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# An Overview of Pre-Colonial Textile Technology in Katsina State, Nigeria.

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## ABSTRACT

*Long before industrial manufacturing reached Northern Nigeria, artisans of Kasar Katsina operated a technologically sophisticated textile production system rooted in the Central Sudan. This study reconstructs the complete chaîne opératoire that sustained the industry, from the cultivation of short staple cotton (auduga) and the harvesting of wild forest silk (tsamiya), through the construction of the double-heddle treadle loom (Uwar Masaka), to subterranean indigo-vat dyeing (marina), mallet glazing (bugu), and symbolic hand embroidery. Drawing on archaeological survey, oral testimony, and archival sources, the study documents evidence of an industrialised weaving and dyeing tradition — including the surplus dye pits still visible — across eight historic centres of central Katsina: Dabawa, Wurma, Birchi, Illaila, Kafin Dangi, Ingawa, Mahuta, and Chida. It examines the artisans who produced local cloth, their raw materials and tooling, their socio-economic organisation, and the colonial-era factors associated with the industry's decline, and situates hand-woven attire within wider debates on national identity. The study concludes by recommending the integration of this technical heritage into vocational curricula and cultural preservation frameworks.*

*KEYWORDS: Pre-colonial textile technology; Katsina; dye pits; indigenous knowledge systems; traditional attire; national identity.*

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## 1. Introduction

Archaeological and ethnographic evidence indicates that textile production is among humanity's oldest technologies, developing initially from the use of animal pelts and later from woven plant and animal fibres (Harari, 2011). In West Africa, the recovery of woven cloth alongside iron implements at Igbo-Ukwu, Anambra State, suggests that indigenous weaving traditions existed by at least 100 BC (Shaw, 1939), while trade evidence points to cloth strips as a medium of exchange along the Trans-Saharan routes.

In Hausaland, textile production and its associated indigo-dyeing complex developed into a major economic activity (Ingawa, 1984). Accounts of the origin of indigo dyeing differ: some scholars trace it to Berber and Arab traders who introduced the craft from North Africa (Nasir, 1984) — a claim reflected in the Hausa name for the indigo plant, baba — while others locate its origins further east, in India, China, Java, and Japan, from where it reached Hausaland via long-distance trade and, eventually, European shipping networks (Heathcoat, 1976; Ponting, 1980; Dhuinnshleibhe, 2000).

Katsina's location within the fertile Sudan-Sahelian belt favoured rain-fed cotton cultivation, and towns such as Karofi and Ummadau developed as production hubs linking cotton fields to weaving looms and dye yards (Kabir & Nasidi, 2022). Between the sixteenth and nineteenth centuries, Karofi, Ingawa, Gozaki, and Ummadau were major centres of a cotton textile industry patronised by Tuareg traders from Agadez (Abdullahi, 2014; Hopkins, 1973; Ingawa, 1984), and the hundreds of dye pits surviving at these sites attest to Katsina's status as one of Nigeria's most industrious weaving centres.

Beyond covering the body, textiles served protective, economic, and symbolic functions (Ibrahim, 1992), yet the industry has declined sharply, and hand-woven Hausa cloth risks disappearing unless it is documented and revalued — including by the traditional rulers whose patronage once sustained it. This study brings together ethnographic and documentary evidence to reconstruct the technical processes of Katsina's pre-colonial textile industry, evaluate the institutional structures that governed it, and analyse the factors associated with its decline.

### 1.1 Problem Statement

Despite its historical and cultural significance, traditional weaving and indigo dyeing across Hausaland — and Katsina State in particular — have declined markedly. This decline is generally linked to two shifts. First, the introduction of factory-produced cotton and flax yarn, cheaper and more readily available than local thread, undermined demand for hand-spun fibre (Ingawa, 1984; Shea, 1975; Travieso, 2024). Second, elite and public patronage shifted away from heavy, hand-woven attire (riga) toward imported industrial textiles, weakening the social status and economic returns of local craft masters (Adamu, 2005). Without systematic mapping and recording of surviving sites through archaeological survey and oral interviews, the knowledge held by remaining artisan lineages risks being lost entirely. This study addresses this gap by documenting the historical evolution, technical tooling, socio-economic organisation, and decline of traditional textile technology in central Katsina.

