enough food, water and a little drink (alcohol) for the cooperative members. If every member of this group (a group of ten to twenty members) possessed an iron tool for preparing the land and for sowing seeds, it means a vast area of land could be prepared and farmed within a few days.[111] What matters is the durability of those farm implements to keep the work done smoothly. This kind of cooperative farming did not end in the 1950s. In fact, it is said that the British government easily reached out to those groups for assistance or education on best farm practices and disease. Moreover, when tractors

[109] Interview with Efo Tailor at Todzi, 10/10/2024
[110]Interview with Mr. Dadza at Todzi, 10/10/2024.
[111] Interview with Mr. Frank Dadza at Todzi, 10/10/2024.

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arrived in the territory in the late 1950s, not all farmers could afford the service of the tractor so some were still farming the way they used to, using the hoes and cutlasses in groups. In all, the advent of metal tools by the ingenuity of local Akpafu iron smelters and blacksmiths improved crop production and yields for local consumption.

It appeared the local blacksmiths produced hunting tools such as spears, arrow heads and iron traps with their iron blooms for hunters in the late 1900s, having seen traps made of iron from Europe in their communities. These iron traps were smeared with animal poison or poisonous herbs to weaken and accelerate the death of the game. Grass cutter, antelope, squirrel, partridge, and guinea pig are among the animals hunted depending on the season. The introduction of guns into the Gold Coast territory, the Ewedome enclaves, changed the hunting dynamics of the local hunters. Mr. Gilbert Owusu said that with the arrival of the guns, Akpafu hunters did not discard their primary methods of hunting. Instead, they complemented their local hunting tools with those new guns, muskets in the course of their hunting expeditions. Eventually, guns became more effective and efficient tools for hunting expeditions instead of spears, bows and arrows and traps.[112] This entails that the Akpafu hunters did not abandon their 'old companion' (spears, arrow heads and iron traps) when the 'new counterpart' (guns) appeared. To wit, 'old friends are said to be the best.' The tradition of not letting the past disappear is exhibited in this act of the Akpafu hunters.

INTEGRI PROCEDAMUS

[112] Interview with Mr. Gilbert Owusu, at Mempeasem, 30/9/2024.

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A Cutlass Made of Akpafu Iron by Akpafu Blacksmiths in the Earliest Times. Now in Mr. Dadza's House.

INTEGRI PROCEDAMUS

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An Axe and Hoe in the late 1950s

Employment

The iron production activity in Akpafu in the past offered employment opportunities to the young and old. Just as iron smelting was a seasonal occupation to people elsewhere in Africa, among the Fipa of Tanzania[113] such was also the case of the Akpafu people of Ghana. This industry's season was in the dry season in order to avoid the distraction of the rain in the rainy season. Moreover, the majority of the smelters and smiths practised other trades such as farming and hunting that are

[113] Paul Tiyambe, Zeleza: *A Modern Economic History of Africa,*179.

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mostly done in the wet season in addition to their iron production industry. In effect, the two major seasons in Ghana, dry and wet seasons determined their production period.

Much about smelting and smithing in the Akpafu iron industry did not change when the colonial masters arrived in the late 1800s. According to Pole, smelting was clan-based because the major clans in the community owned furnaces for smelting the ore, but rented them to some individuals in the family who wished to smelt the ore.[114]

The digging for the ore was done by able-bodied men, where children and women were engaged in some cases to carry the dug out to the furnace for smelting.

According to Efo Tailor, even in the late 1940s, some women were still contracted to cook for the workforce since it was more of a family enterprise. The procurement of the iron ore process was a laborious process and therefore needed strong men in their numbers with their assistants being children of age and women in some situations. The ores gotten were exchanged or sold by their leaders and the money used to buy other consumables like salt, fish, clothes, sandals, sugar, soap, foreign alcoholic beverages, European-made guns among others.[115]

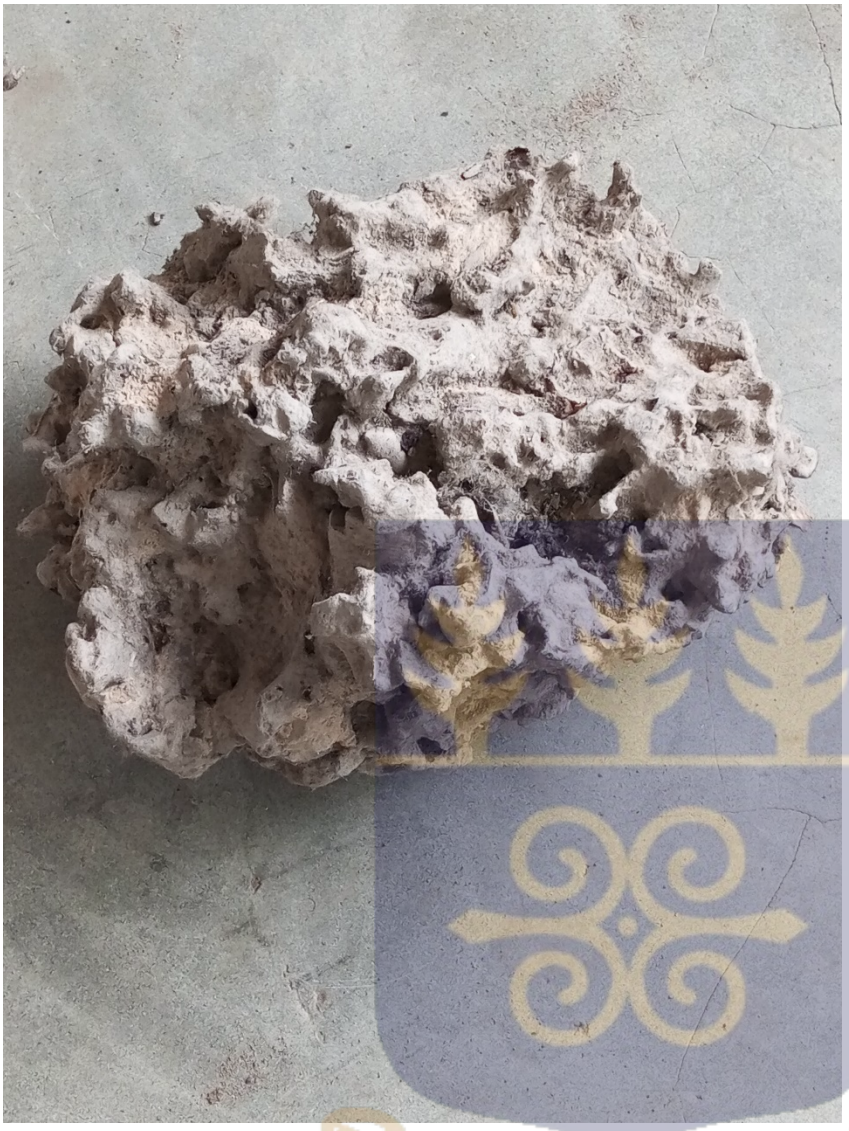
Also, the blacksmiths who bought the ores from the smelters used them to manufacture essential tools and equipment with the help of their children who helped during holidays from school in the 1930s and in some instances, assistants. They also sold for their survival.

In effect, the mining, smelting and smithing of iron ore have become means of employment to the people in the Akpafu community.

[114] Pole, "The Hammers of Mawu," 27.

[115]Interview with Efo Tailor at Todzi, 10/10/2024.

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A Spoilt Iron ore in the Past Kept in Mr. Dadza's House at Akpafu Todzi. This Picture was Taken on 10/10/2024

Closely related to this is the latter-day gun business at Nkonya, a Guan sect of people who lived not far from the Akpafu people. Just as the Akpafu are renowned metallurgists in history, the people of Nkonya are also renowned local gun (*kpakpatu*)[116] manufacturers from antiquity.[117] With the presence of European guns in the territory through trade, they replicated these guns locally for offensive and defensive purposes in the past. This local gun manufacturer requires ingenuity,

[116] *Kpakpatu* is a single barrel gun mostly used by the locals for hunting game and currently at festivals and funerals
[117] Interview with Efor Tailor at Todzi, 10/10/2024.

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creativity and expertise of their blacksmiths over the ages. There is evidence of European guns arriving in the country for sale in found in the 1950s[118].

The main component of this creative and powerful weapon is metal, iron. But it is not clear where the people of Nkonya got their metal supply for the manufacture of this weapon in the earliest times. An interviewee of Akpafu is of the view that since they are neighbours, it is probable that the Nkonya got some of her iron slabs from the Akpafu to augment their other sources to produce their powerful guns.[119] According to the interviewee, he is unaware of his forebears manufacturing guns but believes that through trade and geographical proximity of the Nkonya to them, the people of Nkonya got some iron slabs from them to produce their guns. As to why his forebears with their quality iron ores and interactions with the Nkonya people did not take advantage to learn the craft of gun production from them, the interviewee had no clue.

As iron production became a means of livelihood to the people of Akpafu, the local gun production in Nkonya, which partly fed on the Akpafu iron slabs, constituted employment to the Nkonya blacksmiths as well.

Trade

According to Perbi, the German colonial administration facilitated the passage of slave traders through Northern Togoland to Kete Krachi. Specifically, they permitted Mossi and Hausa traders, including notable figures such as Samory and Babatu, to operate slave caravans in the region, allowing them to engage in the buying and selling of slaves at Kete Krachi. This practice was explicitly prohibited in territories under British control.[120]

This was going on because when the slave trade was abolished in 1807, it continued for some time before it actually ended, because of the challenge of implementing of the abolition law. The

[118] PRAAD VRG/1/415, Amendment of Arms and Ammunitions Regulations of 1954 and 1952.
[119] Iinterview with Efo Tailor at Todzi, 10/10/2024.
[120] Perbi, *A History of Indigenous Slavery in Ghana from the 15th to the 19th Century*. (Legon-Accra: Sub-Saharan Publishers, 2007), 48.

