

NORTHERN FOOD INDEX



**A database report on:
Indigenous foods in Northern Region**

2021

NORTHERN

FOOD

INDEX

A database report on:
Indigenous foods in Northern Region



WOMEN'S
ENTREPRENEURSHIP
& LIVELIHOOD
INITIATIVE
(WELI)



AFRICA
SKILLS
HUB
Building Skilled African Youth As Agents Of Change



Global Affairs
Canada

Northern Food Index:
A Database Report on Indigenous Foods in Northern by
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FOREWORD

The vision of the Northern Food Index is to develop a database of all foods in the northern part of Ghana to be a stepping stone for nutrition promotion and food product development for business and innovation. This database is to provide a knowledge-based document to be a reference point for indigenous

foods consumed currently and abandoned. It shall, therefore, be a starting point for indigenous food collection in all parts of Ghana. The common effort of all and sundry to make the database vision available is heartily acknowledged.

.....
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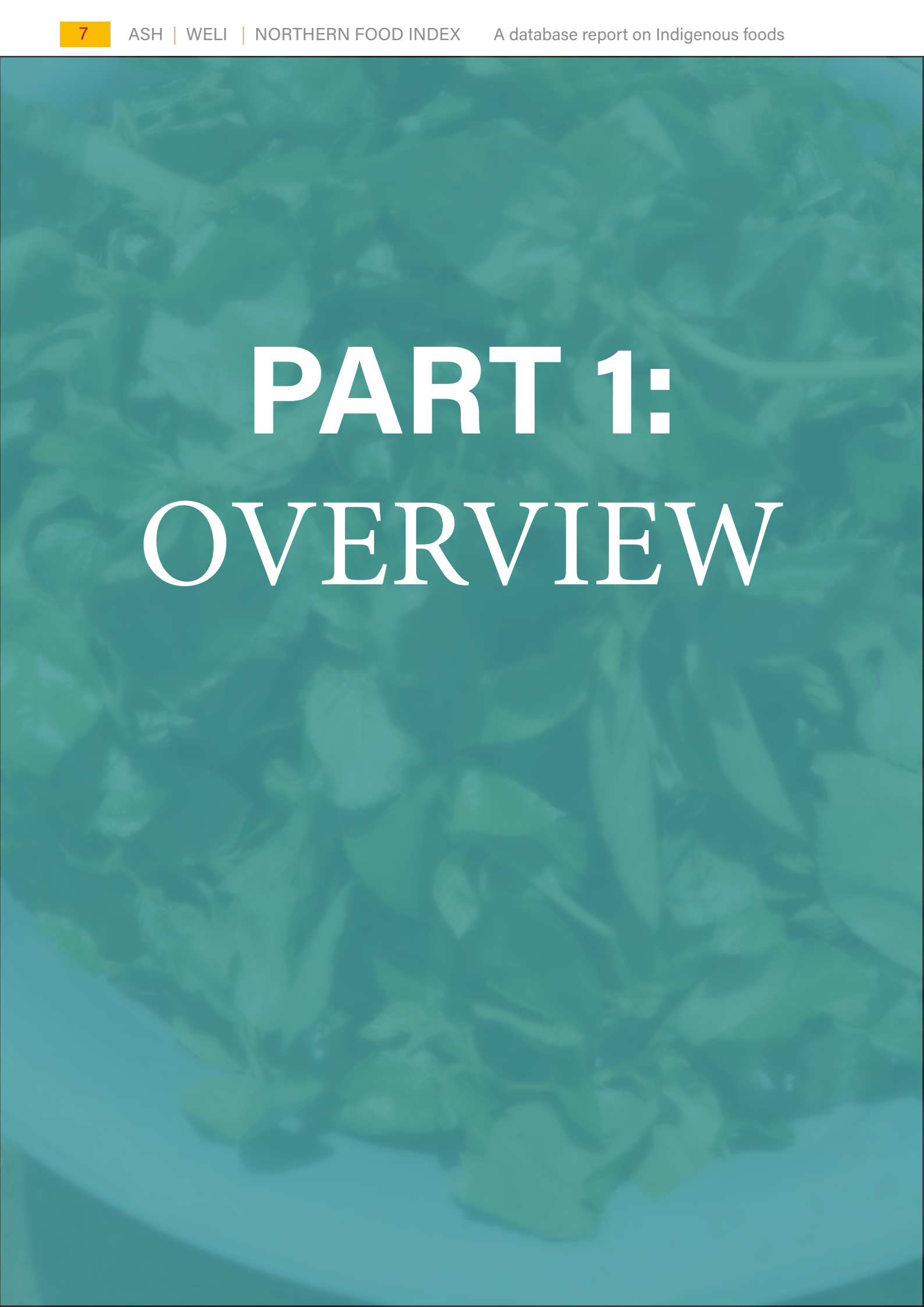
Acronyms and Abbreviations

ASH	Africa Skills Hub
CWY-JCM	Canada World Youth - Jeunesse Canada Monde
FGM	Female Genital Mutilation
GAC	Global Affairs Canada
GSS	Ghana Statistical Service
IBM	International Business Machines Corporation
LMIC	Lower-Middle Income Country
SPSS	Statistical Package for the Social Sciences
WELI	Women Entrepreneurship and Livelihoods Initiative
NGOs	Non-Governmental Organizations
NGDOs	Non-Governmental Development Organizations
OECD	Organization for Economic Co-operation and Development

PREFACE

The 2021 Northern Food Index is a database report on indigenous foods in the Northern region of Ghana. It is the first in a series of report publications as part of the learning sharing and advocacy approach for the Women's Entrepreneurship and Livelihoods Initiative (WELI) being piloted by Africa Skills Hub (ASH) in partnership with Canada World Youth - Jeunesse Canada Monde (CWY-JCM), and Global Affairs Canada (GAC). The report is in two parts. **Part One** (Chapters 1 and 2) opens with a scene-setting narrative for the Northern Food Index. It provides a background of the WELI intervention and how its groundbreaking initiatives have led to the commissioning of the Northern Food Index. It also expounds upon the aims, scope, and

objectives of WELI, describing what exactly ASH and its partner organizations plan to achieve in the Northern Region of Ghana. Last, it explains why the Northern Food Index is an important read. **Part Two** (Chapters 3 to 8) tackles the Northern Food Index database report. Each chapter explores the methodology, results, and main findings of our research into indigenous foods found in the Northern region of Ghana. It educates and expresses Ghanaian food culture with splendid gallery images of indigenous foods existing, abandoned, or unexplored. The part ends with a series of reflections, and a call to action for various stakeholders based on the findings of the report.



