Burkina Faso through Its Traditional Architecture: A Century of Research on Built Vernacular Heritage

Maria Lidón de Miguel 1,*, Thierry Joffroy 2, Camilla Mileto 1 © and Fernando Vegas 1 ©

1 Research Centre PEGASO, Universitat Politècnica de València, 46022 Valencia, Spain
2 CRAterre, AE&CC Research Unit, École Nationale Supérieure d’Architecture de Grenoble, Université Grenoble Alpes, 38000 Grenoble, France
* Correspondence: malidde@upv.es

Abstract: The study of traditional habitats aims to recognise their values and preserve them within the necessary transformations of societies. In the context of Burkina Faso, the great variety of issues related to habitat together with the cultural richness of the country, resulted in a complex nucleus of knowledge, the unity of which had not been fully considered. With the objective of providing an integrated overview and identifying thematic trends of current relevance, the literature review involved the collection, comparison, and synthesis of works of different origin, scale, discipline, theme, and intention. As well as offering an orderly compilation, the analysis traces the history of the existing literature, revealing how its evolution mirrored the progress in vernacular architecture studies in international terms and adopted an increasingly practical approach. Furthermore, the review demonstrates the widespread academic and institutional interest in linking the development of the country to its cultural heritage, and the valuable documentation work resulting from this interest. Finally, a reflection is raised on the evolution of knowledge, its aspirations, potential impact, and usefulness, which could be of use also in other contexts.

Keywords: vernacular architecture; cultural heritage; habitat; dwellings; earthen construction; local resources; transformation; interdisciplinarity; integrative literature review; Burkina Faso

1. Introduction

The vernacular architecture of Burkina Faso is the result of the traditional way of building being developed and modified over time by the cultures that inhabited the territory in order to shape their habitat. It is mostly a domestic architecture, closely linked to the extended family, the basis of social organisation, and therefore deeply affected by the social and economic changes experienced by the communities. Each culture has configured its housing according to a particular system of life and occupation of the territory, with distinctive identifying features. Thus, in this context, the cultural and landscape value of the built vernacular environment is particularly evident.

Currently, this lived heritage is partially preserved in the rural areas of the country, inhabited by approximately 70% of the population [1]. The maintenance of traditional building practices allows communities to autonomously meet the demand for housing. People build their own dwellings with the resources at their disposal and the occasional assistance of local builders. At the same time, popular housing is confronted with the need to adapt to social, economic, cultural, and environmental changes, a challenge currently faced by rural environments in all nations to a greater or lesser extent.

The review of the literature presented in this article resulted from the confluence of two lines of work: an ongoing research project aimed at analysing the transformations of vernacular architecture and the documentation, cataloguing and field work in the context of Burkina Faso conducted by CRAterre (Centre international de la construction en terre) 1.
1.1. Background to the Geographical and Cultural Context of Burkina Faso

Like the rest of the West African region, the territory of Burkina Faso is influenced by two opposing air masses: a cooler, wetter, maritime mass coming from the Atlantic Ocean, and a warmer, drier, continental mass arriving from the Sahara Desert. The oscillation and interaction of both masses imply the alternation of two very contrasting seasons: the dry and rainy seasons. Moreover, as the air masses move in a southeast to northwest direction and vice versa, this alternation occurs progressively, such that the south of the territory, closer to the Atlantic, receives the wet season earlier and enjoys it for longer, while in the north, in the Sahel, the dry season predominates throughout the year. The Burkinabé territory is thus divided into three climatic zones defined by the amount of annual rainfall and the temperature regime (Figure 1). This results in a generalised savannah landscape that is more like a desert landscape in the north and a humid, sparsely forested tropical zone in the south. Furthermore, regardless of the climatic zone, the landscape of each region varies between the rainy and dry seasons [2].

![Figure 1. Plan of some of the main cultures present in the territory. Some of these cultures, such as the Lobi and the Nankani, included in the Gurunsi group, also inhabit territories beyond the established political borders. The plan also shows the decrease in annual rainfall in different decades and the classification into three different climatic zones.](image)

In terms of soil composition, much of the country is covered with laterite surfaces. This is a type of clayey soil, generally reddish in colour, which is widely used as a building material in both its earthy and rocky forms. Precisely because of the scarcity of trees, especially in the Sahelian strip of territory, they are more appreciated for the shade and protection they offer than as building material. Earth is therefore the main material resource in the vernacular architecture of most of the cultures in the country.