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town Kete Krachi lies in the same region as the Akpafu iron workers. It is said that traders including slave traders met at the Kete Krachi market.[121] Hence, the strategic location of Kete Krachi market facilitated the exchange of Akpafu iron products for other valuable goods, currency, thereby amplifying the economic significance of the Akpafu metal industry. The high-quality iron work produced by the Akpafu people, renowned for their skilled craftsmanship, not only fulfilled local needs but also catered for regional demand, positioning Kete Krachi as a pivotal hub for trade. This exchange bolstered the Akpafu community's economic prosperity and underscored the societal value placed on their metallurgical expertise, ultimately contributing to the prestige and influence of the Akpafu people within the broader regional trade network.[122] Slaves brought to kete Krachi market and bought served as porters for carrying heavy metal wares bought by their owners in transit. According to Efo Dadza also, slaves were brought from far for sale at the Kete Krachi market. They in turn carried their masters' good on head over long distances returning to their masters' homes. The availability of this kind of cheap transport motivated slave masters who were retail businessmen in other goods to procure large amount of good including Akpafu iron wares at Kete Krachi market.[123] Again, slave trade in a way boosted Akpafu iron works. The Asante were procuring their metal for war implements to raid smaller states, shackles were made from this iron to chain the captured slaves.

Efo Tailor repeated in my interview with him that the people of Akpafu traded in iron and its products with far and near people and said something unique. According to him, the iron products sold outside the community was done by strong men who moved in companies to the external markets due to the prevalence of kidnappers and roaming invaders in the region. Due to these women, being considered as weaker vessels were not allowed to trek to such places to transact this business on behalf of their men. Instead, they sat at home and took care of domestic activities.[124]Gilbert Owusu agreed to this and added that some women were accompanied by strong men in the community to market towns not too distant from the Akpafu community in order to avert the possibility of their abduction by notorious kidnappers on their way to the market.[125] In the late 1940s, locally made hoes, cutlasses, axes, knives and traps for small animals were sold in

[121] Perbi, *A History of Indigenous Slavery in Ghana from the 15th to the 19th Century*. (Legon-Accra: Sub-Saharan Publishers, 2007), 152.
[122] Interview with Efo Koffie at Odome 16/10/2024.
the slave masters sold some slaves at the Kete Krachi market and bought some metal and metal wares back home for retail.
[123] Interview with Efo Dadza at Todzi 12/10/2024.
[124] Interview with Efo Tailor at Todzi, 10/10/2024.
[125] Interview with Mr. Gilbert Owusu at Mempeasem, 30/9/2024.

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the markets of Hohoe, Ho, Kpando and Jasikan. The trade relations bonded the Akpafu people to the Ewedome the more.[126]

Trading activities between the Akpafu people and their neighbours provided revenue to their leaders in the community for development purposes. The Akpafu leadership taxed those who were engaged in trading activities in the community and even taxed their immediate relations like the Lolobi and Santrokofi, for passing through their community to trade or engage in any private business.[127] There is proof of case of Lolobi, a component of Akpafu petitioning the Jasikan-Buem State Council for autonomy because of alleged unfair treatment of collecting a sort of road toll from them, but failed to use it for the intended purpose while still asking them to pay more and suppression from the Akpafu chief.[128] Also, the centralized traditional authority of the local rulers did not change much with the presence of the Europeans, the British after the Germans around 1920s though there were some level of influence. Thus, though traditional authority underwent some changes, the institution continued into the present day.

The tolls the Akpafu leadership collected from businessmen and women in their community were not only used to provide the community's needs but to fund the activities of the Akpafu chiefs and the council of elders and also pay for the services of those who collected the tolls on their behalf. Efo Tailor recounted the initiatives of the Akpafu leaders in managing their local affairs relying on the locally available resources with the support of their subjects. He recollected that levies of this kind were not discontinued in the 1950s under the British rule. That the chief appointed trusted

[126]Interview with Mr. Frank Dadza at Todzi, 10/10/ 2024.
[127] PRAAD, VRG/1/147: "Akpafu Native Affairs 1951-1955" at Ho Regional Archives.

[128] [128] PRAAD, VRG/1/147: "Akpafu Native Affairs 1951-1955" at Ho Regional Archives.

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and committed men from among them to collect levies for them and their colonial master whenever the need be.[129]

Social Impact

Exchange of culture

In furtherance, due to the Akpafu's skills in metallurgy, they were easily welcomed by other tribes knowing that they could benefit from their skills. This promoted cultural exchange and development of social relationships among the people of Akpafu. For instance, the Akpafu came into contact with the Asantes who are twi speakers with centralized system of government. Long relationships between the two even during the colonial era offered the Akpafu the opportunity to learn the twi in addition to the Siwu language. Hence, it is not surprising to find some Twi words like *Nana*, *Omanhene*, *Mankrado*[130] in their guan. The names of the Akpafu towns, Odome, Mempeasem, and surnames such as Owusu are testament to this relationship between both ethnic groups through the pre-colonial, colonial and post-colonial era. They copied the unique chieftaincy institution of the Asantes which had chiefs with a council of elders and linguists, becoming a centralized state unlike their previous non centralized entity. Related to this is the cordial relationship between the Akpafu and the Ewedome that they learnt Ewe in addition to their mother tongue. The use of the Ewe among the Akpafu is so common that one can hardly tell the difference between the Akpafu and the Ewe. In fact, my interviews with all of my respondents were mainly in Ewe. This is possible due to the impact of the Ewedome on the Akpafu. This is to say that the bond between the Ewe and the Akpafu grew stronger as they interacted and the Akpafu assimilated the culture of the Ewe. Yayoh has it that when the Germans began their schools in the Ewedome, considering the linguistically diverse nature of the territory, where the Ewe spoken is not the same

[129] Interview with Efo Tailor at Todzi, 10/10/2024.
[130]Nana /Omanhene is a title of a chief in Akan which is suspected to be borrowed from them when the Akpafu people encountered in the Gold Coast.
Mankrado is an Akan term for chief's deputy.

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and the minor ethnic groups like the Guans also having different forms of Guan spoken, they decided to adopt the Ewe as the main local language for the people in the Ewedome area and taught it in their schools. It is in this regard that Ewe literature, such as the Ewe Bible was written.[131] Closely related to this is the acquisition of the English language. Yayoh said that even though the relationship between the Germans and the British in those days was not good, the Germans taught English and some Latin in their schools before leaving them to the British around 1914. The Amedzofe School which has now become a College of Education in the Volta Region, is one of such schools. In effect, all those who left Akpafu to enroll in these schools acquired these languages.

Marriage

The indigenous Akpafu community strictly kept to marriage within their community rather than external ones from the early days for the fear of bringing in traitors which might lead to the enslavement of their people through war.[132] As time went on and with the presence of the colonial masters in the region, they became flexible and allowed their men to contract few marriages beyond their community.[133] Offspring from these relationships augmented the Akpafu population while they also acquired the smelting and smithing skills from their fathers, preserving the local iron industry. Significantly, only men were privileged to contract such distant marriages while their women were forbidden from this for the peace of the Akpafu community and family continuity.

However, some prospective suitors and husbands worked on the mines and smelted iron for their fathers-in-law for their wives to be and wives. Those men were only served food and drink at the workplace. Their satisfactory output influenced their fathers-in-law to bless their marriages or

[131] Yayoh, "German Rule in Colonial Ewedome (Ghana), 1890-1914." 132.
[132] Interview with Frank Dadza at Todzi, 25/10/2024
[133]Interview with Mr. Frank Dadza, 10/10/2024.

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guaranteed the marriages' continuity. A hard-working man who readily assisted his father-in-law was the delight of his father-in-law and his wife's family.

Also, men of age worked hard in the iron industry and used their incomes to pay hefty bride prices for their prospective wives.[134] The assistants at the smelt and forge were paid for their services either in kind or cash. They were either given the ore or iron products which they went to sell or they were given money by their employers. They could save their income from this enterprise to pay the bride price in marriage when they were of age to marry. This suggests that the prospective husband must work extra hard and for quite some time if he intends to marry.

But the situation was different in some far-off land such as Uganda during the 1950s, where hoes were used to pay the bride price to marry women.[135] Among the Akpafu people, it was the proceeds from any aspect of the iron work including the income from the sale of the iron products that enabled some young men to contract marriage.

It is worthy of note the arrival of first Basal Missionary in Akpafu in 1897 and their establishment of station there did not alter the traditional marriage pattern of the local people of Akpafu. The men could marry as much as they could fend for and reproduce in numbers since numbers was key in terms of warfare and economic ventures such as agriculture and the iron production activity.

Moreover, in the later days of British rule, marriages were allowed to be contracted outside the Akpafu community since the threat to distant marriage died with the presence of the British government with the security and enlightenment, they provided through their security agency and schools.[136]

[134] Interview with Honourable Agbeko at Mempeasem, 20/9/2024.
[135] Iles, "Iron Production in Uganda," 7.
[136] Interview with Honourable Agbeko at Mempeasem, 20/9/2024.

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On the other hand, the presence of the colonial masters in the Akpafu community did not alter their traditional means of entertainment. Besides storytelling, singing and dancing were part of their recreational activities. Traditional music was accompanied by musical instruments such as rattle, *gong-gong*, castanet and drums of various sizes. Among these, the *gong-gong* and the castanets were designed by the local blacksmiths using iron. The melodious sound produced by these metal musical instruments added to the quality of traditional music produced by the Akpafu in the past. The narratives of Honourable Agbeko validate this aspect of the Akpafu culture where the young and old spent their leisure time performing traditional songs and dance. This also found its way into storytelling during moonlight nights in the 1940s to 1950s. Their musical instruments, castanet and *gong-gong* were used in a popular *borborbor*[137] dance of the Kpando people during Ghana's independence.



Present Day gong- gong Which Does Dot Differ Much from that of the Akpafu in the Past.

[137] Borborbor is a traditional recreational dance popularized by Ewedome in the mid-1950s. Women and men dance in a ring to drum rhythm, bending down while shaking their waists.