### 1.2 Objectives of the Study

The specific objectives of this study are:

i. To reconstruct the sequence of traditional textile production across central Katsina.

ii. To document the step-by-step technical processes, specialised tooling, and organic chemistry involved in cotton spinning, weaving, indigo reduction dyeing, and hand embroidery.

iii. To analyse the historical factors, colonial policies, and market dynamics associated with the decline of local textile manufacturing.

iv. To examine the significance of traditional attire for national identity.

v. To evaluate strategies for preserving traditional textile knowledge and integrating indigenous craft skills into vocational education and heritage frameworks.

## 2. Methodology

The study adopted an integrative methodology combining archaeological survey, ethnographic interviews, and documentary/economic-historical analysis, while explicitly distinguishing established findings, field observations, oral testimony, and author interpretation from one another. Fieldwork focused on eight historical production centres in central Katsina — Dabawa, Wurma, Birchi, Illaila, Kafin Dangi, Ingawa, Mahuta, and Chida — which were surveyed and photographically documented. Key informant interviews were conducted with surviving artisans and community elders to reconstruct production techniques, tooling, and the socio-economic organisation of the industry.

## 3. Findings

### 3.1 Historical Background of Katsina Textile Development

Pre-colonial African industrial history demonstrates that sophisticated manufacturing systems flourished independently long before European imperial expansion. In Northern Nigeria, the “pre-colonial period” denotes the era preceding the British conquest and the establishment of the Protectorate of Northern Nigeria in 1903. Within this framework, textile technology refers to the organised chaîne opératoire used to transform raw organic fibres into finished garments — harvesting, carding, spinning, mechanical weaving, chemical vat dyeing, tailoring, and surface embroidery.

The political and economic foundation of Kasar Katsina evolved from early agrarian settlements (garuruwa) around key environmental nodes such as Durbi ta Kusheyi, Kwatarkwashi, and Kwiambana. These autonomous polities consolidated into the centralised Sarauta system around the late fifteenth century (c. 1492), when Muhammadu Korau established a ruling dynasty at Katsina city after defeating Sanau of Durbi. As Usman's (1981) The Transformation of Katsina, 1400–1883 demonstrates, Katsina's

expansion was driven by internal socio-economic transformation, population reorganisation, and craft specialisation rather than external migration alone. The city developed into a major commercial and intellectual entrepôt linking the Central Sudan with North Africa, the Middle East, and the Volta Basin; gates such as Kofar Guga served as commercial entry points where royal toll collectors, foreign caravans, and local craft producers interacted.

The arrival of Wangarawa and Dyula scholar-trader networks from the Mali and Songhai empires between the fourteenth and fifteenth centuries introduced advanced commercial practices, Islamic scholarship, and specialised garment cuts, while North African merchants from Ghadames, Ghat, and Tripoli traded luxury goods, raw silk, and metal wares for Katsina's tanned leather, agricultural surpluses, and dyed textiles. Islam acted as a socio-technical catalyst for the textile industry: the adoption of Islamic dress standards generated sustained demand for full-body garments, and Islamic literacy fostered an urban class of scholar-artisans who established tailoring workshops, formulated talismanic embroidery motifs, and standardised production for regional and trans-Saharan export markets.

### 3.2 Raw Materials and Tools

Pre-colonial Katsina textile production drew on practical knowledge of botanical resources, animal fibres, and materials processing (Candotti, 2010; Kriger, 2006), understood as an interconnected chaîne opératoire in which each transformation depended on specific cultural choices and environmental resources. Table 1 summarises the principal raw materials, implements, and mechanical components documented during fieldwork.

