

Gastronomic Heritage and Conservation Challenges of *Gbodoklin* in Abomey: An Ethnogastronomic Approach and Preservation Perspectives

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Abstract: *Gbodoklin*, a traditional dish of Abomey, embodies both the local gastronomy and the cultural identity of its people. Through an ethnogastronomic approach, this study explored its key ingredients (maize flour, African basil, oil, smoked fish, dried meat or shrimp, tomatoes, water, and salt) as well as its preparation techniques. A total of 510 individuals were surveyed, and the results revealed significant diversity in the perception and consumption of traditional dishes. The methodology combined field surveys, documentary research, and experimentation. The analysis highlighted strengths, weaknesses, threats, and opportunities, pointing to a major challenge for the valorization of this dish. Findings indicated both a diversity of preparation styles across communities and a gradual loss of culinary knowledge among younger generations, exacerbated by globalization and the increasing use of industrial food products. The study proposes solutions for preserving this gastronomic heritage, including the transmission of culinary knowledge, the promotion of *Gbodoklin* within culinary tourism, and the integration of sustainable agricultural practices.

Keywords: *Gbodoklin*, Gastronomic Heritage, Ethnogastronomy, Globalization, Preservation

1. Introduction

Gastronomy represents an essential component of the intangible cultural heritage (ICH) and the cultural identity of tourist destinations, yet scientific literature on the subject remains scarce. Gastronomic heritage constitutes a cornerstone of cultural identity, reflecting not only culinary traditions transmitted from generation to generation but also the history, beliefs, and social practices of communities (1–4).

On May 16, 2001, the UNESCO Executive Board approved a preliminary study on the protection of traditional culture and folklore, along with working definitions of the concept of “intangible cultural heritage” (ICH) (5,6). The safeguarding of ICH was formally adopted in the 2003 Convention (7). The term ICH encompasses living traditions and expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe, as well as the know-how involved in traditional craftsmanship (8,9). However, gastronomic heritage only gained full recognition in 2010, when UNESCO inscribed on the ICH list the traditional Mexican cuisine, the French gastronomic meal, and a traditional food product the gingerbread of Northern Croatia (10–12).

Gastronomy is a key element of ICH due to its cultural value. It brings together multiple functions identity, historical significance, temporal markers, and heritage and thus becomes a central driver of development that integrates tradition and modernity, as well as specificity and universality. These dimensions must be embedded in local life and regional activities, thereby contributing to the cultural value of gastronomy (13).

Although traditional cuisine is inherently linked to the history, culture, tourism, identity, and economy of any tourist destination, its recognition as ICH by UNESCO represents a major contribution at the global level. For this reason, this study focuses on gastronomic heritage as a broader concept, encompassing other important forms of heritage such as culinary heritage. Nonetheless, UNESCO-recognized gastronomic heritage has received limited academic attention (14,15). Furthermore, heritage gastronomy tourism, which aims to revitalize the economy of a region or a country, rarely places global gastronomic heritage at the center of its development strategies (16–18).

In this context, the city of Abomey former capital of the Kingdom of Dahomey possesses a rich culinary heritage that reflects its prestigious past. Among its emblematic dishes is *Gbodoklin*, a traditional meal that is gradually disappearing.

Once a staple food in local diets and cultural ceremonies, *Gbodoklin* is currently experiencing a marked decline. Several factors contribute to this trend: evolving lifestyles, the modernization of food habits, the scarcity of certain traditional ingredients, and the weak intergenerational transmission of culinary knowledge (19–21). This phenomenon echoes the broader fragility of ICH, threatened by urbanization and globalization.

In the face of this decline, it is crucial to better understand the dynamics underlying the disappearance of *Gbodoklin* and to identify appropriate strategies for its preservation. This article offers an in-depth analysis of the challenges surrounding this dish, based on an ethnogastronomic approach combining field surveys, interviews with tradition bearers, and an examination of local dietary trends. It seeks to address the following research questions: What factors explain the decline of *Gbodoklin*? What are its cultural and nutritional roles? How can this dish be valorized to ensure its sustainability in contemporary gastronomy?

