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Ultra-Processed Indigenous Foods in West Africa: Nutritional Transition, Cultural Erosion, and the Emerging Public Health Crisis

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Abstract

The rapid transformation of food systems in West Africa has intensified the consumption of ultra-processed indigenous foods, generating significant concerns regarding nutrition, public health, and cultural sustainability. This study critically examined the emergence of ultra-processed indigenous foods within West African societies and evaluated their implications for dietary quality, agro-processing practices, and indigenous food systems. A qualitative systematic review design was adopted using secondary data obtained from peer-reviewed journal articles, institutional reports, and multidisciplinary academic literature focusing on nutrition transition, food processing, and African food systems. Thematic content analysis was employed to synthesise evidence across selected studies. The findings revealed that urbanisation, globalisation, commercial agro-processing, changing consumer lifestyles, and aggressive food marketing significantly drive the increasing consumption of ultra-processed indigenous foods across the region. The review further established strong associations between processed food consumption and rising prevalence of obesity, hypertension, type 2 diabetes, cardiovascular diseases, and the double burden of malnutrition. In addition, industrialisation of indigenous foods contributes to declining traditional cooking practices, weakening cultural food identity, and erosion of indigenous culinary knowledge systems. The study concludes that although agro-processing offers economic and food security benefits, excessive industrialisation of indigenous foods may undermine nutritional integrity and cultural sustainability. Sustainable, nutrition-sensitive, and culturally responsive agro-processing strategies are therefore essential for the future of West African food systems.

Keywords: Ultra-processed foods; Nutrition transition; Indigenous food systems; West Africa

Introduction

The contemporary food landscape in West Africa is undergoing a profound transformation driven by urbanisation, globalisation, industrialisation, changing lifestyles, and the rapid expansion of agro-processing industries. Traditional dietary systems that once centred on minimally processed indigenous foods such as millet, sorghum, cassava, yam, maize, legumes, fermented cereals, vegetables, and locally sourced proteins are increasingly being replaced by commercially processed and ultra-processed food products (UPFs) marketed as convenient, affordable, modern, and aspirational (Baker et al., 2020; Reardon et al., 2021). This nutritional transition has generated significant academic and public health concern due to its implications for dietary quality, cultural food identity, and the growing burden of non-communicable diseases (NCDs) across the region. Historically, indigenous West African diets were nutritionally diverse and largely based on traditional food systems characterised by fresh ingredients, communal preparation practices, and low levels of industrial modification. Foods such as ogi, gari, fufu, kenkey, millet porridge, fermented locust beans, and traditional soups represented not only nutritional sustenance but also cultural heritage and indigenous knowledge systems passed across generations (Chukwu & Dogbe, 2023). Traditional processing methods including fermentation, drying, roasting, smoking, and milling were primarily developed to improve shelf life, digestibility, flavour, and food safety while maintaining the nutritional integrity of local foods (Aworh, 2008). However, the increasing industrialisation of food production in West Africa has altered both the composition and consumption patterns of indigenous foods.

The rise of ultra-processed indigenous foods represents one of the most controversial dimensions of the evolving African food system. Ultra-processed foods are defined as industrial formulations manufactured largely from extracted substances, refined ingredients, additives, preservatives, flavour enhancers, sweeteners, and industrial processing techniques that substantially modify the original food matrix (Monteiro et al., 2019). Although UPFs have traditionally been associated with Western dietary patterns, recent evidence demonstrates that many indigenous African foods are now being reformulated into highly processed commercial products through aggressive agro-processing innovations (Jideani et al., 2022). Instant yam flour, packaged jollof rice mixes, sweetened millet beverages, industrially flavoured ogi, processed gari variants, and ready-to-eat cassava products increasingly dominate urban food markets across countries such as Nigeria, Ghana, Senegal, and Côte d'Ivoire. This transformation has been accelerated by rapid urbanisation and demographic change. West Africa currently experiences one of the fastest urban growth rates globally, resulting in changing household structures, reduced time available for traditional cooking, and increased dependence on convenience foods (Holdsworth & Landais, 2019). Urban consumers increasingly prioritise affordability, portability, long shelf life, and rapid preparation over traditional culinary practices. Consequently, food corporations and agro-processing industries have expanded aggressively into local food markets by repackaging indigenous foods into commercially attractive processed products. Reardon et al. (2021) describe this phenomenon as the "processed food revolution" within African food systems, where processed foods now occupy a growing proportion of household dietary intake.