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Architecture

Rattray described the Akpafu habitat as, "Their huts are flat-roofed (with mud) instead of the conical grass-roofed houses of the Ewe race." [138] It is not surprising that my respondents described their old habitats differently. Efo tailor said their ancestors' homes were like sphere-like structures of huts, roofed with grasses, wattle and daub structures. The difference in the description might result from the fact that they did not witness that era to give an accurate description of their ancestors' homes. Having seen or inherited the building style of their Ewe neighbours, they turned to describe their homes in the past differently from what Rattray captured in his study in the early 1900.

With the presence of the Europeans on the Gold Coast and Trans Volta Togoland, the style of building of the local people changed. From the sphere-like structures of huts roofed with grasses, wattle and daub structures to Western-style structures that is rectangular in shape with windows and doors and roofed with corrugated iron sheets. Doors and windows of these structures were made of wood held in place by hinges and locks made of metal. The windows also had iron bars fixed in them vertically to prevent unlawful entry into the property by an intruder. Nails were used to hold the corrugated iron sheets on the wooden planks of boards placed on top of the building. While in some instances, nails were used to hold the wooden boards together in making the doors to those structures.[139]

Interestingly, the Akpafu local blacksmiths began to imitate some of those European items made of metal; door hinges, door locks with a key for local consumption. [140] Akpafu local blacksmiths skillfully reproduced some of those essential building accessories for local consumption after they

[138] Rattray, "The Iron Workers of Akpafu," 431.
[139]Interview with Efo Tailor at Todzi, 10/10/2024.
[140]Interview with Efo Koffie at Odome, 16/10/2024.

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had carefully observed the European-made made just as their Nkonya neighbours who imitated the European guns when they were in circulation for a while.

Western Education

The people of Akpafu benefited from the colonial regime's formal education. The Bremen Mission visited Akpafu and erected a church and mission house on Todzi in 1897.[141]I found out in my Bremen Mission School established at Amedzofe. Some youth were said to have abandoned iron smelting and gone to school as far as Amedzofe. Perhaps out of curiosity or for a better life after school. The British after the Germans also facilitated in setting up of schools in the area. Job prospects after school were catechists, interpreters, messengers, teaching and post boys, among others.[142] The Bremen Mission used catechists for evangelization mission. Through their efforts, the Europeans (Bremen Mission), established the Church in the Ewedome area. Others, interpreters assisted the Europeans in mission, business and political spheres of the local area. The locally trained teachers also worked to educate their fellows in the Western style to become like them, reading and writing the white man's language (initially German) and the predominant local language in the area, Ewe during that period. The people earned their living through all

these means of engagements by the Europeans in the German Togoland and the Gold Coast.

The momentum of building schools in the colony changed after the World War II. More schools were set up in Africa to give the ruled education. This led to the establishment of the University College of Gold Coast at Legon in Ghana in 1948. The dawn of urbanization in the colony at that time created unemployment opportunities for school leavers after the Second World War. School leavers from Akpafu were said to have also migrated to Ho, Kpando, Hohoe among others for white collar jobs.

[141] Pole, "The Hammers of Mawu," 57.
[142] Interview with Honourable Agbeko at Mempeasem, 20/9/2024.

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In the General History of Africa, volume VIII, Ali A. Mazrui argued that communication skills rather than production skills and development, was the best dividend of Western Education under 1935 and beyond.[143] Regardless, the literally and verbal skills that the local people received in Ewedome which is linked to the Akpafu, better placed them rub shoulders with other ethnic groups in the territory in areas of trade, laws and local governance.

CHAPTER FOUR

THE DECLINE OF THE AKPAFU LOCAL IRON PRODUCTION

In the previous chapter, I discussed the impacts of colonialism on the Akpafu iron industry under political, economic and social phases. Firstly, that politically iron production in Akpafu during the colonial era generated internal revenue to the traditional rulers which they spent on the administration of the community to the benefit of its members. Secondly, that economically, the Akpafu people's way of farming and hunting improved with the advent of cutlasses and hoes, axes, bows and arrows, and animal traps made of iron. Food production increased and boosted their local economy while bush meat augmented their source of protein in the kitchen. They did not abandon

[143] Ali A. Mazrui. "Towards the Year 2000." General History of Africa, VIII. Africa Since 1935. (1993): 934.

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the use of these local tools and implements during 1884-1957. Also, iron smelters and smiths, traders all gained extensively from the sale of iron bars and iron tools internally and externally. Finally, there were social impacts on the Akpafu people during the colonial period. Culture was exchanged between the Akpafu people and the Ashanti and Ewe where Akan and Ewe names were borrowed and the chieftaincy institution. Marriages were contracted from far and near with the proceeds from the Akpafu iron business while local housing was improved to the European style for proper ventilation and beauty.

This chapter discusses the decline of Akpafu iron production.

The Harsh Taxation Regime of the Germans.

The Germans having established contact with the Akpafu community in the nineteenth century because of their influence in the Trans Volta Togoland and traded with the Akpafu people at the Kpando market. It is noteworthy that German officials were residing in Kpando about 1890 and established their rule there. [144] Kpando market was among the markets where the Akpafu people sold their metal wares and bought their personal needs like foodstuffs and cloth back home. This market was a big market in Ewedome because the Salaga trade route and many small trade routes converged there.[145] Akpafu Todzi interviewee, Gilbert, said he learnt from his forebears that trade items like European clothes, alcoholic drinks, local tilapia and salt were purchased at Kpando market. He said when their forebears reached Kpando, they would usually sell their wares to retail agents because selling their metal wares themselves was not prudent businesswise taking into account the cost and time spent selling. The Germans, who are noted for harsh taxation were seen to have heavily taxed their Ewedome territory excluding Tsito and Peki.[146] Their heavy taxes coupled with the harsh treatment of their subjects triggered a kind of dislike for them in this area.

[144]See Apoh, *Revelations of Dominion and Resilience.*
[145] Yayoh, "German Rule in Colonial Ewedome," 131.
[146] Ibid., 136.

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Apart from the six marks payable annually by all males, or work not more than twelve days in a year or products corresponding in value to that amount, there were all sorts of other taxes imposed by the Germans. This included rubber, animal and emigration taxes. The inhabitants reacted variously to this high-handedness of the Germans.[147]

Besides the Kpando market, the forebears of Akpafu traded at Kpalime, an ancient town under German control in the past. Another Akpafu interviewee recounted how his ancestors travelled to Kpalime with their metal wares for sale. But he could not remember if his ancestors sold their wares to agents there or if they sold it directly to the consumers.

Interestingly, the interviewee said his ancestors bought European iron from Kpalime in the course of time. When I curiously asked him why the smelters would now be buying iron from Europe to use at home, his response was that his ancestors became frustrated with the time and labour spent on mining the ore alone before smelting.[148] By his narrative, it would take a whole day to mine the ore and one would not get his iron bar to use for its purpose. So as early as the 1890s, Pole observed that iron smelting ceased as a regular activity.[149] This means the Akpafu smelters, having found a new source for their iron bars, abandoned a prospect they considered 'much laborious.' But as to how much these iron bars or iron tools cost remains unknown. My respondents, too could not tell. Their answers were that the iron bars were relatively cheap to afford. Efo Tailor said the blacksmiths could produce many items from one iron bar and sell it for profit. He added that though the hoes or knives from some of the Europeans' iron bars broke quickly, it was advantageous to the smiths because the consumer would buy from him another one to replace the broken tool. It is clear from the above discussion that the harsh taxation policy of the German government and the alternative source of iron bars negatively affected Akpafu iron production to some extent. The

[147] Ibid.
[148] Interview with Efo Tailor at Todzi, 10/10/2024.
[149] Pole, "The Hammers of Mawu," 49.

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harsh taxation policy prevented the Akpafu people from doing business directly with neighbours under German jurisdiction, hence the agent which could not offer them the best returns in the iron trade.

Exploration of Pole's Social and Economic factors

Pole identified some causes of the decline of the Akpafu iron industry in his research. A few of such causes include, introduction of Western formal education in the region, lucrative cocoa farming, and the failure of the Germans to assist the indigenes to improve their local technique to reduce wastage during the production of the ore. The Germans drew the attention of the local smelters to the fact that their process of smelting was wasting much iron in the form of slag and promised to assist them improve their techniques in order to curtail such wastage. Interestingly, they failed the local people. Instead, they began to flood the local market with cheaper iron tools of European manufacture. They imported English steel from Keta into the area.[150] The influx of European iron bars and iron products onto the local market contributed to the decline of the Akpafu local iron industry. According to Efo Tailor, he witnessed the end of commercial smithing in Akpafu in the 1950s when smiths began to relocate to neighbouring villages or retired or even died.[151] When I inquired from him why, he responded that the blacksmiths were not getting the iron bars from the smelters to buy at Akpafu since competition from the outside world affected them negatively leading to the folding up. If the smiths could get their main material, iron bars, from elsewhere other than Akpafu, then he would have no compelling reason to remain on the mountain top at Akpafu.

In furtherance, cocoa becoming a cash crop motivated the local people of Akpafu to take to cocoa farming. The lucrative nature of cocoa farming when introduced into the Protectorate attracted

[150] Ibid.,50.
Afeadie, *Foundations of Agbozume.* 18.
[151]Interview with Efo Tailor at Todzi, 10/10/2024.

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some smelters as well. It is worth noting that the geography of the Akpafu, a forested mountainous environment was favorable for this cash crop. Cocoa farming is labour intensive and needs many hands to work on the farm before the farmer could enjoy its fruits. Juggling cocoa farming with iron production could inconvenience the farmer. With higher returns from these farms, some smelters had no option but to abandon their furnace and farm.[152]

This change was widespread around 1945 after World War and its aftermath. Jean Suret-Canale and A. Adu Boahen observed that colonies during this period became suppliers of raw materials. The rural areas were mostly dominated by cocoa farmers, coffee growers and labourers, especially in Ghana, Nigeria and Cote d'Ivoire.[153] This was the situation in Ewedome and some areas within the Akpafu community where some gave priority to cocoa and coffee farms due to their high demand and high financial prospects.