PART 1: OVERVIEW

1.0. Background

The Women's Entrepreneurship and Livelihoods Initiative (WELI) is an initiative of Africa Skills Hub in partnership with Canada World Youth Jeunesse Canada Monde (CWY-JCM), and Global Affairs Canada (GAC) implemented across Ghana (in the Volta and Northern regions) and in Senegal. The WELI intervention deploys a gender-responsive economic empowerment approach in addressing the increasing vulnerabilities that rural young women in Ghana and Senegal continue to face as a result of the Covid 19 pandemic. This has all happened against the backdrop of shrinking overseas development assistance where new approaches such as social enterprise, impact investing, and green entrepreneurship among others have now become the preferred approach for donors. In the Northern region of Ghana, the WELI intervention deploys a gender-responsive economic approach using advocacy and social enterprising as the vehicle for social behavioral change.

The Northern Region is one of the sixteen regions of Ghana located in the northern part of the nation. It was the biggest of the previous ten regions, covering a geographical boundary of 70,384 square kilometers until December 2018 when the Savannah and North East regions were derived from it. The division of the region was as a result of a long-standing increasing demand from the natives and people of the Western part of the Northern region that development was directed only to the Eastern part around the Tamale Metropolis and its surrounding towns like Savelugu, Walewale, and Yendi. The Gonjaland Youth Association also on several occasions made the partitioning of the region a recurring theme at their annual meetings and congresses (Kumado, 2007). The Northern Region House of Chiefs presented a resolution for the creation of a new region to the former Vice President John Dramani Mahama at the Osu Castle in October 2009. All these arguments among other petitions fueled the creation of two additional regions the Savannah Region and the North East Region.

Agriculture, hunting, and forestry are the main economic activities in the region. Together, they account for the employment of 71.2 percent of the economically active population, aged 15 years and older. Less than a tenth (7.0%) of the economically active people in the region are unemployed. The Northern region of Ghana is a place of immense natural wonder and artistic beauty. These features make the region a favorite tourist destination. The region is also known for its warm climate, thus offering the right amount of sunshine to keep its inhabitants and tourists warm. The region has fertile land enabling it to produce and act as a food basket, providing yams, meat, cereals, and other foods to the whole of the nation. The economy of the region is dependent on agriculture thus making most of its natives farmers; a major feature of the first industrial revolution. In the Northern Region, women are known for their culinary delights through a variety of sauces, cakes, biscuits, and drinks that are made from readily available local ingredients such as herbs, leaves, and grains.

Historically, the region is known to have significant socioeconomic challenges comprising of early girl-child marriage, sexual and gender-based violence, low rate of industrial activity, most girls being uneducated, etc. The Northern region of Ghana is known to be one of the poorest regions in Ghana despite the heavy presence of NGOs in the area, with the incidence of the poverty level of 52% above the national average of 28.5%, (GSS, 2007). The region has inadequate social infrastructures like schools, good roads, health facilities, which are indicators of economic growth and development. The rural young women in the region live in poverty and are particularly vulnerable, as they face high levels of interpersonal violence, including domestic slavery, patriarchy, forced marriage of young girls, unpaid care work, and other harmful norms.

Being the region that has attracted the most donor support and funding for development, it is expected that the Northern region should have attained a higher level of development by now, however, this has not been the case. All this donor support is considered by some to have rather created a donor dependency syndrome on the part of beneficiaries (natives, NGOs, and government institutions) that receive funds for development projects in the North. Dependency, when it becomes a syndrome, deprives people of their economic independence, makes them incapable of productivity, and also a social liability (Owusu-Sekyere B.N., 2005). This is the reason why NGOs are increasingly advocating for sustainability. In that way, community members will begin to inculcate the culture of owning all the interventions, build capacity, and sustain the intended outcomes of the projects because the NGOs will not forever remain with them to provide those supports. This is evidenced from the current move by Denmark, which scaled up its commercial cooperation while development cooperation was downscaled from 2010, and will exit from all official development assistance by 2020 following Ghana's attainment as a Lower-Middle Income Country (LMIC) on November 5, 2010 (OECD, 2016a: 105). It is expected that Ghana should make a significant effort to fight its poverty, (Kumi E., 2019). The current changing aid landscape demands a new examination and paradigm shift of what is possible in the North.

With new approaches such as social enterprise, impact investing, and green entrepreneurship among others as the new and preferred vehicles of socio-economic development by donors, there is still hope for the economic empowerment of women and adolescent girls in the North through social enterprising and advocacy. This approach will also double as an instrument in addressing

the issue of inequality and sexual and gender-based violence (SGBV). The one thing that is unique about the WELI piloting initiative is that on one hand, it deploys advocacy to delve deeper into identifying and addressing the grassroots causes of SGBV, gender inequality, FGM, and other traditional but outmoded cultural practices especially in the Northern region of Ghana. On the other hand, it uses business incubation to provide thematic and social enterprise business skills to help with the economic empowerment and improved livelihoods of rural young women and adolescent girls.

Food and Beverage Entrepreneurship has always been the lowest-hanging fruit for the economic empowerment of women in the Northern region which is a key factor in addressing the issue of SGBV. This is because, all other factors considered, a woman is less susceptible to harmful societal norms like SGBV, patriarchy, and domestic slavery, unpaid care work, etc. when she is economically empowered and thus less reliant on a man for survival. However, the North has not been able to tap into the true potential of its food and beverage industry due to factors like poor innovation, lack of business thematic skills, social enterprise skills, no diversification of value chains, and the inadequate employment of advanced technologies in the production of indigenous foods. There is the need for innovation to boost the diversification of agricultural value chains and this diversification is only possible with sufficient knowledge on the available indigenous foods and resources.