Through this study, we aim to make a significant contribution to the safeguarding of Beninese culinary heritage, while exploring pathways for the reintegration of *Gbodoklin* into everyday life and into the broader touristic, economic, and gastronomic landscape of Abomey.

2. Methodology

2.1. Study Framework

This study is part of a broader effort to safeguard and promote Beninese culinary heritage, with a particular focus on *Gbodoklin*, a traditional dish currently at risk of disappearing. Once widely consumed, this meal is increasingly being replaced by more modern alternatives, thereby threatening its intergenerational transmission.

The primary objective of this research is to thoroughly document the preparation process of *Gbodoklin*, providing a detailed account of the ingredients, utensils, and sequential steps involved in its production. In parallel, a financial assessment was conducted to estimate the cost of preparing this dish, taking into consideration expenses related to raw materials and the energy resources required for cooking.

Finally, an analysis of economic and commercial viability was carried out to explore opportunities for the reintroduction and valorization of *Gbodoklin* within the food market. This reflection encompasses the accessibility of ingredients, the feasibility of large-scale production, and strategies that could enhance its adoption by a broader audience, both in Abomey and across Benin, as well as at the international level.

2.2 Type of Research

This study relied on a mixed-methods approach, combining both qualitative and quantitative methods (22,23) in order to provide a comprehensive analysis of the traditional dish *Gbodoklin*.

2.2.1 Qualitative Approach

The qualitative component enabled a detailed description of the ingredients, utensils, and step-by-step preparation process of *Gbodoklin*. This approach contributed to the documentation and preservation of a dish that is currently at risk of disappearing.

2.2.2 Quantitative Approach

The quantitative component consisted of a financial assessment of the production cost of *Gbodoklin*, taking into account the price of raw materials and energy resources used. Furthermore, an estimation of the dish's commercial potential was conducted, analyzing its economic feasibility and viability on both local and international markets.

2.3 Data Collection

Data collection was carried out using several complementary methods (24–26), allowing for a comprehensive overview and in-depth analysis of both the preparation process and the consumption patterns of *Gbodoklin*. The main methods employed were as follows:

2.3.1 Direct Observation

A detailed follow-up of the *Gbodoklin* preparation process was conducted. This observation allowed for the documentation of the preparation stages, the ingredients used, as well as the specific culinary techniques applied by the cooks.

2.3.2 Semi-structured Interviews

Interviews were conducted with specialized cooks (mainly women in their sixties) experienced in preparing *Gbodoklin*, as well as with regular consumers of this traditional dish. These interviews provided valuable insights into perceptions, consumption habits, and the socio-economic factors influencing the choice of this meal in the Beninese context.

2.3.3 Documentary Review

An analysis of documentary sources was carried out to examine the historical, cultural, and socio-economic aspects of Beninese traditional dishes, with a particular focus on their impact on local communities. This review helped contextualize the field data collected and enriched the overall analysis.

2.3.4 SWOT Analysis of Gbodoklin

To better understand the current situation and future prospects of *Gbodoklin*, a SWOT analysis was conducted. This framework highlights the strengths and weaknesses of the dish as well as the opportunities and threats it faces in the context of Benin's culinary landscape. Based on this assessment, strategic recommendations are also proposed to ensure the sustainable promotion and commercialization of *Gbodoklin*.