| ***Term*** | **Description / Function** |
|---|---|
| *Auduga* | Short-staple raw cotton (Gossypium herbaceum/hirsutum). |
| *Tsamiya* | Wild forest silk fibre harvested from the local environment. |
| *Alharini / Alaari* | Imported North African or Mediterranean waste silk. |
| *Baba* | Cultivated indigo plant (Indigofera tinctoria/arrecta). |
| *Mazari* | Drop spindle fitted with a clay flywheel whorl (gululu). |
| *Masaka* | Male-operated double-heddle treadle loom. |
| *Marina / Karofi* | Subterranean indigo reduction dye-pit complex. |
| *Bugu* | Rhythmic mallet-beating technique used to glaze indigo cloth (turkudi). |
| *Allera* | Wooden guide admitting the thread into the masaka. |
| *Mataki* | Two-legged wooden gear regulating thread entry into the masaka via the koshiya. |
| *Koshiya* | Wooden implement used to cast the thread into the cakarkari. |
| *Cakarkari* | Iron pressing mechanism that lifts the allera toward the loom. |
| *Takala* | Wooden foot-rest assembly on which the weaver's legs rest during weaving. |
| *Matuki* | Driver mechanism that operates the weaving action. |
| *Dan Takala* | Iron fastener used to secure cloth to the masaka during weaving. |
| *Kunkuru* | Stone-and-rope anchor point that stabilises the thread and prevents slippage. |
| *Gongola* | Iron implement used in sewing to fix the thread. |
| *Sit (Sitter)* | Purpose-made foam-and-wood seat used by the weaver. |
| *Engine* | Bicycle wheel adapted for winding thread; a modern substitute for the mazari. |
| *Dan baji* | Wood-and-iron guide moving thread from the gongola to the cakarkari. |

*Table 1: Principal raw materials and tools of pre-colonial Katsina textile production.*

### 3.3 Production Process

**Fibre Preparation and Spinning (Kadi).** Cotton bolls were processed manually with an iron rod (kilikili) rolled over flat granite, then carded using bow-strings (atafa) and hand-spun with a drop spindle (mazari) weighted with a clay whorl (gululu). Spinners produced two yarn grades: abawa, a coarse structural yarn, and arafiya, a fine, tightly spun thread reserved for embroidery and luxury weaves.



*Figure 1: Field documentation marker at a surveyed production site in central Katsina.*

**Loom Construction and Weaving (Saka).** The weaving frame (uwar masaka) was built from six heavy timbers set into the ground — two on each side and two at the centre-front — which bore the working load of the loom; the central timber anchored the thread. A set of interlocking wooden and iron components then regulated the weaving action: the allera guided thread into the masaka, the mataki and koshiya controlled thread entry through leg-operated movement, and the cakarkari pressed the allera up toward the loom. The matuki drove the sewing action, the dan takala and kunkuru secured and anchored the cloth and thread, and the weaver worked from a purpose-built seat (sit) while a bicycle wheel ("engine") — a modern substitute for the mazari — wound thread for the dan baji to feed between the gongola and cakarkari. Male weavers operated double-heddle treadle looms to produce narrow cotton strips, 0.75 to 4 inches wide, rolled into tight bolts (talaka), while female weavers used indoor vertical broadlooms to create the wide fabric panels used for wrappers and heavy blankets.

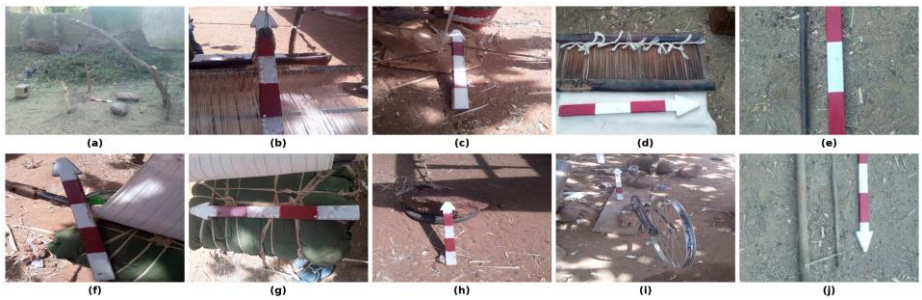



*Figure 2: Field photographs of loom components and weaving apparatus documented at surveyed sites — (a) uwar masaka frame, (b) cakarkari, (c) mataki, (d) takala with woven strip, (e) koshiya, (f) matuki, (g) sit, (h) kunkuru, (i) engine (bicycle-wheel winder), (j) dan baji.*