2.0. Relevance of the Northern Food Index

The problem with the North is that there is very little diversification of food value chains. The market is usually proliferated with the same products whether it is shea butter, sobolo, or cashew leaving several indigenous ingredients, foods, and resources unexplored. There is the need for innovation to boost diversification of the food value chain if the Northern region is ever to realize the true potential of its food and beverage industry likewise the rural young women attaining economic empowerment and improved livelihoods. This innovation drive can take place when; knowledge about the available indigenous ingredients as well as their nutritional values are made known to the public. Knowledge about the nutritional value and existence of diverse indigenous ingredients will inspire value addition to these indigenous ingredients, dishes, and drinks further increasing their appeal, nutritional value, and convenience which ultimately results in increased demand for them both locally and internationally. This food index is the first step towards diversification of the value chains in the region. The Northern Food Index is important for the following reasons;

- a. It is the beginning of being able to identify products in the Northern Region that have not been recognized or scaled up to become valid businesses and value chains.**
- b. It will help stimulate conversation and further research on indigenous foods existing, unexplored, or abandoned.**
- c. It seeks to justify impact investment geared towards diversification and wealth creation for women. Investing in time-saving food technologies, Food Hubs, Factories, and Women cooperatives as a means of creating jobs.**
- d. It seeks to educate and express Ghanaian food culture.**

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PART 2: THE NORTHERN FOOD INDEX



Summary

There are many indigenous foods found in many African cultures. This research sought to explore the indigenous foods found in Northern Region. Four major markets were visited to investigate the ingredients, drinks, and dishes available and abandoned by the people of the Northern Region. In all, 131 food items were found within Northern Region during the data collection month (May 2021). They included raw ingredients including fruits, dishes, and drinks. Thirteen out of all the food items have been abandoned. A picture

gallery was developed to show the pictures of the food items collected, their indigenous name, common name (translation of the indigenous name to English), usage, seasonality, and method of cooking (dishes) or processing (drinks). This survey serves as a stepping stone to create a database of indigenous foods in the Northern Region and other parts of Ghana as a whole. This could lead to improvement in food security, nutrition, and business opportunities.

5.0. Introduction

Food security exists when “all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” [1]. The consumption of nutritious and safe foods is promoted as an effective strategy to combat hunger and malnutrition. With the rise in the population of communities, the influx of malnutrition and poverty is on the increase especially among women and children below five years [2].

Concerning food and nutrition security and enhancement of quality of diets, a major role is played by the frequent consumption of indigenous foods as suggested to significant sources of nutrients [3, 4]. Indigenous foods refer to those which indigenous people have access to locally and within traditional knowledge and the natural environment from farming or wild harvesting [5]. A study in Botswana by Kasimba and colleagues [6] showed that indigenous foods accounted for relatively high percentages of energy intake in children and women, 41% and 36%, respectively. The mean intake of zinc and vitamin A in women was higher from indigenous foods compared to non-indigenous foods. For this research, indigenous foods are defined as foods that are native in the Northern Region or have been introduced for a long time from other parts of the country, that is, through both animal and plant sources [4].

In addition to their nutrient values, indigenous foods are cheaper, easy to cultivate, and form part of food culture. Yet these indigenous foods are under-explored. For instance, despite the importance of these indigenous foods, there is a higher competition between them and the influx of exotic foods in the commercial market. Thus, these foods are losing their existence and popularity among Ghanaians. Also, policies on global food security have ignored for some time

the nutritive value of indigenous foods especially those cultivated in rural communities [3].

The Northern Region is one of the largest in Ghana with Tamale as the regional administrative and economic centre. The production of indigenous crops in this part of the country is solely dependent on seasonal climatic patterns. Due to the nature of their dependence on the rainy season, food crop production flourishes during this time. However, cultivation during the dry season is limited because of inadequate alternative water sources for irrigation.

Common staples grown include cereals such as maize, millet, sorghum, legumes (example, groundnut, bean, cowpea, pigeon pea, and lately soybean), and a variety of vegetables (example, pepper, onion, garden egg, and dark green leafy vegetables). Rural and urban livestock keeping are common in this part of Ghana. Mostly reared animals to include cows, goats, sheep, and poultry (chicken, guinea fowl, ducks, and turkeys). However, these animals are kept for the festive season and not as part of household meals [2]. Nevertheless, there is a rise in competition for the consumption of indigenous and foreign foods in the Northern Region. This may be due to the change in taste and lifestyle preferences, inadequate supply of these foods, and lack of knowledge about the importance of consuming these foods.

According to Guiné et al. (2021), quality and association with the tradition of indigenous foods are highly praised by consumers but still rely on the demand for healthier, more nutritious, and convenient foods. Thus, if indigenous foods want to be kept on the pace as compared to foreign ones, there is a need for innovation to meet consumers' demands. This is because food consumption habits in Ghana have changed over time due to lifestyle changes. Some indigenous foods have however been on-demand to date and this situation can encourage food industries to innovate to meet the needs of consumers [8].

To help curb these issues surrounding indigenous foods, it is worth noting, to develop a database of indigenous foods in the Northern Region to help preserve knowledge on indigenous foods and raise awareness of the diversity of foods in the region. This will further strengthen food security and food sovereignty in the area. This research, therefore, aimed to develop a database of indigenous foods in the Northern Region of Ghana by conducting a cross-sectional survey across the major market centres in the region.