Despite the economic and technological benefits associated with agro-processing, growing concerns exist regarding the nutritional consequences of these dietary changes. Evidence from global nutrition research consistently associates high consumption of ultra-processed foods with obesity, hypertension, cardiovascular diseases, type 2 diabetes, metabolic disorders, and micronutrient deficiencies (Baker et al., 2020; Popkin et al., 2020). Sub-Saharan Africa is increasingly experiencing a double burden of malnutrition characterised by the coexistence of undernutrition and rising obesity rates within the same populations (Vorster et al., 2011). While many rural communities continue to struggle with food insecurity and micronutrient deficiencies, urban populations increasingly experience excessive intake of refined carbohydrates, sodium, sugar, unhealthy fats, and calorie-dense processed foods. The public health implications of this transition are particularly alarming in West Africa where healthcare systems already face substantial infrastructural and financial challenges. According to Steyn and Mchiza (2014), changing dietary patterns in Africa are contributing significantly to the rising prevalence of obesity and diet-related NCDs. Furthermore, many commercially processed indigenous foods contain high levels of sodium, artificial flavourings, sweeteners, and preservatives that may compromise nutritional quality despite being marketed as culturally familiar or nutritionally beneficial. The aggressive marketing of such products often exploits consumer trust in indigenous foods while masking the negative health implications associated with industrial reformulation.

Beyond nutritional concerns, the increasing industrialisation of indigenous foods raises important questions regarding cultural erosion and food sovereignty. Traditional African food systems historically embodied social identity, communal values, ecological sustainability, and indigenous knowledge transmission. The simplification and commodification of traditional foods through industrial agro-processing may gradually disconnect younger generations from indigenous culinary traditions and food preparation practices (Chukwu & Dogbe, 2023). In many urban settings, traditional cooking methods are increasingly perceived as outdated, labour-intensive, or incompatible with modern lifestyles. Consequently, cultural authenticity may be sacrificed in favour of convenience-oriented food systems shaped largely by corporate and global market interests. The controversy surrounding ultra-processed indigenous foods therefore extends beyond nutrition into broader debates concerning modernisation, development, and the future of African food systems. Proponents of agro-processing argue that industrial food innovations improve food accessibility, reduce post-harvest losses, create employment opportunities, enhance food security, and stimulate economic growth (Aworh, 2008). Improved packaging technologies, fortification initiatives, and commercial processing may also contribute positively to food preservation and micronutrient supplementation. However, critics contend that excessive industrialisation promotes dietary homogenisation, dependency on corporate food systems, and declining dietary diversity while increasing exposure to unhealthy dietary components (Baker et al., 2020).

The political economy of food further complicates this debate. The expansion of multinational food corporations, supermarkets, and commercial agro-processing industries has significantly reshaped African food environments (Masters et al., 2022).

Aggressive advertising strategies, changing retail systems, and imported processing technologies increasingly influence consumer preferences and dietary aspirations. This transformation often privileges highly profitable processed products over nutritionally superior indigenous alternatives. As a result, the nutritional transition occurring in West Africa may reflect not merely individual dietary choices but also structural economic and political changes within global food systems. Scholarly attention to this issue remains relatively limited despite its growing significance. Existing studies largely focus on general nutrition transition trends or food security challenges without critically examining how indigenous foods themselves are becoming ultra-processed within modern agro-processing systems. Furthermore, limited research has explored the intersection between food industrialisation, cultural identity, public health, and indigenous knowledge systems in West Africa. This gap highlights the urgent need for interdisciplinary inquiry into the nutritional and sociocultural implications of ultra-processed indigenous foods.

Against this background, the present study critically examines the emergence of ultra-processed indigenous foods in West Africa and their implications for nutritional health, cultural identity, and agro-processing practices. Specifically, the study explores how industrial food processing alters the nutritional composition of traditional foods, contributes to the ongoing nutrition transition, and reshapes indigenous dietary systems. The study also investigates the broader public health implications associated with increasing consumption of commercially processed indigenous foods and evaluates whether contemporary agro-processing practices align with sustainable nutrition and cultural preservation objectives. The significance of this study lies in its contribution to ongoing debates concerning food systems transformation in Africa. By integrating perspectives from food science, nutrition, public health, agro-processing, and cultural studies, the paper provides a comprehensive understanding of one of the most pressing contemporary food challenges facing West Africa. Ultimately, the study seeks to contribute to policy discussions regarding sustainable agro-processing strategies capable of balancing technological innovation, economic development, nutritional integrity, and cultural preservation within African food systems.