The environment and the climate influence the possibilities for construction, but the determining factor in the way available resources are used, and thus the final form of the house, is cultural [3], and, as already stated, this is particularly evident in Burkina Faso (Figures 2 and 3).
Figure 2. Vernacular architecture of some of the different cultures in Burkina Faso, by photographer Arnold Heim on expedition to West Africa in 1933–1934: (a) Village north of Ouahigouya, North Region; (b) Culture Lobi house, Sud-Ouest Region (Source: ETH-Bibliothek Zürich, Bildarchiv/Fotograf: Heim, Arnold/Dia_008-008 and Dia_008-003/CC BY-SA 4.0).

Figure 3. Vernacular architecture of some of the different cultures in Burkina Faso in 2018: (a) Culture Lobi house in the village of Samsana, Sud-Ouest Region; (b) Culture Gan house in Obiré, Sud-Ouest Region; (c) Culture Mossi house in Baasneere, North-Centre Region; (d) Culture Kassena house in Tangassoko, South-Centre Region.
The most widespread culture in the territory was the Mossi, formerly organised with a complex political structure in the kingdoms of Yatenga, Ouagadougou, Koudougou, Tenkodogo and Kaya. Their domains occupied nearly the entire basin of the Nakambe River (White Volta), up to the Nazinon (Red Volta), either displacing native cultures or coexisting with them through power sharing. Peuhl and Gourmantche populations inhabited the territories to the north and east, respectively. Between the Nazinon (Red Volta) and the Mouhoun (Black Volta), the generic name Gurunsi grouped populations with similar cultural traits to the west of the Mossi kingdoms: the Lela, Nuna, Ko, Puguli, Sissala, Kassena, Nankani, and Kusasi. The Samo lived to the north of the Gurunsi territories. The Marka and Bobo had settled in the Mouhoun (Black Volta) basin and, to the south of these, the Senufo and Lobi lived. Alongside these main cultures, other smaller populations, such as the Gouin or the Gan, inhabited isolated territories or intermediate areas. The settlement of these populations was the result of migrations, conflicts, and alliances throughout time [4,5].

This description corresponds to the occupation of the upper Volta River basin and its tributaries at the time of the creation of the Upper Volta French colony in 1919, as part of the AOF (Afrique Occidentale Française). The Republic of Upper Volta was established in 1960, with the independence of the territory. The current name, Burkina Faso, was given by President Thomas Sankara in 1984 [6]. This article will use the name of the country according to the historical period concerned.

1.2. Background to the International Body of Research on Vernacular Architecture

The interest in vernacular environments, offering the best adapted solutions to local conditions, had already appeared in the 1960s [3,7,8]. This attention intensified in the 1980s, shaping the idea of the vernacular habitat as the result of traditional cultural processes that deserved to be studied and revealing the wide variety of issues related to this object of research [9–12]. Subsequently, the Encyclopedia of Vernacular Architecture of the World [13] was published in 1997, followed by the Charter on the built vernacular heritage in 1999 [14]. They represented a common basis for study and the definitive international agreement for the preservation of traditional building know-how, respectively. In particular, the encyclopaedia presented, in one volume, the theories and principles that would serve to unify the field of research, and devoted the other two volumes to describing the traditional habitats of the world, organised by geographical areas. Since then, vernacular architecture has been approached from multiple perspectives: showing new lines and challenges for its study in the 21st century [15,16], continuing the work of cataloguing and diffusion [17,18], approaching it as a source of knowledge for a sustainable contemporary architecture [19], considering its adaptation to a changing climate [20] or addressing its value as cultural heritage [21]. One particular focus awakened and remains: Special attention was paid to the benefits of earth, a building material linking numerous generations and cultures around the world [22], including those of Burkina Faso.

The traditional built heritage of the African continent has been an object of studies on vernacular architecture also since the 1960s. In fact, the great cultural wealth of Africa and its architecture occupied a central stage in research, giving rise to a specific field of study [23–27]. The work African Traditional Architecture by Susan Denyer in 1978 [26] was one of the first compendia to extend the study of vernacular architecture to the entire African continent. The study also sought to refute the widespread notion of the homogeneity of African material culture. The texts were accompanied by images showing the wealth of solutions from different cultures to the general themes that structured the publication: the configuration of towns and cities, sacred and community buildings, defence, decoration, and construction processes. In addition, the book proposed a taxonomy of housing forms, a classification of architectural styles and a reflection on the impact of modernisation on the building traditions of African cultures. The traditional architecture of the Republic of Upper Volta was presented with mentions of the Bobo, Lobi, Tambernu, Nounouma, Fulani, Samo and Somolo cultures.
In the encyclopaedia edited by Paul Oliver in 1997 [13], some cultures of Burkina Faso were also represented in the ninth section, Savanna Grasslands, of the Sub-Saharan Africa chapter. In addition to the common characteristics described by Jean Paul Bourdier for the territories, populations, and settlements south of the Sahara, the dwellings of some of the cultures in this area were described: the Bobo, by Patrick Dujarric; the Kouroumba, in the north, also by Patrick Dujarric; the Lela, in central Burkina Faso, by Jean Paul Bourdier; the Lobi, by Giovanna Antongini and Tito Spini; the Nankani, by Jean Paul Bourdier; the Senoufo, by Patrick Dujarric; and finally, the Zaose, a small group settled between the pre-colonial Mossi state of Kupela and the Gourmantche territories of Fada N’Gourna, by Allen F. Roberts.