Goucher's Ecological Model

Goucher suggested a related model for the decline of West African iron smelting. He opined that the ecological model is responsible for the decline in the local iron industry in most West African States. It follows that the dependence on charcoal fuels in the West African iron industry led to the destruction of the environment, influencing the climate. This model says that when the forest is depleted by way of lumbering to feed other industries, especially for export and charcoal making for local consumption, the smelters and smiths could not obtain the special species of woods for firewood and charcoal to fuel their industries, hence the fall of those industries.[154] Regarding the Akpafu community, it is plausible that the ecological model was a major factor in the decline of their iron production. Interestingly, my respondents are unaware of this, but in our interactions, I

[152]Interview with Efo Tailor at Todzi, 10/10/2024.
[153] Jean Suret-Canale and A. Adu Boahen, "West Africa 1945-60" General History of Africa VIII. Africa Since 1935 (1993): 163.
[154]Goucher, "Iron is Iron 'Til it is Rust," 180.
Hopkins, *An Economic History of West Africa*. 181.

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picked up a cue that compelled me to search further to establish this practice. Efo Tailor said a lot of firewood was needed for this work because one needs a constant supply of intense heat to change matter from one form to another- iron ore to bloom and bloom to iron products. To him, it is not simple and easy to produce an iron, the fuel came from unique species of trees in the Akpafu environment. [155] By this, one can imagine the quantity of wood needed to convert into charcoal for the production of iron and its products. Moreover, it was not the iron production alone that exerted pressure on the trees in the forest but the European age of furniture making and construction of homes with wood. It is noteworthy that those kinds of trees found in the environment which were used for fuel and furniture took years to grow and once cut for production and other domestic use, are lost for good. As it is expounded in chapter three under social impacts of colonialism on Akpafu iron production, the emergence of Western-style architecture was significant. The construction of houses depended on woods from the forest. Woods for beams, door and window frames and windows and doors as well. In the 1930s, most houses in Akpafu had wood components. Besides, they could cut big logs with their metal tools and turn them into seats in the house and public spaces such as marketplaces, resting places and palm wine drinking spots, among others.

Again, the clearing of the forest for agricultural purposes destroyed valuable trees for the industry. With their iron tools in groups of ten or more, they could clear large acres of land within a few days for cultivation. Burning, which is one of their land preparation activities, also destroyed the forest. In all, the forest is destroyed, should it occur to the workers and the users to replace those trees by planting new ones, it would take years for them to grow for use again. The continuous depletion of the forest to fuel the iron production and for other purposes soon would leave the indigenes with no trees for fuel to continue the production.

[155]Interview with Efo Tailor at Todzi, 10/10/2024.

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If those thick trees took many years to grow before they were felled, it would take a few years for them to disappear. Their disappearance means work must come to a halt. This can be said of the Akpafu people whose iron production declined in the 1950s. Mazrui's aptly captured this pathetic phenomenon in Africa during the colonial era when he noted that Africa's ecology is going to witness much destruction of the ecology in the coming years because the forests were destroyed for firewood most especially and others without a concerted efforts of African governments to replacing those trees that were discriminately fell in our forests for various reasons.[156] The Gold Coast, Akpafu, had her fair share of this destruction because firewood is the most prevalent form of energy in her rural areas like in any other African rural areas as established earlier.

On the other hand, an argument can be advanced that the ecological factor should not be a hindrance to iron production in Akpafu because the advent of the Europeans meant the presence of coal, an alternative fuel for the iron production industry in Africa. But Goucher posited that coal discovery in Africa is new and the coal was of poor caloric value.[157]

Lack of Interest in Akpafu's Local Iron by the British Colonial Government

When the British Government took over the administration of Trans Volta Togoland, their focus on mineral mining was restricted to gold, manganese and bauxite at the expense of iron. Iron ore mining was left in the hands of the local people in remote areas who were still using traditional methods in production. This neglect did not help the Akpafu iron industry to grow just like a few others dotted in the country. The colonial masters preferred to bring their iron products to the local people to consume, hence growing their industry rather than building the local production they found in Ghana like the Akpafu one.

[156] Mazrui, "Towards the 2000," General History of Africa VIII. Africa Since 1935: 925.
[157] Goucher, "Iron is Iron Til it is Rust," 181.

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CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Introduction

Iron production dates to antiquity in Africa. According to Paul Tiyambe Zeleza, iron technology is believed to have diffused into Africa from Western Asia, then spread to North Africa first, next was Egypt and Carthage before reaching the rest the continent.[158]This is said to have reached West

[158] Zeleza, *A Modern Economic History of Africa,* 174-175.

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Africa during the first millennium. However, iron smelted was noted at Nok, Nigeria around 500 BC.[159] It is interesting to learn that the elders of Akpafu also said they brought this ancient metallurgy with them from somewhere as far as Egypt.

Iron and iron wares played significant in the history of mankind. In Ghana, Akpafu in the Volta Region is one of the places renowned for iron production. According to my respondents, Akpafu people's metallurgy predates colonialism.[160] The Akpafu iron production flourished and her indigenes reaped the economic, social and political dividends of their local iron industry before and during the advent of the European colonial masters in the region somewhere in the eighteenth century. This thesis is situated within the pre-colonial and colonial context from 1884 to 1957. The Akpafu people's migration and early settlements were in session within the 1880s while their colonial domination spans from 1890 to 1914 (under the German Rule) and 1914 to 1957 (under the British Rule).

The Akpafu local iron industry produced farm implements to boost agriculture, traps for hunting games, musical instruments, dowry for marriage, implements of war, employment for the iron smelters and smiths among others. These benefits extended beyond the Akpafu community as seen in their trading activities with outsiders like the Ewes, Asantes and other Guan speaking people. However, the once vibrant local iron production of the Akpafu people began to struggle for survival during its encounter with the European iron and iron wares in the nineteenth century. The preference of the European iron and its wares by the locals in the country left no market for the Akpafu irons and its wares. Western Education which was introduced and championed in the region by the Christian Missionaries denied some abled bodied youth from engaging in the local

[159] Hopkins, *Economic History of West Africa*, 44.
[160] Interview with Honourable Agbeko at Mempeasem, 20/9/2024.
Interview with Efo Tailor at Todzi, 10/10/2024.
Interview with Efo Koffie at Odome, 16/10/2024.

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iron industry as this also limited the effective functioning of the industry as a result of inadequate human resources. Additionally, the constant pressure on the forest for woods for fuel to smelt and smith iron by the smelters and black smiths coupled with the household demand for wood for furniture and housing obstructed the production processes due to shortage of those unique species of tress meant for fuel. Again, the lucrative nature of the cash crop, cocoa stole the hearts of the iron workers. They preferred to engage in cocoa farming since the demand for it and its value was higher as compared to what has become of the iron and iron wares they were producing with the advent of this cash crop. Driven by profit maximization, abled men and women tuned to cocoa farming. Thess marked the turning point in the Akpafu local iron industry since attention was diverted to other means of survival than the local iron production.

On the other hand, the Akpafu local iron industry put up certain resistance mechanisms before declining in 1957. Some of these mechanisms include: the ritual practices of the Akpafu iron workers, technological innovation and adaptation which enhanced the quality of the Akpafu iron. Related to this is the quality of the local iron produced which also contributed to the survival of the Akpafu iron production during the colonial era.

The objectives of this study include: firstly, to examine the factors that influenced iron production in Akpafu during the period 1884-1957, secondly, to identify and analyse the technological innovations and adaptations that emerged in the Akpafu iron production between 1884 and 1957 and, thirdly, to analyse the impact of iron production on the local economy. Chapter two of this research exposed technological innovations and adaptations that emerged in the Akpafu iron production between 1884 and 1957 which preserved the local industry while chapter three analysed the impacts of iron production on the Akpafu local economy. My chapter four examined the decline of Akpafu iron works which implied factors that influenced iron production in Akpafu during the period under study.

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Summary of Findings

I would say my findings have met the objectives of my study. This is due to the fact that delving into the iron production of the Akpafu from 1884 to 1957, it is established that the iron industry of the Akpafu was of immense benefit to them and their neighbours politically, socially and economically. The Akpafu people produced agricultural implements such as hoes, cutlasses and axes that boosted agricultural production. They manufactured weapons such as arrow heads, spears and knives that aided them in securing their lives from attackers and the wars of Asante expansion in the Volta North. These iron tools enabled them to hunt game in the forest. Notably, their gains from trading their metal and metal tools were used to cater for their needs, while some of their youth contracted marriages with the revenues accrued from this industry.

The contact of the Akpafu with the Europeans affected their local iron industry in diverse ways- positively and negatively. The industry, which was under pressure during the colonial regime could not be saved by the government when Ghana gained independence because the Government's interest was said to be in other metals like gold and bauxite in the late 1950s leading to its decline.

Little or no attention was given to why the ancient iron industry survived so many centuries before its collapse. Most scholarly works concentrated on the causes of the decline of iron industries in Africa and West Africa. They cited the trade-impact model as the main cause of the demise of the West African iron industry. According to those scholarly works, the presence of the European iron bars and iron tools on the local markets and the preference for them instead of the local ones. Besides this, harsh taxation regime of the Germans, the advent of formal education in the territory and the emergence of lucrative cash crop farming such as cocoa and coffee also adversely affected the iron production in Akpafu during the colonial period.

I have discovered a novel factor responsible for the decline of the Akpafu local iron industry. This is the ecological model. It involves dependence on charcoal fuels in the African iron industry which

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led to the destruction of the environment influencing the climate. This model notes that when the forest is depleted by way of lumbering to feed other industries, especially for export and charcoal making for local consumption, the smelters and smiths could not obtain the unique species of woods for charcoal to fuel their industries hence the fall of those industries.