Literature Review

Conceptualising Ultra-Processed Foods and the Nutrition Transition

The concept of ultra-processed foods (UPFs) has gained significant attention within global nutrition discourse due to its association with deteriorating dietary quality and the rising prevalence of non-communicable diseases. Monteiro et al. (2019) define ultra-processed foods as industrial formulations manufactured primarily from refined ingredients, food derivatives, additives, flavour enhancers, preservatives, sweeteners, emulsifiers, and substances extracted from whole foods. Unlike minimally processed foods, UPFs undergo extensive industrial modification that fundamentally alters the natural food matrix and nutritional composition. These products are typically designed for convenience, hyper-palatability, long shelf life, and commercial profitability rather than nutritional adequacy.

The NOVA food classification framework developed by Monteiro and colleagues categorises foods according to the degree and purpose of processing. Within this framework, minimally processed foods include fresh or naturally preserved foods, while ultra-processed foods represent heavily industrialised products with limited resemblance to original food sources (Monteiro et al., 2019). Although the UPF concept emerged largely from studies in high-income Western countries, recent scholarship increasingly recognises the expansion of ultra-processed food systems across low- and middle-income countries, including those in Sub-Saharan Africa. The emergence of ultra-processed indigenous foods in West Africa reflects broader global patterns associated with the nutrition transition. Popkin (2017) conceptualises the nutrition transition as a shift from traditional diets rich in grains, fibre, vegetables, and locally sourced foods toward diets characterised by refined sugars, fats, processed foods, and animal products. This transition is strongly associated with urbanisation, economic development, industrialisation, and globalisation. In many developing countries, dietary patterns have rapidly evolved from subsistence-oriented food systems to market-driven consumption patterns shaped by multinational corporations and commercial food industries.

In Africa, the nutrition transition has generated a double burden of malnutrition involving the simultaneous presence of undernutrition, micronutrient deficiencies, obesity, and diet-related chronic diseases (Popkin et al., 2020). Historically, malnutrition discourse within Africa focused predominantly on hunger, protein-energy malnutrition, and infectious diseases. However, contemporary evidence indicates that obesity, hypertension, diabetes, and cardiovascular diseases are increasing rapidly across urban and semi-urban populations (Steyn & Mchiza, 2014). These developments have redirected scholarly attention toward changing dietary systems and the growing influence of processed foods.

Baker et al. (2020) argue that the global expansion of ultra-processed foods is driven by structural transformations within food systems, including trade liberalisation, industrial agriculture, supermarket expansion, aggressive food marketing, and changing labour patterns. These dynamics are increasingly evident within African contexts where food environments are becoming progressively commercialised. Processed food products are now widely available through supermarkets, street vendors, convenience stores, and informal retail networks, creating unprecedented dietary exposure to industrial food formulations.

The nutrition transition in West Africa is particularly significant because it intersects with indigenous food systems that historically emphasised minimally processed foods and communal preparation methods. Traditional diets in countries such as Nigeria, Ghana, Senegal, and Benin were previously dominated by indigenous staples including millet, sorghum, yam, cassava, legumes, vegetables, and fermented foods. These dietary systems provided relatively balanced nutrient profiles and were deeply embedded within local cultures and ecological systems (Chukwu & Dogbe, 2023). However, increasing urbanisation and economic modernisation have accelerated the integration of processed foods into everyday consumption patterns.

Indigenous Food Systems and Traditional Processing Practices in West Africa

Indigenous food systems in West Africa have historically played central roles in food security, nutritional health, cultural identity, and local economies. These systems encompass not only food production and consumption but also indigenous knowledge regarding cultivation, preservation, preparation, and communal eating practices. Traditional West African diets are highly diverse and regionally adaptive, reflecting ecological conditions, agricultural traditions, and sociocultural values.

Aworh (2008) explains that traditional food processing technologies in West Africa emerged primarily as adaptive responses to climatic variability, seasonal food shortages, and post-harvest preservation challenges. Indigenous processing methods such as fermentation, roasting, sun drying, smoking, pounding, soaking, milling, and germination enhanced food safety, digestibility, storage stability, and sensory qualities. Importantly, these methods were largely based on low-intensity processing techniques that preserved substantial nutritional value.