Table 1: SWOT Analysis of Gbodoklin

| Strengths | Weaknesses | Opportunities | Threats | Strategic Recommendations |
|---|---|--|---|--|
| <ul style="list-style-type: none"> - Benin has a wide range of local dishes. - The ingredients used in the preparation of local dishes are produced locally. - These ingredients are relatively inexpensive. | <ul style="list-style-type: none"> - Scarcity of organizations involved in the promotion of local dishes. - Lack of investment. - Limited initiatives. - Insufficient funding. - Absence of tools for marketing and promotion of local dishes. | <ul style="list-style-type: none"> - Valorization of <i>Gbodoklin</i> in hotels and restaurants across Benin. - Improvement in maize and palm nut production. - Creation of platforms dedicated to the promotion of local dishes. | <ul style="list-style-type: none"> - Growing consumer demand for the dish. - Increasing pressure on maize and palm nut production. - Risk of the dish becoming unknown and progressively disappearing. | <ul style="list-style-type: none"> - Inclusion of <i>Gbodoklin</i> on the menus of modern restaurants in Benin. - Compliance with hygiene standards. - Implementation of HACCP principles. - Establishment of a sales and distribution strategy for <i>Gbodoklin</i>. - Creation of dedicated sites for the preparation and commercialization of <i>Gbodoklin</i> to promote local culinary techniques among foreign visitors and tourists. |

3. Results

This study identified the essential ingredients required for the preparation of *Gbodoklin*, a traditional Beninese dish. These locally sourced ingredients play a key role in shaping the flavor, texture, and nutritional value of the meal.

3.1 Ingredients used in the preparation of *Gbodoklin*

Gbodoklin is prepared with locally available products that give the dish its unique taste and nutritional qualities. The main ingredients include maize flour, African basil leaves (*Tchayo*), palm oil (or vegetable oil), smoked fish, dried meat or shrimp, fresh tomatoes or tomato paste, as well as water and salt. Each of these components contributes significantly to the overall preparation and identity of the dish.

3.1.1. Maize Flour

The origin of maize flour dates back to Antiquity, particularly among Mesoamerican civilizations such as the Aztecs and the Mayas. Maize (*Zea mays*), domesticated approximately 9,000 years ago in the region corresponding to present-day central Mexico specifically the Rio Balsas Valley was a staple food for these peoples. Over time, it spread worldwide and became an essential crop in Africa, Asia, and Latin America (27–30).

Maize flour holds considerable nutritional, economic, and cultural importance in many regions of the world:

- It is rich in carbohydrates, providing a sustainable source of energy (31,32).
- It contains dietary fiber, B-group vitamins, and essential minerals such as iron and magnesium (33–35).

- Being naturally gluten-free, it represents a valuable alternative for individuals with celiac disease or gluten intolerance (36).

As a staple food, maize flour is widely incorporated into traditional diets. In Latin America, it is used in the preparation of tortillas, while in Africa it forms the basis of various porridges (37,38).

Maize flour is produced by grinding dried maize kernels into a fine powder. It is consumed in diverse culinary forms across Africa, Latin America, and Asia. In Benin, maize (*Zea mays*) is the most widely cultivated and consumed cereal crop (39). It occupies a central place in household diets and is used in numerous traditional dishes, including Gbodoklin. Photo 1 illustrates maize flour obtained after grinding the kernels, a crucial step in the preparation of this traditional recipe.



Photo N°1: Maize flour, photograph by Gildas ADJAHO, November 2024

3.1.2. African Basil Leaves (Tchayo)

African basil (*Ocimum gratissimum*), locally called Tchayo in Benin, Togo, and Nigeria, is an aromatic plant belonging to the family Lamiaceae. Also referred to as “tropical basil” or “clove basil” because of its distinctive clove-like aroma, this plant naturally grows in the tropical and subtropical regions of South Asia and Africa. It has been widely domesticated in West Africa, where it is valued both for its culinary uses and its medicinal properties (40).

Tchayo leaves are a staple aromatic ingredient in West African cuisine. They are commonly used to season sauces, soups, marinades, and other traditional dishes, adding a unique fragrance and flavor (41,42). The name of the traditional dish Gbodoklin derives directly from this plant, reflecting its cultural and gastronomic significance.