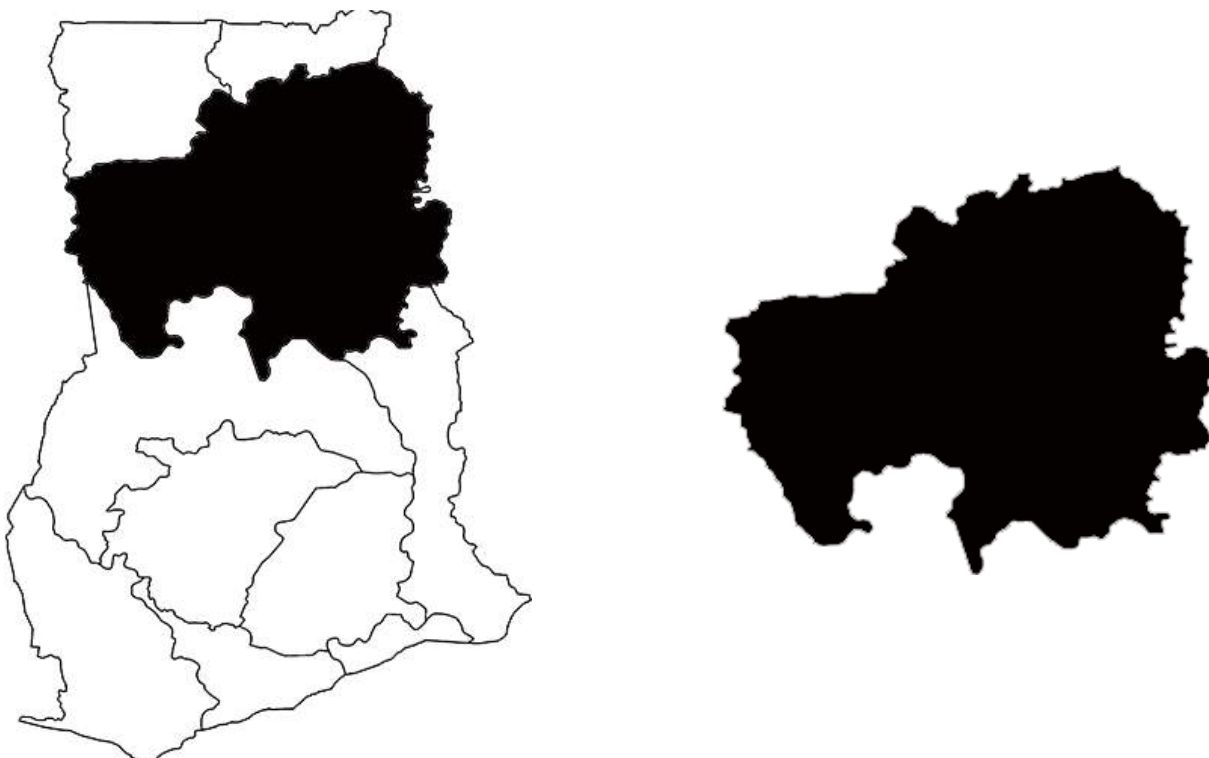


Fig.1 Black portion showing the map of Northern Region in Ghana

6.0. Methodology

6.1. Study design and site

A cross-sectional study design was used to explore the indigenous foods in four selected major markets in Northern Region. The names of the markets were Tamale Central, Aboabo, Lamashegu, and Savelugu.

6.2. Sampling procedure

Due to the nature of the study, the Snowball sampling methodology was adopted to reach target respondents. The sampling procedure was used to first, identify one person who sells the indigenous products and was asked after the interview to point out the next person he or she knows sells indigenous products. As such, referrals were mainly used until a perceived last person was identified. A total of 170 respondents were recruited for the study.

6.3. Data Collection Procedure

Data collected included names and pictures of ingredients, foods, and drinks. The data collection was in May 2021. A team of 7 comprising of 3 enumerators, 3 photographers, and one lead enumerator participated in the data collection. Each enumerator was paired with a photographer to take shots of the products being sold by the respondent. The enumerators interviewed in the

local dialect of the respondent to gather enough information as possible.

There were three categories of food items namely ingredients, drinks, and dishes. Each enumerator was assigned to collect data on either indigenous ingredient, dish, or drink. The ingredients consisted of raw items that are used in preparing food or drink. The drinks consisted of all sweet-liquid products that are edible. The dishes consisted of all food items that are either eaten as a main dish (the protein-containing food), accompaniment (carbohydrate food), dessert, or snack that are prepared traditionally in the Northern Region of Ghana. The questionnaire had the following items tabulated:



Figure 2: An enumerator conducting interview

Box 1: Interview Questions**The questionnaire had the following items tabulated**

1. Name of food item: Indigenous name given to ingredient including fruits, dish, or drink that are found to be edible in the Northern Region.
2. Common name: This refers to a translation of the meaning of the indigenous name of the food item to the English language.
3. Sensory characteristics: Shape, texture, colour, and taste.
4. Usage (dishes and drinks): Main dish, accompaniment, appetizer, dessert, snack
5. Method(s) of preparation (dishes and drinks): Boiling, roasting, frying, grilling, stewing, steaming, and stewing.
6. Other use: Ethnic medicine, aphrodisiac, meal for the dead, bride price.
7. Seasonality (Ingredients): All year round, rainy season, harmattan season, or month in which it comes to the region.

6.4. Consent For Participation

Respondents were asked to agree to consent for participation before the start of each interview. Confidentiality was duly addressed by not asking of the name of the respondent, asking to snap food items only, and snapping the respondent upon request and agreement.

6.5. Data Analysis

Data was exported from Microsoft Excel 2010 to IBM SPSS version 25 for final analysis. Frequencies

were run on the demographic characteristics of respondents as well as responses per market. Frequencies were presented in a table and pie chart. A picture gallery representing the various indigenous foods gathered from all the markets surveyed was developed with their description.

7.0. Results

7.1. Respondents Interviewed

Markets form the main centre for trading food products. Thus, it was appropriate to fetch information from these sellers who visit the various markets of the Northern Region. From the data collected from 170 respondents at the various study markets, most respondents (n=51) were in the Aboabo market followed by the Tamale Central market (n=49) and the Lamashegu market (n=41). The least number of respondents were from the Savelugu market (n=29).