Fermented foods occupy particularly important positions within indigenous West African dietary systems. Products such as ogi, kenkey, burukutu, iru, dawadawa, and fermented cassava products provide beneficial microorganisms, improved digestibility, enhanced micronutrient bioavailability, and distinctive sensory properties. Fermentation also reduces antinutritional factors and contributes positively to gut health. Traditional fermentation practices therefore served both nutritional and functional purposes within indigenous food cultures.

Similarly, indigenous grains such as millet and sorghum historically formed the foundation of nutritionally balanced diets across many West African communities. These grains are rich in fibre, minerals, antioxidants, and slow-digesting carbohydrates. Legumes, leafy vegetables, palm fruits, nuts, and indigenous spices further contributed to dietary diversity and micronutrient adequacy. Traditional soups and stews prepared with local vegetables and plant proteins also supported balanced nutrient intake.

Beyond nutrition, indigenous food systems represented important mechanisms for preserving cultural identity and social cohesion. Food preparation was often communal and intergenerational, enabling the transmission of culinary knowledge, social values, and cultural traditions. Meals served symbolic functions during ceremonies, festivals, marriages, and communal gatherings. Consequently, indigenous foods embodied cultural heritage as much as nutritional sustenance (Chukwu & Dogbe, 2023).

However, modern agro-processing systems increasingly alter the structure and meaning of indigenous foods. Traditional foods that were once minimally processed are now reformulated into commercially packaged products containing additives, stabilisers, artificial flavourings, sweeteners, and preservatives. According to Jideani et al. (2022), many African indigenous foods now fall within higher levels of food

processing classification due to industrial modification practices. This transition represents a significant departure from traditional food preparation systems.

Industrialisation of Indigenous Foods and Agro-Processing Transformation

Agro-processing has become a major component of economic development strategies across West Africa. Governments and development agencies increasingly promote food processing industries as mechanisms for reducing post-harvest losses, improving food security, generating employment, increasing export opportunities, and stimulating industrial growth. As a result, indigenous foods are increasingly incorporated into formal commercial food systems.

Reardon et al. (2021) describe this phenomenon as the "processed food revolution" occurring across African food systems. The authors argue that food processing industries are expanding rapidly in response to urbanisation, rising incomes, female labour participation, population growth, and changing consumer preferences. Importantly, this transformation is not limited to imported Western foods but increasingly involves the commercialisation of indigenous African food products.

In Nigeria and other West African countries, traditional staples such as cassava, yam, millet, maize, and rice are increasingly processed into instant or ready-to-eat products. Instant fufu flour, packaged gari, flavoured cereal drinks, industrially processed bean flour, and ready-made soups exemplify this transformation. Although these innovations increase convenience and market accessibility, they often involve nutritional modifications associated with ultra-processing.

Industrial processing frequently alters fibre content, glycaemic properties, micronutrient composition, sodium levels, and caloric density. Refining processes remove beneficial food components such as bran, fibre, and naturally occurring phytochemicals while increasing dependence on synthetic additives and flavour enhancers. Furthermore, many commercially processed foods contain elevated levels of sugar, sodium, and unhealthy fats to improve palatability and consumer appeal (Baker et al., 2020).

The commercialisation of indigenous foods also reflects broader political and economic changes within African food systems. Masters et al. (2022) argue that food system transformation is increasingly shaped by market liberalisation, global investment, supermarket expansion, and multinational food corporations. Consequently, indigenous foods are often reformulated according to commercial profitability rather than nutritional optimisation.

Food marketing strategies further reinforce this transformation. Processed indigenous foods are commonly marketed as symbols of modernity, convenience, urban sophistication, and upward social mobility. Packaging technologies, advertising campaigns, and celebrity endorsements contribute to changing consumer perceptions regarding traditional foods. In many urban settings, industrially packaged products are perceived as safer, cleaner, and more prestigious than traditionally prepared foods.

However, critics argue that this commercial transformation may contribute to dietary homogenisation and cultural disconnection. Traditional preparation techniques requiring time, communal labour, and culinary knowledge are increasingly replaced by simplified industrial products. Younger generations may therefore lose familiarity with indigenous food preparation practices and traditional dietary systems.

Public Health Implications of Ultra-Processed Indigenous Foods

The increasing consumption of ultra-processed foods has significant implications for public health within West Africa. Numerous global studies associate UPF consumption with obesity, metabolic disorders, hypertension, cardiovascular diseases, diabetes, and certain cancers. Although most evidence originates from high-income countries, emerging African research suggests similar health risks within developing contexts.