In traditional medicine, African basil is renowned for its wide range of therapeutic applications:

- Antiseptic and digestive effects: used to treat oral and skin infections, as well as bloating and gastrointestinal disorders (43).
- Calming effects: traditionally employed to reduce stress and promote sleep (44–46).
- Anti-hemorrhagic properties: fresh leaves are macerated, and their juice applied to wounds to stop bleeding and accelerate healing a practice supported by scientific studies (47,48).

Beyond traditional uses, phytochemical analyses show that African basil (Tchayo) contains alkaloids, tannins, and flavonoids, compounds with demonstrated antioxidant, anti-inflammatory, antibacterial, and hypolipidemic activities (49,50). It also exhibits antidiabetic (hypoglycemic) and antihypertensive effects, which explains its widespread use among diabetics in Nigeria, where it is known as *Efirin* (51,52).

From an ecological perspective, Tchayo contributes to crop protection by repelling soil pathogens and harmful insects (53). Culturally, it holds strong significance in many West African communities, being incorporated into both culinary traditions and ancestral medicinal rituals [25].

In short, African basil (Tchayo) is a versatile plant, essential for its culinary, medicinal, ecological, and cultural values. It enriches traditional dishes such as sauces served with pounded yam or white dough while also providing recognized health benefits.



Photo N°2: Morphological presentation of the Tchayo plant, known in the Fon language as Gbodoklin, and in French as African basil (*Ocimum gratissimum*), an aromatic plant of the Lamiaceae family.

3.1.3. Additional Ingredients, Equipment, and Other Elements

In addition to the main ingredients (maize flour and African basil leaves), several complementary elements may be incorporated to enhance both the flavor and the texture of *Gbodoklin*.

- Spices and seasonings: salt, chili, garlic, onion, ginger.
- Oils: palm oil or vegetable oil, commonly used in cooking.
- Aromatic herbs: parsley, coriander, or other herbs depending on local culinary preferences.

These ingredients not only enrich the taste but also reflect the diversity of traditional culinary practices across different households and regions.

3.1.4. Required Equipment

The preparation of *Gbodoklin* also necessitates specific utensils to ensure optimal cooking and the desired texture of the dish:

- Pot or cooking pan: used to cook the maize mixture.
- Wooden spatula or pestle: essential for stirring and homogenizing the preparation.
- Bowl: for the initial mixing of the ingredients.
- Whisk or spoon: to prevent lump formation during preparation.
- Plate or banana leaves: traditionally employed for serving and presentation.

Together, these utensils and complementary ingredients are indispensable in achieving the authentic taste and consistency of *Gbodoklin*, while preserving its cultural and culinary identity.

3.2 Gbodoklin Preparation Procedure

The preparation of Gbodoklin is divided into three main steps:

Step 1: Preparation of Hot Water

Pour approximately 1 liter of water into a pot and bring it to a boil. Add a pinch of salt and all the necessary roasted seasonings (chili, tomato, garlic, onion, ginger) to the boiling water to enhance the flavor of the dish.

Step 2: Addition of African Basil (Tchayo)

Chopped Tchayo is mixed into the boiling mixture.



Photos 3 and 4: African basil leaves, commonly known as *Tchayo* (chopped for cooking). Photograph by Gildas ADJAH, 2024.

Step 3: Preparation of the Diluted Paste

In a bowl, measure approximately 150 g of maize flour and add cold water. Mix thoroughly with a spoon or whisk until a smooth, lump-free paste is obtained.



Photo 5: Mixing maize flour with cold water. Photograph by Gildas ADJAH, 2024.

Step 4: Cooking the Paste

Reduce the heat slightly under the cooking pot. Pour the diluted paste into the seasoned boiling water while stirring continuously with a wooden spatula to prevent lumps from forming. As the mixture begins to thicken, gradually incorporate the remaining

maize flour, stirring vigorously. Then, work the paste with a spatula or wooden pestle until a smooth and compact texture is obtained.

Step 5: Finishing the Cooking

Finally, reduce the heat to medium-low and allow the paste to cook for 5 to 10 minutes, stirring regularly to prevent sticking at the bottom of the pot. Once the paste reaches a firm, slightly elastic, and homogeneous consistency, it is ready to be served.