About the Akpafu community, the ecological model was a contributory factor in the decline of their iron production. A lot of firewood was needed for the work; there must be a constant supply of intense heat to convert matter from one form to another-rock bearing ore to bloom and bloom to iron products. One can imagine the amount of wood needed to convert into charcoal for the production of iron and its products. It is noteworthy that those kinds of trees found in the environment which were used for fuel took years to grow, and once cut for production, it is lost for good. The Akpafu local iron workers did not replace those trees by planting new ones. If they did, it would take years for them to mature for harvest and use. The continuous depletion of the forest to fuel the iron production and for other purposes soon would leave the indigenes with no trees for fuel to continue production. The disappearance of those trees means work must come to a halt. This can be said of the Akpafu people, whose iron production declined in the 1950s.

The Akpafu iron industry did not collapse easily when it encountered opposing forces such as influx of foreign cheap iron into the territory by the European traders and production fuel challenge. One of my findings is that during the period 1884-1957, the Akpafu iron workers' unique practices other than pure technological expertise sustained the local iron industry for some time before it finally collapsed. The unique practices include customs and traditions of the iron workers shrouded in some kind of religious beliefs, the local folks attachment to local iron which were believed to have some spiritual bonding with them, the quality of local iron produced by the Akpafu smelters and smiths which were preferred by consumers caused the industry's resilience in the face of external threat involving imported iron bars and products.

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According to the elders in the Akpafu community, the series of rituals and conventions governing iron production in the Akpafu community, to a large extent safe safeguarded and sustained the iron works than any technology. It is shown from the beginning in constructing the furnace for smelting, certain rituals were performed such as pouring libation, burying some herbs and kernels underground, avoiding sexual intercourse before smelting, and preventing women in their menstrual cycle from seeing the furnace. Closely related to this is the absence a god or a shrine dedicated to iron as it is the case in other environments like in some parts of the northern and the central regions in Ghana.The Akpafu people, rather had gods that they worshipped and they prayed to them to bless their efforts and they offered thanks after work.

The Akpafu local iron industry survived for quite some time before its demise, another reason being that the European iron bars were of poor quality relative to the local iron. The Akpafu and her neighbours would only prefer foreign iron bars when there was no local ones readily available for their use. Thus, the local consumers' bond with the local iron and its products, the quality of the local iron in addition to the technological expertise of the Akpafu iron workers, all preserved the Akpafu iron industry in the past.

My thesis is that ritual practices of the Akpafu iron workers, coupled with technological innovation and adaptation and the quality of the local iron produced accounted for the resilience of the Akpafu iron production during the colonial era. On the other hand, the ecological model, that is the indiscriminate felling of trees in the forest to fuel the iron production activities without a concerted effort of replacing them led to shortage of the trees in the forest, thus deforestation contributing to the decline of the Akpafu iron production during the colonial period.

Conclusion

Using my conceptual framework, which posits that the intersection of traditional iron production practices and colonial influence in Akpafu, Ghana, revealed a complex dynamic of cultural

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resilience, adaptation, and transformation between 1884 and 1957. This study illuminates the agency of local iron producers in navigating technological innovations and colonial pressures, shaping the trajectory of iron production in the region. I investigated and identified changes and reasons why Akpafu local iron industry survived during the colonial era which has hitherto remained a lacuna in historiography. In effect, the African culture and traditional technology would be well appreciated, something that had been thwarted by the arrival of Europeans on the continent. This study has departed from others where the focus was on why the African local iron industries declined, collapsed than why they survived for long before their decline or collapse.

Besides, scholars who researched on the causal factors for the collapse of African local iron industries during the colonial period seemed to restrict themselves to the "Trade Impact Model," that is the preference for European iron bars and iron wares by the local people thwarted their local iron industries in Africa. This study makes its contribution to the economic history of Africa by exploring another causal factor for the decline, collapse of local iron industry in Ghana, that is "ecological model."

The story of iron in Akpafu between 1884 and 1957 is not just an account of things made of metal. It is an account of how a community mobilized knowledge, belief, and labour to convert stone into tools, and how that capacity was reconfigured by the global forces of the 19th and 20th centuries. The furnaces are cold; however, their ruins and proverbs left behind continue to shape the Akpafu's sense of itself. Recalling that oral tradition is not limited to nostalgia but a way of appreciating how technological change, culture, and power intersect in the past and in the choices Ghana faces today.

Recommendation

Stake holders ought to preserve, research, and teach the history of Akpafu iron production before its material and oral traces disappear, and use that history to reshape how Ghana thinks about

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indigenous technology. Furnaces, slag mounds, and oral accounts from elders should be documented and protected through community mapping, legal listing with the Ghana Monuments Boards, and recording of last the last elders linked to the smelting families.

This history should not stay in a thesis. It should be in Junior High Schools and Senior High Schools history and Technical and Vocational Education Training lessons as concrete Ghanaian case of innovation, adaptation, and decline under structural change. That gives students local roots for science and technology, not just imported stories.

In addition to shedding light on the near-forgotten traditional iron technology in Ghana, continued historiographical attention should be given to local industries of other minority groups in Ghana such as Bimoba, Chokosi, Konkomba, Nchumbulu and Wala. These narratives will create a pristine reflection of minority groups' contribution to socio-economic development of colonial and post-independent African societies.

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From personal archive and from Len Michael Pole, R.S. Rattray and Wilson K. Yayoh's works.

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APPENDICES

APPENDIX I: Interview guide

Interview Guide

A History of Iron Production in Akpafu, Ghana, 1884-1957.

(This interview will last between 40 to 50 minutes)

Specific Interview Questions

1. Introduction and Background

- Start by introducing self and the purpose of the interview.
- Provide a brief overview of the research topic: "A History of Iron Production in Akpafu, Ghana, 1884-1957."
- Can you tell me about your connection to Akpafu and its iron production?
- How did you learn about Akpafu's iron production and what stories have been passed down through generations?

2. Historical Context (1884-1957)

- What do you know about the start of iron production in Akpafu in 1884?
- How did the industry evolve during the colonial period (1884-1957)?
- Were there any significant events challenges or milestones during this period?

3. Production Processes and Techniques

- Can describe the traditional iron production processes used in Akpafu?

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- How did the production processes change over time (introduction of new technologies)?
- What were the main tools and equipment used in iron production?

4. Social and Economic Impact

- How did the iron production impact the local economy and community?
- Were there any social changes or cultural practices influenced by iron production?
- How did the industry affect the environment and natural resources?

Political Impact

5. How did the Akpafu iron production influence local politics?

6. Challenges and Decline

- What challenges did the iron production industry face during the period (e.g. competition, colonial policies)?
- How did the industry decline and what factors contributed to its decline?
- Were there any efforts to revive or preserve the industry?

6. Legacy and Cultural Significance

- What is the current state of iron production in Akpafu and is it still practiced?
- How has the legacy of iron production influenced the community's identity and cultural heritage?
- Are there any efforts to preserve the history and cultural significance of Akpafu iron production?

7. Additional Questions

- Are there any historical documents, records or artifacts related to Akpafu's iron production that you know?
- Can you recommend other individuals or sources for further research?
- Are there any specific stories, anecdotes or experiences you would like to share about Akpafu's iron production?

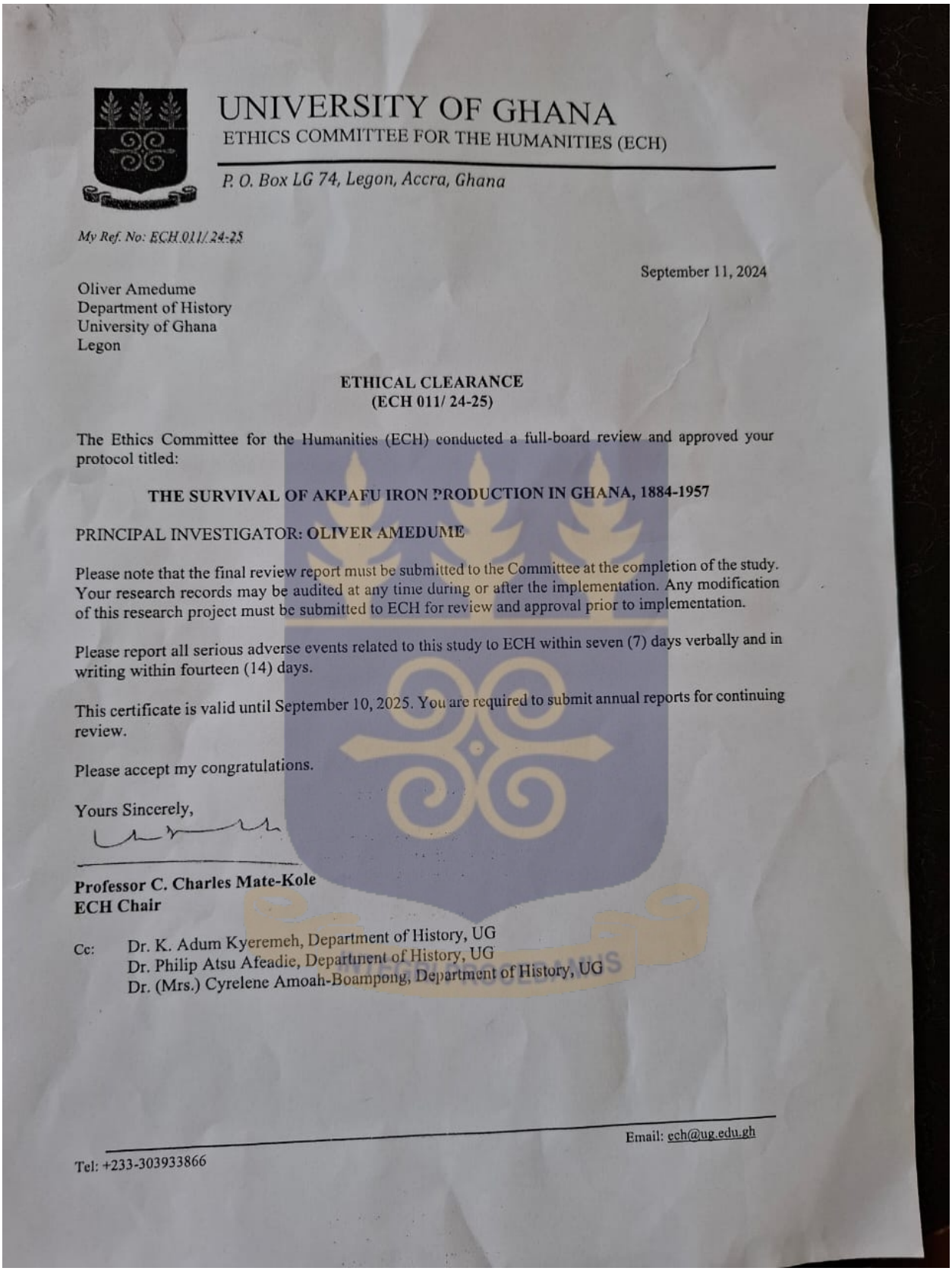
Note: Questions and discussions points will be adapted based on the interviewee's expertise, background and relevance to the research topic. Additionally, I will maintain a conversational tone and allow flexibility for the interviewee to share their perspectives and insights.