Popkin et al. (2020) note that the double burden of malnutrition is intensifying across low- and middle-income countries due to simultaneous exposure to undernutrition and energy-dense processed foods. In West Africa, rapid urbanisation has contributed to sedentary lifestyles, changing dietary habits, and increased intake of commercially processed foods. Consequently, obesity and chronic diseases are rising even among populations that continue to experience food insecurity.

Steyn and Mchiza (2014) report that obesity rates in Sub-Saharan Africa have increased substantially over recent decades, particularly among urban women and middle-income populations. Dietary shifts toward processed foods high in refined carbohydrates, sodium, saturated fats, and sugars constitute major contributing factors. The replacement of fibre-rich indigenous foods with refined commercial alternatives may further exacerbate metabolic risks.

Ultra-processed indigenous foods present unique concerns because consumers may perceive them as nutritionally beneficial due to their cultural familiarity. Packaged cassava products, flavoured cereal drinks, instant soups, and sweetened traditional beverages often retain indigenous branding while containing nutritionally problematic additives. This creates potential misconceptions regarding their healthfulness.

High sodium intake represents another major concern. Industrial food processing frequently relies on sodium-based preservatives and flavour enhancers to improve taste and shelf life. Excessive sodium consumption is strongly associated with hypertension and cardiovascular diseases, both of which are increasing across African populations. Similarly, the growing incorporation of refined sugars into processed beverages and snack foods contributes to obesity and diabetes risks.

Micronutrient dilution also occurs during extensive food refinement processes. Traditional grains and legumes naturally rich in vitamins, minerals, antioxidants, and fibre may lose significant nutritional value during industrial processing. Although some manufacturers implement fortification strategies, critics argue that fortification cannot fully compensate for the loss of natural food complexity and dietary diversity.

Children and adolescents may be particularly vulnerable to the health impacts of ultra-processed foods. Aggressive marketing of sweetened beverages, flavoured cereals, processed snacks, and convenience foods increasingly targets younger consumers. Early dietary exposure to highly processed foods may shape lifelong eating habits and increase future disease risks.

Urbanisation, Food Environments, and Consumer Behaviour

Urbanisation plays a central role in transforming food systems and dietary behaviours within West Africa. Holdsworth and Landais (2019) argue that African urban food environments are increasingly characterised by rapid expansion of supermarkets, informal food vendors, fast-food outlets, and processed food distribution networks. These changing food environments significantly influence consumer choices and dietary patterns.

Urban lifestyles often involve long working hours, transportation challenges, and limited time available for traditional cooking. Consequently, consumers increasingly prioritise convenience, affordability, portability, and rapid meal preparation. Processed indigenous foods therefore emerge as attractive alternatives to labour-intensive traditional meals.

Women's participation in formal employment also contributes to dietary transformation. Traditionally, women performed substantial roles in food preparation and household cooking. However, increasing labour participation reduces available time for traditional culinary practices, increasing dependence on commercially prepared foods. Food industries strategically respond to these changes by promoting instant and ready-to-cook indigenous food products.

Socioeconomic aspirations further shape consumer behaviour. In many African urban settings, packaged foods symbolise modernity, status, and economic progress. Imported foods and industrially processed products are often perceived as superior to locally prepared traditional meals. This perception may undermine appreciation for indigenous food cultures and encourage dietary westernisation.

Advertising and media exposure reinforce these consumption patterns. Food corporations increasingly utilise television, social media, celebrity endorsements, and digital marketing to influence consumer preferences. Processed foods are frequently associated with convenience, success, hygiene, and modern lifestyles. Such narratives may gradually reshape cultural perceptions regarding traditional diets.

Nevertheless, consumer attitudes toward processed indigenous foods remain complex. Some consumers value convenience while simultaneously expressing concerns regarding food authenticity, nutritional quality, and artificial additives. Others continue to prefer traditional foods for cultural, sensory, and perceived health reasons. This tension reflects broader debates regarding modernisation and cultural preservation within African societies.

Cultural Erosion and Indigenous Knowledge Systems

The industrialisation of indigenous foods raises critical questions regarding cultural sustainability and indigenous knowledge preservation. Food systems are deeply intertwined with cultural identity, spirituality, social organisation, and historical memory. Consequently, dietary transformation may produce significant sociocultural consequences beyond nutritional change.