Photos 6 and 7: Cooking utensils and ingredients for the preparation of *Gbodoklin*. Photograph by Gildas ADJAH, November 2024.



Photo 8: *Gbodoklin* at the end of preparation. Photograph by Gildas ADJAH, November 2024.



Photo 9: *Gbodoklin* served on a plate. Photograph by Gildas ADJAH, November 2024.

3.3. Financial Assessment of Preparing Gbodoklin

The financial assessment made it possible to estimate the expenses incurred for acquiring the ingredients necessary for preparing Gbodoklin. The table below presents these costs:

Table 1: Financial Assessment of Gbodoklin Ingredients

| Ingredients | Unit | Quantity | Unit Price (FCFA) | Total Cost (FCFA) |
|------------------------------------|-------|----------|-------------------|-------------------|
| Maize flour | g | 500 | 500 to 800 | 800 |
| Water | L | 1 | - | - |
| Salt | Pinch | 1–2 | 5 to 25 | 100 |
| Fresh tomatoes or tomato paste | PM | - | 500 to 1000 | 1500 |
| Smoked fish, meat, or dried shrimp | PM | PM | 1000 to 2500 | 3500 |
| Oil (palm or vegetable) | PM | PM | 100 to 300 | 400 |
| Energy (gas, wood, or charcoal) | PM | PM | 100 to 300 | 400 |
| Total cost of ingredients | - | - | - | 6700 |

Some ingredients, such as salt, potash, and other condiments, were not precisely quantified as their usage varied depending on preferences and the quantity prepared.

This table highlights the expenses required to procure the main ingredients for preparing Gbodoklin. Price variations depended on the market and individual choices regarding ingredients and energy sources.

3.4 Feasibility of Preparing the Gbodoklin Dish

In the preparation of Gbodoklin, we adhered to the forward-movement method and used exclusively local and natural ingredients.

These choices ensure the quality of the product and enhance its nutritional value. Moreover, thanks to refrigeration, it can be stored for several days without notable deterioration.

The analysis of the ingredients used in Gbodoklin demonstrates that it can be prepared entirely from local products, making it an economically viable dish suitable for commercialization. The ingredients are available year-round and offered at affordable prices. Traditionally consumed by the Fon-speaking group, primarily located in the southern and central regions of Benin, Gbodoklin is a typically Beninese dish enjoyed at both lunch and dinner.

Gbodoklin can be consumed by anyone over the age of five, regardless of gender. In the long term, thanks to new information and communication technologies as well as various advertising channels (both physical and digital), it is possible to extend its commercialization on a national and international scale.

However, it is essential to ensure proper hygiene conditions during preparation and handling of the finished product. Particular attention must be paid to cooking times to prevent food poisoning due to improper mixing of ingredients. To our knowledge, consuming Gbodoklin does not pose any adverse health effects to consumers.

Furthermore, the promotion and valorization of Gbodoklin help showcase local resources through Beninese culinary arts. This dynamic directly benefits local producers (farmers and cultivators), who experience increased demand for their products. Consequently, this rise in production and commercialization contributes to the improvement of their living conditions, thereby supporting poverty reduction and the achievement of the Sustainable Development Goals (SDGs).

3.5 Brief History of the Traditional Dish Gbodoklin

Seraphine Adoukonou, the only living person still knowledgeable about the Gbodoklin dish, provided information on its preparation techniques and history. Our sources are limited to her, while BABA DÈGOU Félodi was able to give some guidance on its uses. Apart from them, no one else knows this dish or the techniques required to prepare it, even though it is very tasty, inexpensive, and easy to make. Yet, it is completely absent from restaurant menus.