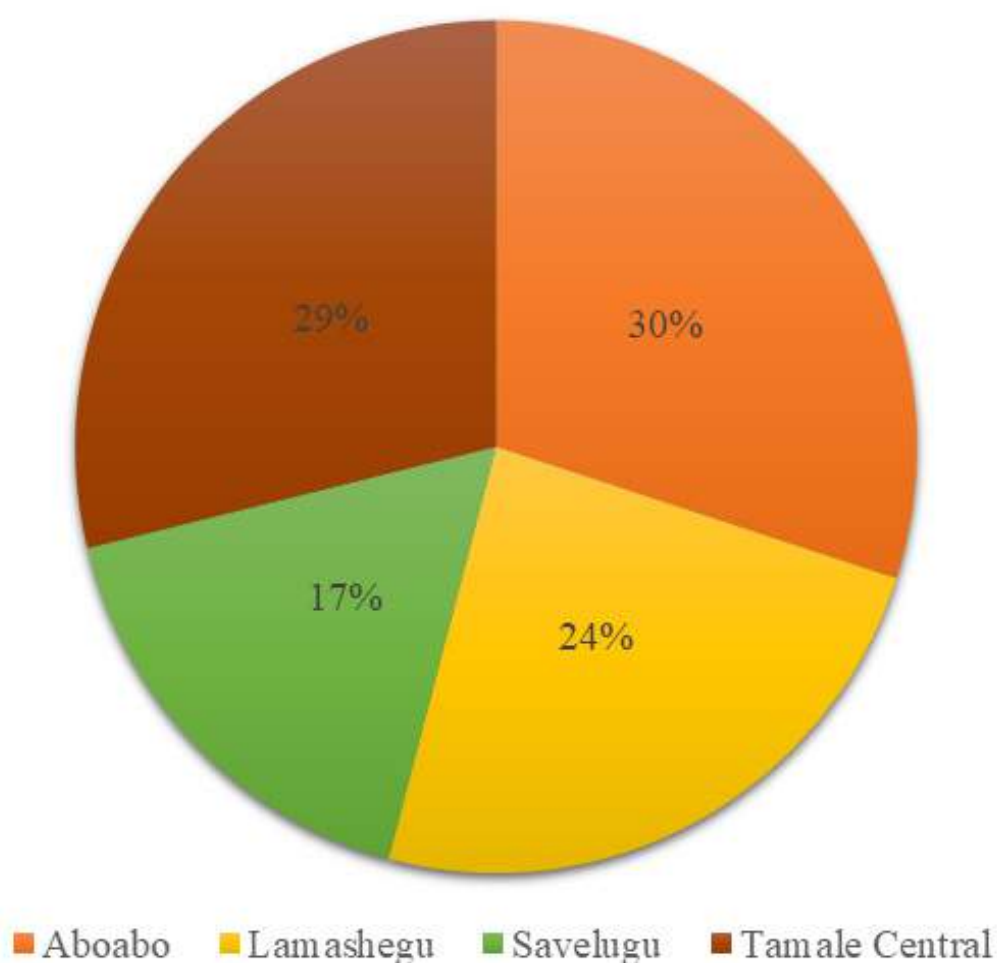


Figure 3: Number of respondents interviewed

7.2. DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS



Table 4: Gender Distribution of Respondents

From the survey conducted, 97% of the respondents were female while the remaining 3% were males. Also, most of the respondents were Dagombas representing 87% compared while the minority of them were either Dagaati, Ewe, Frafra, Ga-Adangme, or Nanumba.

Table 1: Demographic characteristics of the respondents (n=170)

Demographic characteristics	Frequency
Gender	
Female	165
Male	5
Ethnicity	
Ashanti	2
Dagaati	1
Dagomba	148
Ewe	1
Fante	4
Frafra	1
Fulani	4
Ga-Adangme	1
Kotokoli	4
Nanumba	1
Wala	3



7.3. INDIGENOUS FOODS IN NORTHERN REGION

Generally, 131 food items were collected at the time of the study. The majority of the food items were indigenous ingredients (62%) followed by dishes (28%) and drinks which represent 10%. About 10% of the food items have been abandoned.



Figure 4: *ingredients, dishes, and drinks*



7.3.1 INDIGENOUS INGREDIENTS

The picture gallery below shows a list of some of the ingredients identified (Pages 22-32). About 81 ingredients were found during the survey. Ingredients ranged from vegetables to fruits to starchy roots. Ingredients were sometimes used in their fresh state or processed formed in meal preparation.

Three abandoned ingredients were found as well. The remaining ingredients without pictures are placed on a table (Table 2). Similarly abandoned ingredients are shown in a table (Table 3).



Name: Nanzu kuma or gona
Common name: Dried pepper
Sensory characteristics: Long and red
Usage: Condiment
Seasonality: All year round



Name: Nanzu maha
Common name: Fresh pepper
Sensory characteristics: Round and red
Usage: Condiment
Seasonality: Rainy season



Name: Salinvovu (Ayoyo leaves)
Common name: Jute leaves
Sensory characteristics: Green
Usage: Soup
Seasonality: All year round



Name: Nyaadua
Common name: Garden eggs
Sensory characteristics: Round and white
Usage: Soup and stew
Seasonality: All year round



Name: Nanzua zim
Common name: Powdered pepper
Sensory characteristics: Red and powdery
Usage: Condiment



Name: Local garlic
Sensory characteristics: Round, red, white, or brown and smooth
Usage: Stew and soup
Seasonality: Rainy season



Name: Bungu or Nanzu kpila
Common name: Pepper seeds
Sensory characteristics: Flat and round
Usage: Stew
Seasonality: All year round



Name: Kaakaaduro
Common name: Ginger
Sensory characteristics: Brown
Usage: Condiment
Seasonality: All year round



Name: Mana mahili
Common name: Fresh okro
Sensory characteristics: Green
Usage: Soup and stew
Seasonality: All year round



Name: Bra
Common name: Kenaf
Sensory characteristics: Green and bitter
Usage: Soup
Seasonality: All year round



Name: Mana kuuni
Common name: Dry okro
Sensory characteristics: Rod-shaped
Usage: Soup and stew
Other use: Ethnic medicine



Name: Cabbage
Sensory characteristics: Bulb, rough and green
Usage: Stew
Seasonality: Rainy season



Name: Mana kuma zim
Common name: Dry okro powder
Sensory characteristics: Black & powdery
Usage: Soup and stew
Seasonality: All year round



Name: Aleefu
Common name: Amaranth leaves
Sensory characteristics: Green and bitter
Usage: Soup
Seasonality: All year round



Name: Yaa3i
Common name: Suya Condiment
Sensory characteristics: Smooth & brown
Usage: Condiment
Ingredients: Soybean, pepper & groundnut



Name: Alibalsa
Common name: Onion
Sensory Characteristics: Round and smooth
Usage: Stew and soup
Seasonality: All year round



Name: Carrot

Sensory characteristics: Conical & orange in colour

Usage: Stew

Seasonality: Rainy season



Name: Kontomire

Common name: Taro leaves

Sensory characteristics: Green

Usage: Stew and soup

Seasonality: Raining season



Name: Cucumber

Sensory characteristics: Rod-shaped, smooth & green

Usage: Stew

Seasonality: Rainy season



Name: Kwansusua

Common name: Turkey berries

Sensory characteristics: Round, smooth and green

Usage: Soup, stew

Seasonality: All year round



Name: Kuuka vari maha

Common name: Fresh baobab leaves

Sensory characteristics: Leafy, green, and bitter

Usage: Soup

Seasonality: Rainy season



Name: Alibalsa vari

Common name: Spring onions

Sensory characteristics: Long, green, and smooth

Usage: Stew

Seasonality: All year round



Name: Kuuka vari kuma

Common name: Dry baobab leaves

Sensory characteristics: Green and bitter

Usage: Soup and stew

Seasonality: Rainy season



Name: Ab3

Common name: Palm fruit

Sensory characteristics: Red and smooth

Usage: Soup

Seasonality: All year round



Name: Kuuka Powder
Common name: Baobab leaves powder
Sensory characteristics: Powdery, smooth, green, and bitter.
Usage: Soup.
Seasonality: All year round



Name: Mongu
Common name: Mango
Sensory characteristics: Yellow or green, smooth and sweet
Usage: Drink or consumed without processing
Seasonality: Rainy season



Name: Leemu nyaame
Common name: Lemon
Sensory characteristics: Round, green, or yellow and rough
Usage: Drink
Seasonality: All year round



Name: Dori
Common name: African Locust bean powder
Sensory characteristics: Yellow, smooth, sweet
Usage: Drink
Seasonality: All year round



Name: Puha
Common name: Tamarind
Sensory characteristics: Round, smooth, round and bitter
Usage: Drink or ethnic medicine
Seasonality: Harmattan season



Name: Sobolobo vari
Common name: Wild Hibiscus leaves
Sensory characteristics: Red
Usage: Drink or ethnic medicine
Seasonality: Rainy season