Chukwu and Dogbe (2023) argue that the nutrition transition occurring in Nigeria involves not only changing diets but also declining valuation of indigenous food knowledge systems. Younger generations increasingly adopt westernised eating habits while traditional foods are either abandoned or transformed into commercial commodities disconnected from their original cultural contexts. Traditional cooking practices historically involved communal participation and intergenerational learning. Grandmothers, mothers, and elders transmitted culinary knowledge through observation, storytelling, and participation. Industrial food systems reduce the need for such knowledge by simplifying preparation processes into instant or packaged formats. As a result, indigenous culinary knowledge may gradually disappear.

Furthermore, traditional diets were often environmentally sustainable and locally adapted. Indigenous crops such as millet, sorghum, yam, and cassava demonstrated resilience to local climatic conditions and supported biodiversity preservation. Increased dependence on industrial food systems may reduce agricultural diversity and increase reliance on imported ingredients, refined wheat products, and monoculture production systems. The commodification of indigenous foods also raises ethical concerns regarding cultural appropriation and commercial exploitation. Food corporations may profit substantially from traditional food knowledge while local communities receive limited economic benefit. Additionally, commercial reformulation may distort or simplify culturally significant foods for mass-market consumption.

Despite these concerns, some scholars argue that agro-processing innovations need not necessarily undermine cultural preservation. Sustainable food processing strategies could potentially improve food accessibility and economic opportunities while maintaining nutritional integrity and cultural authenticity. However, achieving such balance requires careful policy regulation, community participation, and nutrition-sensitive food innovation.

Research Gaps and Study Justification

Although substantial literature exists on nutrition transition and ultra-processed foods globally, limited research specifically examines the ultra-processing of indigenous foods within West African contexts. Existing studies frequently address imported Western foods while neglecting how local traditional foods themselves are increasingly transformed through industrial agro-processing. Furthermore, limited interdisciplinary scholarship integrates food science, nutrition, public health, agro-processing, and cultural analysis within a single framework. Most studies focus either

on nutritional outcomes or economic dimensions without adequately addressing sociocultural implications. There is also insufficient empirical attention to consumer perceptions regarding processed indigenous foods and how marketing strategies shape public understanding of nutritional quality. Similarly, few studies critically evaluate whether current agro-processing practices align with sustainable nutrition objectives and indigenous food preservation. This study therefore addresses important gaps by critically examining the nutritional, public health, cultural, and agro-processing implications of ultra-processed indigenous foods in West Africa. By synthesising perspectives from multiple disciplines, the study contributes to broader debates concerning the future of African food systems, sustainable nutrition, and culturally responsive agro-processing innovation.

Methodology

Research Design

This study adopted a qualitative systematic review design supported by descriptive content analysis to critically examine the emergence of ultra-processed indigenous foods in West Africa and their implications for nutrition, public health, agro-processing, and cultural sustainability. The systematic review approach was considered appropriate because the study sought to synthesise existing scholarly evidence from multidisciplinary sources including food science, nutrition, public health, agro-processing, and indigenous food systems literature. The design enabled the integration of diverse empirical findings and theoretical perspectives relevant to the nutrition transition occurring across West African societies. The study employed an interpretivist analytical orientation, focusing on understanding how industrial food processing transforms indigenous foods and reshapes dietary systems within contemporary West African contexts. The review also incorporated elements of thematic analysis to identify recurring concepts, patterns, and controversies within the selected literature.

Data Sources and Search Strategy

Secondary data were utilised exclusively in this study. Academic literature was retrieved from major scholarly databases including Scopus, Web of Science, PubMed, Google Scholar, and ScienceDirect. Additional institutional reports and policy documents were obtained from international organisations such as the Food and Agriculture Organization (FAO) and the World Health Organization (WHO).

The literature search utilised combinations of relevant keywords and Boolean operators, including:

- “ultra-processed foods” AND “West Africa”
- “nutrition transition” AND “Africa”
- “indigenous foods” AND “agro-processing”
- “traditional foods” AND “food industrialisation”
- “processed indigenous foods” AND “public health”

- "food systems transformation" AND "Sub-Saharan Africa"

The search focused primarily on peer-reviewed journal articles published between 2008 and 2024 to ensure both foundational and contemporary relevance. Earlier seminal works relevant to nutrition transition theory and indigenous food systems were also included where necessary.

Inclusion and Exclusion Criteria

The study adopted clearly defined inclusion and exclusion criteria to ensure relevance and quality of selected literature. Included studies were:

1. Peer-reviewed academic articles;
2. Studies focusing on Africa or comparable low- and middle-income contexts;
3. Research addressing ultra-processed foods, indigenous foods, agro-processing, nutrition transition, or food systems transformation;
4. English-language publications;
5. Empirical, theoretical, or review studies with direct relevance to food science and nutrition.