She recalled that her mother prepared it for her for the last time five years before her death, which occurred 40 years ago. Therefore, we conclude that the last time she saw it being prepared was 45 years ago, as of the date of the interview on January 3, 2025. Originally, this dish was used as a medicinal food to feed children suffering from infections. It is made primarily with Tchayo, also called Gbodoklin. Due to its antibiotic properties, children who were reluctant to drink the herbal tea made from this plant (African basil) were put on a diet of Gbodoklin. Its main ingredients are basil leaves and maize flour, with additional local ingredients required for its preparation. Regular consumption by children, and also adults, helped to cure infections. At that time, ingredients in Fon cuisine were primarily sourced from leaves and seasonings. This represents a culinary substitution intended to achieve a medicinal purpose. As mentioned above, the mnemonic association led the populations of the Abomey plateau to attribute the name of the basil leaf (Tchayo, Gbodoklin) to this dish.

4. Discussion

The study of Gbodoklin, as part of Beninese gastronomic heritage, reveals both its cultural importance and the threats to its sustainability. The modernization of dietary habits, the breakdown of intergenerational knowledge transfer, and the absence of a structured valorization policy make it a dish at risk of disappearing. Immediate action is therefore needed to ensure its preservation and promotion.

Several studies have shown that traditional African dishes play a crucial role in both preserving cultural identity and contributing to local economic development. For example, traditional fermented foods of Benin such as tchoukoutou, tchakpalo, gowé, and afitin are not only pillars of local culture but also represent an important source of income for households (particularly women), thereby helping to improve their living standards (54–56).

Furthermore, a survey on the consumption of cowpea-based dishes in southern Benin demonstrated that these traditional preparations provide up to 42% of the recommended intake of fiber, 30% of folate, and 37% of magnesium (57). This highlights not only the nutritional value of such dishes but also their role in food security.

Despite these benefits, many traditional dishes continue to disappear due to a lack of visibility and support. In the cultural area of the Baatonou (northwestern Benin), a study identified about twenty local dishes at risk of extinction. The reasons cited include the loss of knowledge of their benefits, climate change, the intensive use of herbicides, and the disappearance of certain plant species (58).

These examples show that without specific efforts in structuring, promotion, and integration into modern circuits, a dish such as Gbodoklin still artisanal and scarcely commercialized risks falling into oblivion.

Finally, there is an economic potential that could be exploited. A study on the artisanal production of “atta” (cowpea fritters) in Cotonou emphasized that although this activity is not highly profitable, it creates jobs for women, contributes to the informal economy, and relies on cultural transmission (mother to daughter). Modernizing production methods and providing institutional support could transform these microenterprises into more professional and value-added activities.

6. Perspectives for the Valorization of Gbodoklin

Given the risk of the disappearance of Gbodoklin, several actions can be considered to ensure its preservation and valorization:

- Culinary workshops and training sessions could be organized to teach younger generations how to prepare Gbodoklin, similar to initiatives for other traditional dishes in Ghana and Senegal.
- The development of versions better suited to current consumption habits (ready-to-cook, vacuum packaging, standardized production) could promote its large-scale distribution.
- Listing Gbodoklin as part of Benin’s gastronomic heritage would ensure its visibility and promote it among tourists and local consumers. The example of Thiéboudienne from Senegal, inscribed on the UNESCO Intangible Cultural Heritage list, demonstrates that such initiatives can strengthen the safeguarding of traditional dishes.
- Promoting Gbodoklin in restaurants and at cultural events in Benin could encourage its consumption and stimulate demand.

7. Conclusion

This study highlighted the importance of Gbodoklin as a gastronomic heritage of Abomey, reflecting local cultural identity and culinary richness. The results revealed diversity in its preparation while emphasizing the challenges in transmitting traditional culinary knowledge, especially in the face of globalization and the introduction of industrial food products. It is therefore essential to take concrete measures to preserve this dish, by promoting the training of younger generations, valorizing Gbodoklin within culinary tourism, and encouraging sustainable agricultural practices. Such actions will contribute to the safeguarding of Gbodoklin while reinforcing the preservation of both the environment and local culinary culture.

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