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APPENDIX II: Ethical Clearance



UNIVERSITY OF GHANA
ETHICS COMMITTEE FOR THE HUMANITIES (ECH)
P. O. Box LG 74, Legon, Accra, Ghana

My Ref. No: ECH 011/ 24-25

September 11, 2024

Oliver Amedume
Department of History
University of Ghana
Legon

ETHICAL CLEARANCE
(ECH 011/ 24-25)

The Ethics Committee for the Humanities (ECH) conducted a full-board review and approved your protocol titled:

THE SURVIVAL OF AKPAFU IRON PRODUCTION IN GHANA, 1884-1957

PRINCIPAL INVESTIGATOR: **OLIVER AMEDUME**

Please note that the final review report must be submitted to the Committee at the completion of the study. Your research records may be audited at any time during or after the implementation. Any modification of this research project must be submitted to ECH for review and approval prior to implementation.

Please report all serious adverse events related to this study to ECH within seven (7) days verbally and in writing within fourteen (14) days.

This certificate is valid until September 10, 2025. You are required to submit annual reports for continuing review.

Please accept my congratulations.

Yours Sincerely,

Professor C. Charles Mate-Kole
ECH Chair

Cc: Dr. K. Adum Kyeremeh, Department of History, UG
Dr. Philip Atsu Afeadie, Department of History, UG
Dr. (Mrs.) Cyrelene Amoah-Boampong, Department of History, UG

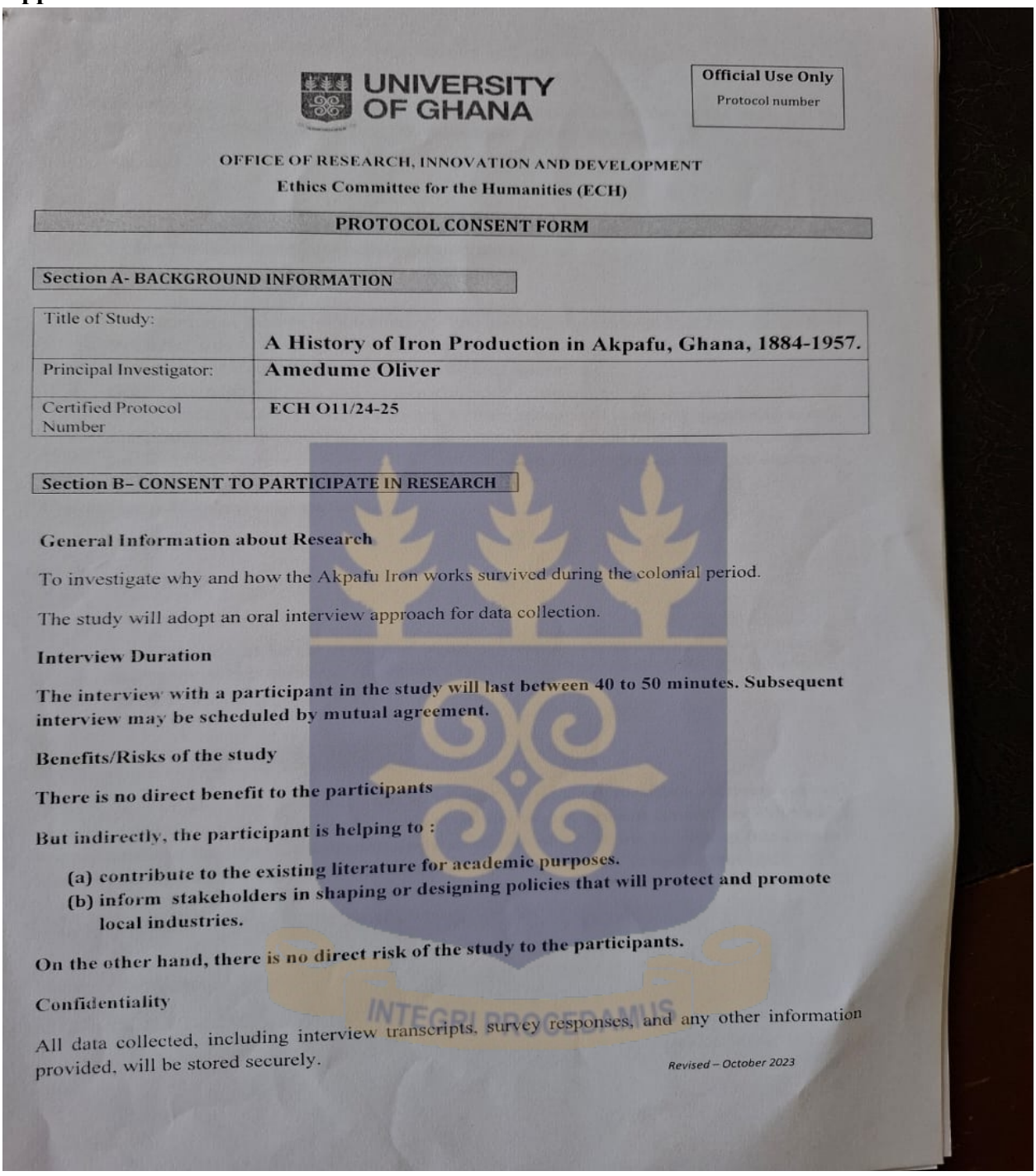
Tel: +233-303933866

Email: ech@ug.edu.gh

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APPENDIX III: Protocol Consent Form

Appendix III: a



UNIVERSITY OF GHANA

Official Use Only
Protocol number

OFFICE OF RESEARCH, INNOVATION AND DEVELOPMENT
Ethics Committee for the Humanities (ECH)

PROTOCOL CONSENT FORM

Section A- BACKGROUND INFORMATION

Title of Study:	**A History of Iron Production in Akpafu, Ghana, 1884-1957.**
Principal Investigator:	**Amedume Oliver**
Certified Protocol Number	**ECH 011/24-25**

Section B– CONSENT TO PARTICIPATE IN RESEARCH

General Information about Research

To investigate why and how the Akpafu Iron works survived during the colonial period.

The study will adopt an oral interview approach for data collection.

Interview Duration

The interview with a participant in the study will last between 40 to 50 minutes. Subsequent interview may be scheduled by mutual agreement.

Benefits/Risks of the study

There is no direct benefit to the participants

But indirectly, the participant is helping to :

(a) contribute to the existing literature for academic purposes.
(b) inform stakeholders in shaping or designing policies that will protect and promote local industries.

On the other hand, there is no direct risk of the study to the participants.

Confidentiality

All data collected, including interview transcripts, survey responses, and any other information provided, will be stored securely.

Revised – October 2023

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Access to this data will be restricted to the researcher only, and appropriate measures will be taken to prevent unauthorized access. Your identity will be kept strictly

confidential throughout the research process. Any information collected during the study will be kept anonymous to ensure that your personal details remain confidential.

Compensation

As a token of appreciation for your participation, you would be offered a compensation of an amount of Fifty Ghana Cedis (GHC50) only at the end of the study. This commitment will be fulfilled when you participate fully in the interview session.

Withdrawal from Study

Participation in this study is voluntary. You have the right to withdraw from the study at any time without penalty. Your decision to participate or withdraw will not affect your relationship with the researcher or any affiliated institutions.
Before participating, you will be provided with detailed information about the study and your voluntary consent will be obtained. You are encouraged to ask any questions and seek clarification before providing your consent. You have the right to complete withdrawal, if you find that the questions are dealing with sensitive subjects beyond what you can cope.

Contact for Additional Information

Dr. Philip Atsu Afeadie

0243133028

mawmenyo@gmail.com

- If you have any questions about your rights as a research participant in this study you may contact the Administrator of the Ethics Committee for Humanities, ISSER, University of Ghana at ech@ug.edu.gh or 00233- 303-294-0531.

Section C- PARTICIPANT AGREEMENT

"I have read or have had someone read all of the above, asked questions, received answers regarding participation in this study, and am willing to give consent for me, my child/ward to participate in this study. I will not have waived any of my rights by signing this consent form. Upon signing this consent form, I will receive a copy for my personal records."