**Indigo Vat Dyeing and Glazing (Marina & Bugu).** Subterranean dye vats were filled with crushed indigo leaves (baba), water, and alkaline wood ash (atabari). Alkaline conditions facilitate the conversion of insoluble indigo into a soluble reduced form; exposure to oxygen after immersion then oxidises the dye, locking the blue pigment into the fibres (Kriger, 2006). High-grade turkudi cloth was further impregnated with gum arabic and rhythmically beaten with heavy hardwood mallets (mabuga) to produce a dark, metallic sheen.

**Embroidery and Finishing.** Tailors assembled narrow cloth strips into flowing robes (babbar riga), which scholar-artisans then hand-embroidered with geometric designs such as aska biyu ('two knives') and aska takwas ('eight knives') using iron needles (basira) and wild silk. In the wider literature on Hausa embroidered gowns, these patterns are understood to carry symbolic and status-related meaning, objectifying the wearer's prestige and identity (Douny, 2011).

### 3.4 Socio-Economic Organisation and Colonial Disruption

Labour division within Katsina's textile industry, as reported through key informant interviews, balanced seasonal farming with year-round craft output. Women operated within domestic compounds (gida),

controlling ginning, carding, hand-spinning, and vertical broadloom weaving, and used hand-spinning as a source of independent income by selling yarn directly to markets. Men managed treadle-loom narrow weaving, vat dyeing, mallet glazing, tailoring, and embroidery. This division is broadly consistent with the wider Hausa textile literature (Candotti, 2010), which also cautions that gendered task allocation varied across localities and periods; the pattern described here reflects the surveyed sites and should not be read as a fixed rule for Hausaland as a whole.

Dyeing complexes are reported by informants to have been regulated by professional craft guilds led by the Sarkin Marina (Chief of Dyers), a title consistent with the titled-office structure of Hausa emirate governance described by Usman (1981). Informants attributed to this office the collection of industrial taxes, enforcement of quality standards, management of dye-pit allocation, and resolution of trade disputes; this account rests on oral testimony gathered during the study, and no archival or documentary source confirming the formal scope of the office was located.

Following the British occupation of Katsina in 1903, colonial economic policy reorganised aspects of local production. The British Cotton Growing Association is documented to have directed raw cotton toward export markets for Lancashire mills, and the extension of the railway to Kano in 1912 is associated with increased imports of factory yarn and printed textiles (Ingawa, 1984; Adamu, 2005). Recent economic-historical work complicates a simple decline narrative, however: Travieso (2024) documents that different segments of the handicraft textile sector experienced varying degrees of resilience and decline between 1911 and 1952 rather than uniform collapse, and Shea's (1975) study of the Kano dyeing industry similarly shows sector-specific adaptation alongside contraction. Read together with the Katsina-focused evidence gathered here, factory yarn imports plausibly undercut domestic female spinners and contributed to a gradual reduction in dye-pit use, but the process is better understood as an uneven, sector-specific transformation than a single, total collapse (Nasir, 1995).

Local handloom weaving nonetheless demonstrated resilience: because rain-fed farming was restricted to the wet season (June to September), farmers engaged in handloom weaving during the extended dry season (rani) as a low-cost secondary occupation. Strong local demand for high-status traditional garments — especially for weddings, chieftaincy installations, and religious festivals — preserved a market for local weavers (Abdullahi, 2014).

### 3.5 Currency Role and Trans-Saharan Trade

The use of standardised woven cotton strips and glazed cloth as a form of currency is a well-documented phenomenon in West African economic history (Kriger, 2006). Consistent with this, informants in this study reported that woven cotton strips (tari) and glazed indigo cloth (turkudi) served as media of exchange in Hausaland before foreign currency became widespread, including for royal taxes, judicial fines, marriage bridewealth, and livestock purchase; stored cloth bolts also served as a household reserve, tradable for grain during dry-season shortfalls. These reports are oral-historical evidence specific to this study's informants and have not been independently verified against colonial administrative or judicial records.