Name: Sinsaba
Common name: Lannea Acidica fruit
Sensory characteristics: Round, smooth, wine and sweet
Seasonality: Rainy season



Name: Mijingooro
Common name: Bitter kola
Sensory characteristics: Round, smooth, brown, and bitter
Usage: Ethnic medicine
Seasonality: All year round



Name: Nere
Common name: Muskmelon seeds
Sensory characteristics: Grain like, smooth and brown
Usage: Soup and stew
Seasonality: Rainy season



Name: Sima moli
Common name: Groundnut paste
Sensory characteristics: Paste and deep sunset colour
Usage: Soup
Seasonality: All year round



Name: Sima kaha
Common name: Dry groundnut
Sensory characteristics: Round, smooth and brown
Usage: Soups
Seasonality: Rainy season



Name: Sim kpila
Common name: Bambara beans
Sensory characteristics: Big, round and smooth. Brown colour
Usage: Boiled and consumed
Seasonality: All year round



Name: Aduwa
Common name: Pigeon pea
Sensory characteristics: Bean shape, smooth brown or white
Usage: Boiled and consumed
Seasonality: All year round



Name: Nag nimdi
Common name: Beef
Sensory characteristics: Red
Usage: Soup, stew, fried, or grilled



Name: Agushie, agushie or Akata (powdered)
Common name: Melon seeds
Sensory characteristics: Flat, smooth and white
Usage: Stew and soup
Seasonality: All year round



Name: Koobi
Common name: Salted tilapia
Sensory characteristic: White
Usage: Stew



Name: Zin sabinli or Adwene
Common name: Mad fish
Sensory characteristics: Dark brown
Usage: Soup, stew.



Name: Amane or yura yura
Common name: Dry Herrings
Sensory characteristic: Brown
Usage: Stew



Name: Bua nimdi (chevon)
Usage: Stew and soup
Sensory characteristics: Brown



Name: Dabgani shinkaafa zee
Common name: Brown rice
Sensory characteristics: Brown
Usage: Boiled and consumed
Seasonality: Rainy season



Name: Kariwana pielli
Common name: White maize
Sensory characteristics: White
Usage: Porridge and other accompaniment
Seasonality: Rainy season



Name: Dagban Shinkaafa pielli
Common name: Dagomba local rice
Sensory characteristics: White
Usage: Boiled and consumed
Seasonality: Dry season



Name: Kapielli
Common name: Kodo millet
Sensory characteristics: Round, smooth and white
Usage: Porridge
Seasonality: All year round



Name: Za
Common name: Millet
Sensory characteristics: Round, smooth and grey
Usage: Porridge
Seasonality: Rainy season



Name: Soybeans

Sensory characteristics: Round, smooth and brown

Usage: Khebab, drink, and infant food

Seasonality: All year round



Name: Zimbieyu

Common name: Cereal blend (Winiemix)

Usage: Porridge

Ingredients: Wheat, maize, soybean, and groundnut



Name: Dagban Shinkaafa

Common name: Dagomba local rice (different variety)

Sensory characteristics: White

Usage: Boiled and consumed

Seasonality: All year round



Name: Bankani

Common name: Cocoyam

Sensory characteristics: Round, rough and brown

Usage: Boiled or fried and consumed

Seasonality: Rainy season



Name: Kazagu

Common name: Red millet

Sensory characteristics: Round, smooth and red

Usage: Porridge and other accompaniment

Seasonality: All year round



Name: Jera or Banchi kuma

Common name: Dry cassava chips

Sensory characteristics: White and smooth

Usage: Milled into cassava flour

Seasonality: All year round



Name: Banchi zim

Common name: Cassava flour

Sensory characteristics: White and smooth

Usage: Accompaniment dish

Seasonality: All year round



Name: Karibo poyu

Common name: Pepper bark tree

Sensory characteristics: Brown

Usage: Condiment

Seasonality: All year round



Name: Nyuli
Common name: Yam
Sensory characteristics: Rod, brown and rough
Usage: Boiled, roasted, or fried and consumed
Seasonality: All year round



Name: Prekese
Common name: Aidan fruit
Sensory characteristics: Rod shape, smooth, brown, and sweet
Usage: Condiment and ethnic medicine
Seasonality: Harmattan season



Name: Monsi
Common name: Sorghum leaves
Sensory characteristics: Brown, dry long, and hard leaves.
Usage: Condiment (adds color to food)
Seasonality: All year round



Name: Chimba
Common name: Grains of Selim
Sensory characteristics: Rod-shaped, black and spicy
Usage: Condiment and ethnic medicine
Seasonality: Harmattan season



Name: Baasa
Common name: African nutmeg
Sensory characteristics: Round, smooth, brown, and sour
Usage: Condiment and ethnic medicine
Seasonality: All year round



Name: Kanaaferi
Common name: Cloves
Sensory characteristics: Nail-like and brown
Usage: condiment and ethnic medicine
Seasonality: All year round



Name: Kpalgu (Dawadawa)
Common name: African locust bean seed
Sensory characteristics: Round, smooth, black
Usage: condiment and ethnic medicine
Seasonality: All year round



Name: Kanton
No common name
Sensory characteristics: Round, smooth and black
Usage: Condiment and ethnic medicine
Seasonality: All year round



Name: Moora

Sensory characteristics: Round and red

Usage: Condiments and preservative

Seasonality: All year round



Name: Bagaruwa

Common name: Acacia

Sensory characteristics: Round, smooth, brown, and spicy

Usage: Condiment and ethnic medicine

Seasonality: Rainy season



Name: Kpakahili

Common name: Shea butter

Sensory characteristics: White and smooth

Usage: Stew

Seasonality: All year round



Name: Manza

Common name: Palm oil

Sensory characteristics: Red

Usage: Stew and soup

Seasonality: All year round

Table 2: Other Indigenous Ingredients

Name	Common name	Sensory Characteristics	Usage	Seasonality
Musuulo	Black pepper	Round, smooth, black and hot, and spicy	Stew and soup	Rainy season
Zun kuyi	None	Round and flat, smooth, black bitter	Stew and soup	All year round
Kariwana zim	Maize flour	Smooth and white	Accompaniment dish	Harmattan season
Saamia	None	Flat and round, smooth, black and sour	Consumed without processing	Harmattan season
Nanzua wagla	Thai pepper	Rod, smooth, red, hot	Stew, soup and Ghanaian black sauce	All year round
Sima	Fresh groundnut	Round, smooth, brown	Consumed as harvested and processed for soup	Rainy season
Monsi	Maize leaves	Brown and rough	Wrapper for steamed foods	Rainy season
Kpaŋ	Guinea fowl	Bright-orange brown	Stew, soup or grilled	All year round
Kariwana zee	Red maize	Red and smooth	Accompaniment dish	Rainy season
Chi	Sorghum	Round, red and smooth	Accompaniment dish	Rainy season