EFO KOFFIE GBEDE

Name of Participant

Signature or mark of Participant

16/10/2024

Date

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If participant can neither read nor understand the form themselves, a witness must sign here:

I was present while the benefits, risks, and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

MAWULI SIAM

Name of witness

16/10/2024

Signature of witness / Mark Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

AMEDUME OLIVER

Name of Person who Obtained Consent

16/10/2024

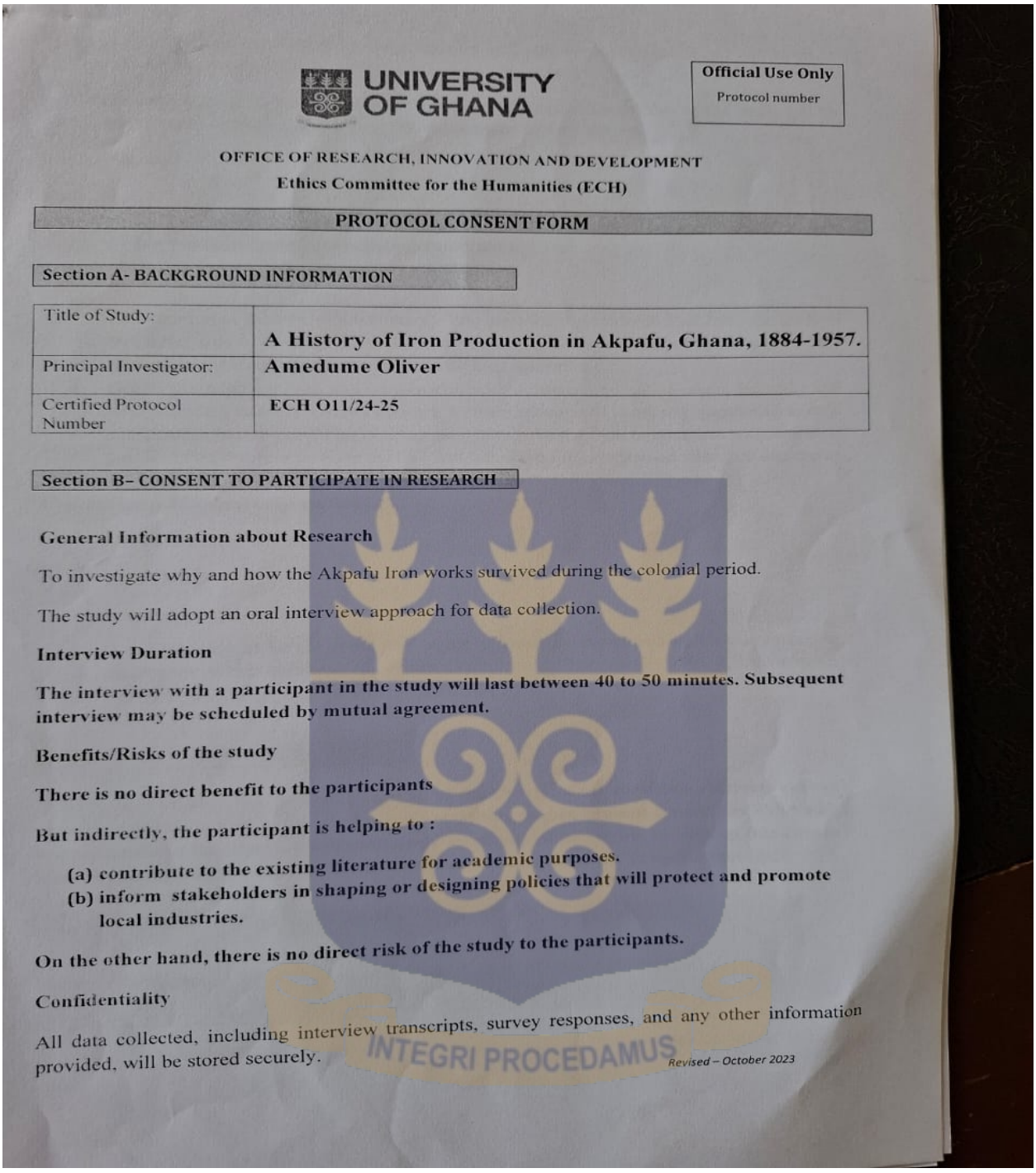
Signature of Person Who Obtained Consent Date

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Appendix III: b



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OFFICE OF RESEARCH, INNOVATION AND DEVELOPMENT
Ethics Committee for the Humanities (ECH)

PROTOCOL CONSENT FORM

Section A- BACKGROUND INFORMATION

Title of Study:	**A History of Iron Production in Akpafu, Ghana, 1884-1957.**
Principal Investigator:	**Amedume Oliver**
Certified Protocol Number	**ECH O11/24-25**

Section B– CONSENT TO PARTICIPATE IN RESEARCH

General Information about Research

To investigate why and how the Akpafu Iron works survived during the colonial period.

The study will adopt an oral interview approach for data collection.

Interview Duration

The interview with a participant in the study will last between 40 to 50 minutes. Subsequent interview may be scheduled by mutual agreement.

Benefits/Risks of the study

There is no direct benefit to the participants

But indirectly, the participant is helping to :

(a) contribute to the existing literature for academic purposes.
(b) inform stakeholders in shaping or designing policies that will protect and promote local industries.

On the other hand, there is no direct risk of the study to the participants.

Confidentiality

All data collected, including interview transcripts, survey responses, and any other information provided, will be stored securely.

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Access to this data will be restricted to the researcher only, and appropriate measures will be taken to prevent unauthorized access. Your identity will be kept strictly

confidential throughout the research process. Any information collected during the study will be kept anonymous to ensure that your personal details remain confidential.

Compensation

As a token of appreciation for your participation, you would be offered a compensation of an amount of Fifty Ghana Cedis (GHC50) only at the end of the study. This commitment will be fulfilled when you participate fully in the interview session.

Withdrawal from Study

Participation in this study is voluntary. You have the right to withdraw from the study at any time without penalty. Your decision to participate or withdraw will not affect your relationship with the researcher or any affiliated institutions.
Before participating, you will be provided with detailed information about the study and your voluntary consent will be obtained. You are encouraged to ask any questions and seek clarification before providing your consent. You have the right to complete withdrawal, if you find that the questions are dealing with sensitive subjects beyond what you can cope.

Contact for Additional Information

Dr. Philip Atsu Afeadie

0243133028

mawmenyo@gmail.com

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GILBERT ONUSU

Name of Participant

Signature or mark of Participant

30/09/2024

Date

Revised – October 2023

University of Ghana http://ugspace.ug.edu.gh

If participant can neither read nor understand the form themselves, a witness must sign here:

I was present while the benefits, risks, and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

KPATAKPLA PROSPER

Name of witness

30/09/2024

Signature of witness / Mark Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

AMEDUME OLIVER

Name of Person who Obtained Consent

30/09/2024

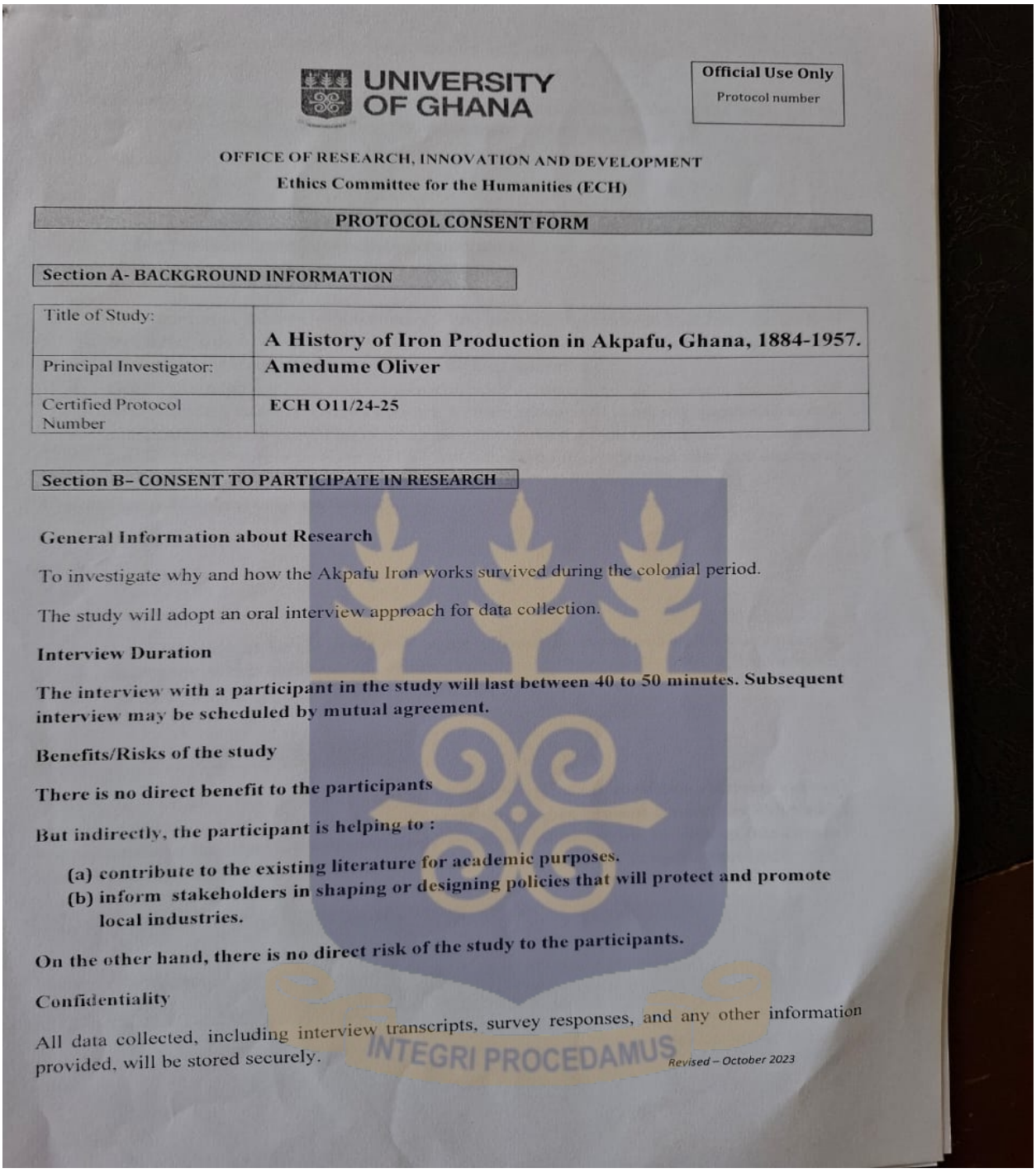
Signature of Person Who Obtained Consent Date