Excluded materials included:

1. Non-academic opinion articles;
2. Unverified online publications;
3. Duplicate studies;
4. Studies unrelated to African food systems or public health nutrition;
5. Publications lacking sufficient methodological transparency.

Following screening and eligibility assessment, fifteen core scholarly sources were purposively selected due to their strong relevance to the study objectives and conceptual framework.

Data Analysis

Data were analysed using thematic content analysis. Relevant findings from selected studies were carefully extracted, coded, categorised, and synthesised according to recurring themes. Major analytical themes included:

- nutrition transition,
- ultra-processed foods,
- agro-processing transformation,
- indigenous food systems,
- public health implications,
- urbanisation and food environments,
- and cultural erosion.

Comparative analysis was conducted to identify areas of convergence, divergence, and emerging debates within the literature. The review further evaluated how industrial processing influences nutritional composition, dietary behaviour, and cultural food practices within West African societies.

Reliability, Validity, and Ethical Considerations

To enhance reliability and validity, only credible academic databases and peer-reviewed sources were utilised. The study also employed triangulation by integrating evidence from multiple disciplines and institutional reports. Consistency was maintained throughout the review process through systematic screening and thematic coding procedures. Since the study relied exclusively on secondary data from publicly available scholarly materials, no human participants were directly involved. Consequently, formal ethical approval was not required. However, all scholarly materials were appropriately acknowledged and cited in accordance with academic integrity and APA 7th edition referencing standards.

Results

Table 1: Major Drivers of Ultra-Processed Indigenous Food Consumption in West Africa

Driver	Description	Key Supporting Studies
Urbanisation	Increasing urban lifestyles reduce time available for traditional cooking and increase dependence on convenience foods	Holdsworth & Landais (2019); Reardon et al. (2021)
Commercial Agro-Processing	Expansion of food industries and packaged indigenous food products	Aworh (2008); Jideani et al. (2022)
Globalisation	Increased exposure to Western dietary patterns and multinational food corporations	Baker et al. (2020); Popkin (2017)
Changing Consumer Preferences	Preference for convenience, portability, and ready-to-eat meals	Masters et al. (2022)
Aggressive Food Marketing	Media promotion and branding of processed indigenous foods as modern and desirable	Baker et al. (2020)
Women's Labour Participation	Reduced household cooking time due to formal employment	Holdsworth & Landais (2019)

Table 2: Nutritional and Public Health Implications of Ultra-Processed Indigenous Foods

Public Health Outcome	Associated Dietary Changes	Supporting Literature
Obesity	Increased consumption of calorie-dense processed foods	Steyn & Mchiza (2014); Popkin et al. (2020)
Hypertension	High sodium content in processed foods	Baker et al. (2020)
Type 2 Diabetes	Increased refined carbohydrates and sugars	Popkin (2017)
Micronutrient Deficiencies	Loss of natural nutrients during industrial processing	Jideani et al. (2022)
Cardiovascular Diseases	High saturated fats and processed food additives	Monteiro et al. (2019)
Double Burden of Malnutrition	Coexistence of undernutrition and obesity	Vorster et al. (2011); Popkin et al. (2020)

Table 3: Sociocultural Effects of Industrialised Indigenous Foods

Sociocultural Issue	Observed Effect	Key References
Decline in Traditional Cooking Practices	Reduced intergenerational culinary knowledge transfer	Chukwu & Dogbe (2023)
Cultural Erosion	Weakening of indigenous food identity and communal food culture	Chukwu & Dogbe (2023)
Dietary Westernisation	Increasing preference for packaged and processed meals	Popkin (2017)
Food Commodification	Traditional foods transformed into profit-oriented industrial products	Masters et al. (2022)
Reduced Dietary Diversity	Dependence on standardised processed products	Reardon et al. (2021)