Table 3: Abandoned Indigenous Ingredients

Local Name	Common name	Reason for not usage	Sensory characteristics
Kazayu	Unknown	Change in consumption preference	Small round, smooth and red
Sanzi	Unknown	Stoppage of cultivation	Round and black
Gingag'ri	Thorny fruits from the wild	Stoppage of cultivation	Green



7.3.2. Indigenous dishes

Pictures of dishes identified are shown below (pages 34 – 38). The market survey discovered 28 indigenous dishes with most of them (57%) eaten as main dishes followed by accompaniment (36%). Also, most of the dishes

were prepared using boiling only as a method of cooking. However, the study discovered 9 indigenous dishes that have been abandoned due to modernization.



Name: Kuli Kuli
Common name: Groundnut cake
Sensory characteristics: Ring shapes, reddish-brown
Usage: Accompaniment, dessert, or snack
Ingredient: Groundnut, pepper, and ginger
Method of cooking: Frying



Name: Tuya
Sensory characteristics: Boiled cowpea
Usage: Main dish
Ingredient: Cowpea
Method of cooking: Boiling



Name: Wasawasa
Sensory characteristics: Black
Usage: Accompaniment
Ingredient: Yam flour and salt
Method of cooking: Steaming



Name: Sakoro
Common name: Pounded yam
Sensory characteristics: Bulky, soft
Usage: Accompaniment
Ingredients: Yam
Method of cooking: Boiling



Name: Shinkaafa
Common name: Boiled rice
Sensory characteristics: Yellowish-white, soft and salty
Usage: Accompaniment
Ingredients: Local rice
Method of cooking: Boiling



Name: Nyombeeka
Sensory characteristics: Green solid gritty
Bitter-sour
Usage: Main dish
Ingredients: Bean leaves, beans, saltpeter, pepper, groundnut oil, and onion
Method of cooking: Steaming



Name: Nyu Shera
Common name: Roasted yam
Sensory characteristics: Brown
Usage: Main dish or snack
Ingredients: Yam
Method of cooking: Roasting



Name: Tubaani
Common name: Steamed bean cake
Sensory characteristics: Soft, solid, sweet and brown
Usage: Main dish
Ingredients: Bambara beans, groundnut, and cassava
Method of cooking: Steaming



Name: Achomo
Common name: Fried rock buns
Sensory characteristics: Solid, rough surface
Usage: Main dish or snack
Ingredients: Wheat flour, baking soda, salt, and sugar
Method of cooking: Frying



Name: Fante Donkunu
Common name: Fante kenkey
Sensory characteristics: Yellow
Usage: Accompaniment
Ingredient: Maize
Method of cooking: Steaming



Name: Dokunu
Common name: Ga kenkey
Sensory characteristics: Round and white
Usage: Accompaniment
Ingredient: Maize and salt



Name: Kaafa
Common name: No common name
Sensory Characteristics: White, solid, and soft
Usage: Snack
Ingredients: Maize flour, sugar
Method of cooking: Boiling



Name: Aleefu pkam
Common name: Amaranth leaves stew
Sensory characteristics: Green
Usage: Main dish
Ingredients: Amaranth leaves, tomatoes, onion, pepper, salt, and palm oil
Method of cooking: Stewing



Name: Adua
Sensory characteristics: Boiled Pigeon pea
Usage: Main dish
Ingredient: Pigeon pea
Method of cooking: Boiling



Name: Yoro-yoro
Sensory characteristics: Cooked maize and beans
Usage: Main dish
Ingredients: Maize, Bambara beans, or pigeon pea
Method of cooking: Boiling



Name: Boffroto
Common name: Puff puff
Sensory characteristics: Soft and sweet
Usage: Snack
Ingredients: Margarine, baking soda, wheat flour, and groundnut oil
Method of cooking: Frying



Name: Waakye
Common name: Cooked rice and beans
Sensory characteristics: Brown
Usage: Main dish
Ingredients: Rice and beans
Method of cooking: Boiling



Name: Sooya
Common name: Soybean khebab
Sensory characteristics: Orange
Usage: Dessert or snack
Ingredients: Soybeans



Name: Maha
Common name: Sorghum-maize pancake
Sensory characteristics: Oval shape
Usage: Accompaniment or snack
Ingredients: Sorghum, maize
Method of cooking: Frying



Name: Koko
Common name: Porridge
Sensory characteristics: Liquid, sour without sugar
Usage: Accompaniment
Ingredients: Maize, red millet and pepper, ginger
Method of cooking: Boiling



Name: Koosé
Common name: Fried bean cake
Sensory characteristics: Spherical, gritty, and yellow
Usage: Main dish or dessert
Ingredients: Cowpea, oil, ginger, pepper and onion, salt
Method of cooking: Frying



Name: Sim'kpula
Common name: Boiled Bambara beans
Sensory characteristics: Brown
Usage: Main dish
Ingredients: Bambara beans and saltpeter
Method of cooking: Boiling

Table 4: Other Indigenous dishes

Local Name	Common name of the dish	Sensory characteristics	Usage	Ingredients	Method of cooking
Gablée	Boiled bean cake	Brown, soft, and sour-like	Main dish	Bambara beans	Boiling
Koko	Sorghum porridge	Liquid, sour without sugar	Main dish	Sorghum only	Boiling
Gorraa	No common name	Green	Main dish	Bean leaves, oil, pepper, and salt	Boiling
Alikama kulikuli	No common name	Solid ring form,	Accompaniment, dessert, or snack	Sugar, salt, baking powder, and wheat flour	Frying
Gbana	Cow skin stew	Red	Main dish	Onions, cow skin, pepper, tomatoes, bouillon cube, and vegetable oil	Stewing
Paasi zeero	Boiled rice and groundnut soup	White (rice) Brown, liquid (groundnut soup)	Accompaniment Main dish	Rice, salt, and groundnut oil Groundnut paste, pepper, bouillon cube, and fish.	Boiling