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Appendix III: c



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Ethics Committee for the Humanities (ECH)

PROTOCOL CONSENT FORM

Section A- BACKGROUND INFORMATION

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0243133028

mawmenyo@gmail.com

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FRANK H.K DADJA

Name of Participant

Signature or mark of Participant

12/10/2024

Date

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If participant can neither read nor understand the form themselves, a witness must sign here:

I was present while the benefits, risks, and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

FESTUS OGBE

Name of witness

Signature of witness / Mark

12/10/2024

Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

AMEDUME OLIVER

Name of Person who Obtained Consent

Signature of Person Who Obtained Consent

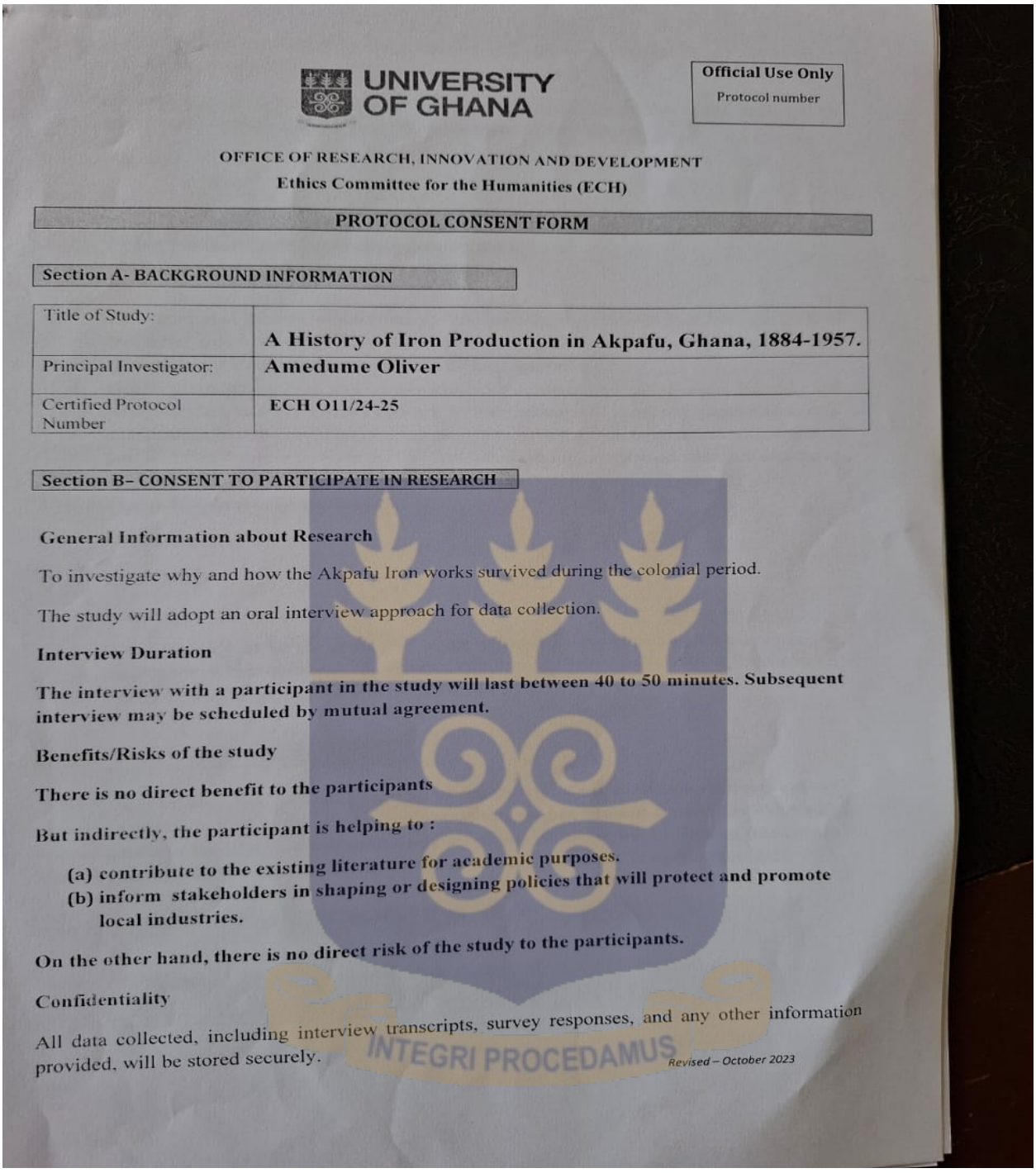
Date

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Appendix III: d



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OFFICE OF RESEARCH, INNOVATION AND DEVELOPMENT
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LAWRENCE ATRI (HON AGBEKO)

Name of Participant

[signature]

Signature or mark of Participant

20/09/2024

Date

Revised – October 2023

University of Ghana http://ugspace.ug.edu.gh

If participant can neither read nor understand the form themselves, a witness must sign here:

I was present while the benefits, risks, and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Harry Okity

Name of witness

20/09/2024

Signature of witness / Mark Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

AMEDYME OLIVER

Name of Person who Obtained Consent

20/09/2024

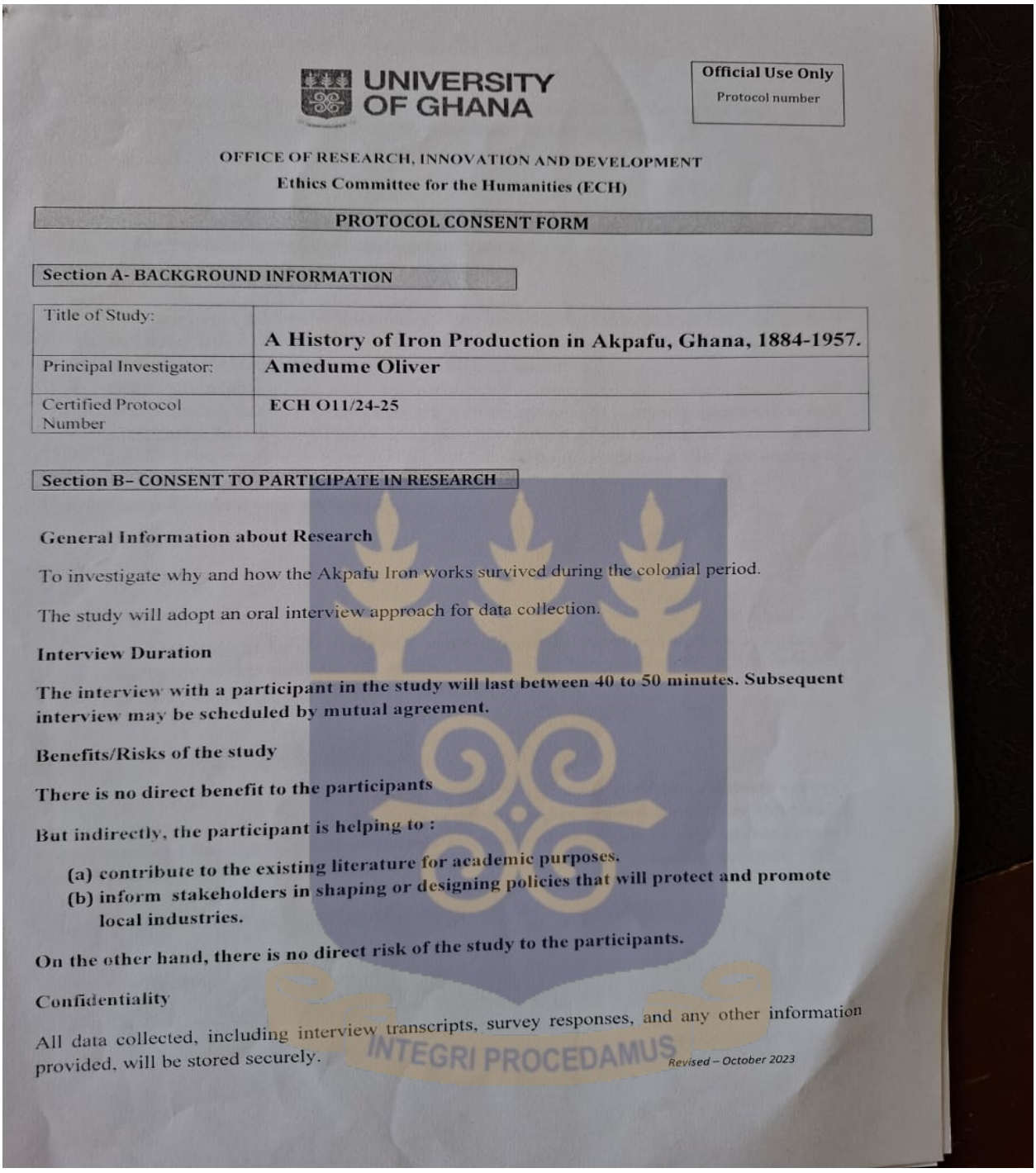
Signature of Person Who Obtained Consent Date

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Appendix III: e



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HUMPHERY AGBEWU (Tailor)

Name of Participant

H. Agbenu

Signature or mark of Participant

18/10/2024

Date

Revised – October 2023

University of Ghana http://ugspace.ug.edu.gh

If participant can neither read nor understand the form themselves, a witness must sign here:

I was present while the benefits, risks, and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

EGAS AGBEWU

Name of witness

10/10/2024

Signature of witness / Mark

Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

AMERUMI OLIVER

Name of Person who Obtained Consent

10/10/2024

Signature of Person Who Obtained Consent

Date

INTEGRI PROCEDAMUS

Revised – October 2023