Discussion of Findings

The findings reveal that urbanisation, globalisation, and commercial agro-processing constitute the primary drivers of ultra-processed indigenous food consumption in West Africa. The reviewed literature demonstrates that changing urban lifestyles and increased demand for convenience foods have significantly altered traditional dietary patterns. Agro-processing industries increasingly reformulate indigenous foods into commercially attractive products, thereby accelerating the nutrition transition across

the region. The results further indicate strong associations between ultra-processed indigenous foods and emerging public health concerns such as obesity, hypertension, diabetes, and cardiovascular diseases. Industrial processing frequently reduces fibre and micronutrient content while increasing sodium, sugar, and unhealthy fat levels. Consequently, West African populations increasingly experience the double burden of malnutrition characterised by simultaneous undernutrition and diet-related chronic diseases. In addition, the findings highlight important sociocultural implications. The industrialisation of indigenous foods contributes to declining traditional cooking practices, erosion of indigenous culinary knowledge, and weakening cultural food identity. Younger generations increasingly depend on instant and packaged foods, reducing engagement with traditional food preparation systems. Overall, the findings suggest that although agro-processing offers economic and food security benefits, excessive industrialisation of indigenous foods may undermine nutritional health and cultural sustainability within West African societies.

Conclusion

The transformation of indigenous food systems through industrial agro-processing represents one of the most significant contemporary developments within West African food environments. This study critically examined the emergence of ultra-processed indigenous foods and their implications for nutrition, public health, agro-processing practices, and cultural sustainability. The findings demonstrate that although agro-processing innovations contribute positively to food preservation, market accessibility, economic growth, and convenience, the increasing ultra-processing of traditional foods also introduces substantial nutritional and sociocultural concerns. The study established that rapid urbanisation, globalisation, changing consumer lifestyles, supermarket expansion, and commercial food marketing are major forces driving the nutrition transition across West Africa. Traditional diets historically centred on minimally processed indigenous foods are increasingly being replaced by industrially reformulated products characterised by refined ingredients, additives, preservatives, sweeteners, and elevated sodium levels. Consequently, many indigenous foods that once supported balanced nutrition and cultural continuity are gradually being transformed into convenience-oriented commercial commodities.

One of the major conclusions arising from this study is that ultra-processed indigenous foods contribute significantly to the growing public health burden within West African societies. The reviewed literature consistently linked increasing consumption of processed foods to obesity, hypertension, cardiovascular diseases, type 2 diabetes, and micronutrient deficiencies. This trend is particularly concerning because the region simultaneously continues to experience undernutrition and food insecurity, thereby intensifying the double burden of malnutrition. The findings suggest that the industrialisation of indigenous foods may undermine the nutritional advantages historically associated with traditional African diets. The study also concludes that the transformation of indigenous foods extends beyond nutritional change into broader sociocultural implications. Traditional food systems in West Africa historically embodied indigenous knowledge, communal identity, cultural heritage, and intergenerational learning. However, increasing dependence on instant

and commercially packaged indigenous foods contributes to declining traditional cooking practices and weakening cultural attachment to indigenous dietary systems. Younger generations are increasingly exposed to westernised food environments that prioritise convenience and commercial appeal over cultural authenticity and nutritional integrity. Consequently, food industrialisation may contribute to the gradual erosion of indigenous culinary heritage and traditional ecological knowledge.

Furthermore, the study concludes that contemporary agro-processing systems in West Africa are strongly influenced by broader political and economic structures within global food systems. Commercial profitability, multinational food corporations, aggressive marketing strategies, and changing urban food environments increasingly shape dietary behaviours and food production priorities. While agro-processing remains essential for economic development and food security, the findings indicate the need for more nutrition-sensitive and culturally responsive processing approaches.

Importantly, the study does not reject agro-processing or technological innovation entirely. Rather, it argues for a balanced and sustainable model of food processing capable of preserving nutritional quality and cultural authenticity while still supporting economic development and food accessibility. Sustainable agro-processing strategies should therefore prioritise minimal processing techniques, reduced additive usage, lower sodium and sugar content, preservation of dietary fibre, and protection of indigenous food knowledge systems. Governments, food industries, nutritionists, and public health stakeholders must collaborate to develop regulatory frameworks and food policies that encourage healthier processing standards and consumer education. The study contributes to existing scholarship by integrating perspectives from food science, nutrition, public health, agro-processing, and cultural studies to provide a comprehensive understanding of the ultra-processing phenomenon within indigenous West African food systems. Nevertheless, further empirical research remains necessary, particularly laboratory-based nutritional analyses and consumer behaviour studies focusing specifically on commercially processed indigenous foods within different West African contexts. In conclusion, the rise of ultra-processed indigenous foods represents both an opportunity and a challenge for West Africa. While agro-processing can strengthen food systems and economic development, excessive industrialisation risks compromising nutritional health and cultural sustainability. The future of West African food systems therefore depends on achieving a critical balance between technological advancement, public health protection, and preservation of indigenous food heritage.

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