Table 5: Abandoned Indigenous dishes

Name of abandoned dish	Common Name	Sensory characteristics	Usage	Ingredients	Method of Cooking
Dakoli ka tiaha	Unknown	White starchy, form of Tuo-zaafi	Accompaniment	Maize	Boiling
Abuffutu	Unknown	White, starchy, and solid	Accompaniment	Cassava flour	Steaming
Chi Tuo-zaafi	Red millet Tuo zaafi	Red	Accompaniment	Red millet	Boiling
Dari nyina	None	Dari nyina	Accompaniment	Maize and cassava	Boiling
Yama	Maize flour stew	Thick liquid	Main dish	Dry fish, maize flour, dawadawa, and salt	Stewing
Bre-na'bindi	Unknown	Green	Main dish	Bra, Shea butter, salt	Boiling
Yaan-kpula	Unknown	Brown	Main dish	Cassava flour, maize flour, saltpetre, groundnut oil	
Karilli	Boiled maize	White	Accompaniment	Fresh maize, salt	Boiling
Gorra	Thorny tree leaves	Green, solid, sour	Main dish	Thorny tree leaves	Boiling



7.3.3. Indigenous drinks

The current research identified 13 local drinks. These indigenous drinks identified were consumed as snack dishes, appetizers, or both. The picture gallery below shows a list of drinks identified (Pages 40 - 43).



Name: Ice kaafa
Common name: Red millet drink
Sensory characteristics: Liquid, orange
Usage: Snack
Ingredients: Red millet and sugar
Method of processing: Fermentation and milling



Name: Light
Common name: No common name
Sensory characteristics: White
Usage: Snack
Ingredients: Fante kenkey and sugar
Liquid from filtered Thick



Name: Thick
Common name: Mashed kenkey
Sensory characteristics: White and sweet
Usage: Snack
Ingredients: Fante kenkey, sugar, and milk
Method of processing: Mashing



Name: Muongu drink
Common name: Mango drink
Sensory characteristics: Yellow and thick
Usage: Appetizer or snack
Ingredients: Mango and sugar
Method of processing: Blending



Name: Nansaya kom
Common name: Tiger nuts drink
Sensory characteristics: White
Usage: Snack
Ingredients: Tiger nuts
Method of processing: Blending



Name: Sobolo
Common name: Sorrel drink
Sensory characteristics: Red and sweet.
Usage: Snack
Ingredients: Wild hibiscus leaves, grains of Selim, ginger, cloves, sugar
Method of processing: Infusion or boiling



Name: Alaafe kom
Common name: Pineapple drink
Sensory characteristics: Yellow
Usage: Snack
Ingredients: Pineapple and sugar
Method of processing: Blending



Name: Zimkom
Common name: Millet drink
Sensory characteristics: White
Usage: Snack
Ingredients: Millet and sugar
Method of processing: Fermentation



Name: Emejo or Asana
Common name: Caramelized maize drink
Sensory characteristic: Dark brown and sweet
Usage: Snack
Ingredients: Maize and melted sugar
Method of processing: Fermentation and boiling



Name: Burkina
Sensory characteristics: White
Usage: Dessert or snack
Ingredients: Fresh cow milk and cooked millet
Method of processing: Fermentation



Name: Puha
Common name: Tamarind drink
Sensory characteristics: Brown and peppery
Usage: Appetizer or snack
Ingredients: Tamarind, ginger, and sugar
Method of processing: Fermentation

Table 6: Other Indigenous drinks

Name	Common Name	Sensory characteristics	Usage	Main Ingredients	Method of processing
Fuula mini bihim	Millet smoothie	White, sweet	Snack	Millet, fresh cow milk	Mashing
Kajegu	Fermented red millet drink	Red and sweet	Appetizer	Red millet	Boiling and fermentation

8.0. Discussion

The Northern Food Index research was conducted to meet the demand for a database of indigenous foods in the Northern Region. This was needed to explore how they can be of great benefit in the field of nutrition and food innovation.

More women than men participated in the study. This may be that women are mostly found to be cooking household meals and may have more knowledge on the preparation and serving of the indigenous food items identified. This is therefore an area of enlightenment to empower these women in terms of knowledge and financial support to always make these indigenous foods available for sale. Also, the Dagomba ethnic group formed most of the study respondents compared to other ethnic groups. This is quite not surprising though, are one of the main custodians of the region, and the others migrated from other places to settle in the region.

There is a rise in the preference for quality diet by consumers due to lifestyle changes and health awareness. However, food insecurity, malnutrition, and poverty are also high in Northern Region. The variety of products identified in this current research, therefore, proves that there is enough diversity in indigenous diets which may help improve nutritional status. Besides their nutritional value, the database creates the opportunity to develop new recipes for consumption and commercialization. This research is useful as a first step in having a high-quality database of foods consumed in a region. Additionally, it is useful for purposes such as research, public health/education, new food product development, food industry planning, as well as monitoring and surveillance of nutrition among the population [9].

Another discovery made was that most of the drinks and dishes identified were prepared from

cereals, legumes, and nuts. This may be attributed to the fact that these products are farmed in the region and form most of their staples. This serves as an awakening call for food investors to look into investing in these products for recipe development and commercialization.

Another area of concern is the abandonment of some of the food items identified. The reason for abandonment could be due to low quality, loss in competitiveness to foreign foods, and or dietary changes among dwellers of the Northern Region. These food items may be nutritious foods that contain important nutrients for health and wealth. This implies that there is a likelihood of abandonment of even the available indigenous foods if conscious efforts are not put in place to sustain them amidst the influx of competitive foreign ones. Nevertheless, as this research has identified these abandoned food items, it shows there is a point of reference for innovators or even dwellers to learn and appreciate indigenous foods other than foreign ones.

The availability of foods in the Northern Region varies depending on the season of the geographical area. Thus, our study is limited to the time of data collection since other food items may be missed out because they were not in season at the time of data collection. Possibly, some food items may be missed out since the research focused on markets in the region other than adding households where some unsold foods may be prepared.

Generally, this information will be useful in preserving indigenous food knowledge and raising awareness of the diversity of foods in the region. It will also serve as a starting point for more enumeration of indigenous foods in Ghana as a whole.



9.0. Conclusion and future direction

This study provides a potential effort for creating a knowledge-based document for foods in Northern Region which will have several advantages in the Ghanaian diet. The Northern Food Index will have several advantages including a formal document serving as a reference point for food product development and commercialization, reviving of interest in indigenous foods, and a starting point for the development of a national database. Our study supports the need for the implementation of a national food index as well as a food composition table for reference.

This study will, however, enable innovators to develop an interest in adding value to these foods to enhance their intake. It will also help research scientists to develop nutrition profiles that will be a stepping stone in appreciating these foods in terms of health and nutrition.

The Northern Food Index will serve as a starting point for other collections and probably contribute to the development of other recipes and food composition tables for Ghana.

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