### 3.6 Cultural Significance of Traditional Attire

Clothing is among the most immediate forms of material culture through which communities encode history, status, and belief onto the human body (Eicher & Sumberg, 1995). For the Hausa of Kasar Katsina, the babbar riga, embroidered in wild silk with motifs such as aska biyu and aska takwas, is the physical residue of the chaîne opératoire: the finished garment carries within its weave and stitching the accumulated labour of the spinner, the dyer, and the embroiderer, functioning as a repository of cultural memory (Douny, 2011). Traditional attire thus represents more than a functional response to climate or modesty; it is a material expression of history, social affiliation, status, and collective identity, materialising individual and group prestige, wealth, political authority, and social affiliation (Douny, 2013).

Given Nigeria's considerable ethnic and cultural diversity (Ododo, 2019), no single garment — including the Hausa babbar riga — can credibly represent the country as a whole; Nigeria has not settled on a single “national dress” in the manner of some nation-states. At the broader national level, however, traditional attire can contribute to national identity by providing visible representations of Nigeria's cultural diversity: its value lies not in any one garment replacing others as a universal costume, but in the preservation and public recognition of diverse indigenous clothing traditions strengthening collective appreciation of Nigeria's historical and cultural plurality.

For Katsina and the wider Hausa cultural region, the preservation of traditional attire is consequently linked to the preservation of indigenous textile knowledge. As demand for hand-woven garments declines, the consequences extend beyond the loss of a fashion style: reduced demand weakens the economic incentives for spinners, weavers, dyers, embroiderers, and tailors, thereby threatening the transmission of knowledge across generations. Where traditional attire continues to be worn at weddings, chieftaincy installations, and religious festivals by rulers and prominent members of society, it allows younger generations to see and value the significance of traditional dress.

## 4. Discussion

The historical trajectory of Katsina's textile industry indicates that pre-colonial West African manufacturing involved an ecologically attuned, technically sophisticated craft complex. The technical sequence — spanning organic chemistry, mechanical loom engineering, and symbolic artistic design — represents a substantial body of indigenous technical knowledge. Its significance lies not in any single technique but in the integration of multiple operations into a socially organised chaîne opératoire: cotton cultivation, fibre preparation, spinning, weaving, dyeing, glazing, tailoring, and embroidery formed interconnected stages through which agricultural resources were transformed into economically valuable and culturally meaningful garments. The persistent survival of handloom weaving nonetheless underscores the adaptability of local artisans, who leveraged dry-season labour and cultural patronage to preserve their craft through periods of colonial disruption.

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## 5. Conclusion

Pre-colonial textile technology in Kasar Katsina reflects a significant body of African technical innovation and economic organisation, whose products continue to carry cultural and, more broadly, national significance as one thread within Nigeria's plural textile heritage. The study provides field documentation of pre-colonial textile manufacturing processes, tooling, and site locations across the understudied production centres of central Katsina, offering an empirical foundation for further research and for heritage and vocational-education planning before this knowledge is lost.

## 6. Recommendations

Based on the findings, the following are recommended:

i. **Curricular Integration:** Introduce traditional textile processing, natural dye chemistry, and handloom techniques into technical and vocational curricula across tertiary institutions in Katsina State.

ii. **Archaeological Preservation:** Formally designate and protect historic subterranean dye-pit complexes (marina) in Dabawa, Karofi, Wurma, and Ingawa as state heritage sites.

iii. **Cooperative Support:** Form artisan cooperatives that provide contemporary weavers and dyers with raw materials, modern equipment, and direct market access.

iv. **Cultural Promotion:** Promote the public use of traditional hand-woven attire during state ceremonies, cultural festivals, and international exhibitions.

v. **Inclusive National Promotion:** Support the wearing and public celebration of Katsina hand-woven and embroidered attire within Nigeria's wider plural dress heritage.

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