Only the Bobo and Lobi cultures coincided in both compendiums. In addition to them, each publication added five different cultural groups, respectively. These groups were some of the more than 60 different ethnic groups inhabiting the territory of Burkina Faso. These two works, key in the dissemination of traditional African architecture in the international scene, suggested, particularly in the context of Burkina Faso, one of the issues motivating this review: the complexity of providing a complete description of the built vernacular environment in a territory inhabited by a multiplicity of cultures.

1.3. Motivation, Objectives and Main Results

In 1978, a report on the traditional habitat of Burkina Faso conducted by the UNDP (United Nations Development Programme) proposed the creation of a databank on vernacular construction techniques which could be accessed by the population and used to improve their dwellings with appropriate solutions [28]. The idea was based on an earlier proposal by UNESCO on the transfer of operational chains deriving from local know-how [29] and supported its feasibility by the existence of a similar bank of worldwide industrial techniques. The essay by Schumacher for a sustainable economy based on appropriate technologies had been published in 1973 [30], at a time when also a huge energy crisis, mainly affecting the industrialized Western world, was in its initial stages. A degree of awareness towards the limitation of natural resources and alternative ways of conceiving economic development was emerging [31].

The 1978 report on Burkina Faso is noteworthy because it was a survey on vernacular architecture, of an institutional origin, and with a clear operational focus: to offer the population similar traditional solutions with which they could maintain their autonomy and adapt to the socio-economic transformations inherent in the expected development of the country. Regardless of its impact, the report implied a novel approach that seemed to inaugurate a new perspective on development, consistent with the ideas that were beginning to arise, and which thus placed Burkina Faso in line with the international scene. The work also revealed the existence of studies on the built vernacular environment in the country conducted outside of academia and with an action-oriented objective.

The revision of this publication raised the possibility of compiling a much wider bibliography than the one usually cited, if references from different disciplines and sources, and with a diverse focus and scope of study, were considered.

The first reference to the habitat of Burkina Faso may be found in a general study of West Africa by the anthropologist Henri Labouret in 1931 [32]. Later, the bibliography of Upper Volta by Michel Izard in 1967 collected most of the studies on the country, devoting one of the sections to habitat [33]. In the field of architecture, the work African Spaces: Designs for living in Upper Volta, which focused on the configuration of dwellings of the Gurunsi group of cultures, was particularly renowned [34]. Recently, the most frequently mentioned collection of work has been the studies by CRAterre on the building cultures of the country [35,36].

However, these references were highlights of a body of research, coming from different disciplines, and spread across the territory over more than a century. What attention was paid to traditional habitats in these earlier and later studies? In what direction has research moved since then?
As reflected in the compendiums mentioned in the previous section, the cultural richness of this territory had created a complex nucleus of knowledge, the unity of which had not been fully considered. The literature review aimed to collect and analyse these antecedents with the following objectives:

- To provide an overview of the accumulated knowledge and draw attention to the usefulness of the literature, sometimes overlooked.
- To analyse the evolution of research, detect trends in its history and trace issues of current relevance.
- To demonstrate a general interest in the traditional habitat, which would prove the existence of qualities that are still useful and worthy of consideration.

The analysis compiles 100 references, published from the end of the 19th century to the first decades of the 21st century, which were chronologically classified according to the object of study, the format of the publication, the area of knowledge of the authors, and the intention and content of the research. As a result, a history of research on traditional built heritage in Burkina Faso was revealed. In addition, the analysis allowed the identification of relevant current issues, such as the presence of social and economic transformations inevitably affecting vernacular environments. Furthermore, a foreign admiration for the traditional local habitat could lead to some reflection on the motivation and potential audience of the studies, beyond their apparent intention and addressees. How this admiration relates to the real perspective of those who inhabit this architecture and how to transmit that interest so that it does not remain in the theoretical sphere is another question raised by the conclusions.

This review on the vernacular architecture of Burkina Faso can serve as a useful basis for further progress in the study of built heritage. Looking back and analysing what has perhaps been forgotten is at the origin of popular wisdom. In past actions can be found the answers to the changes experienced in the present and to the aspirations for the future, and this learning can serve as a guide for planning the actions to come.

2. Materials and Methods

This article attempts to compile and analyse all of the publications, from any academic discipline or institutional origin, that take features of the traditional habitat of the cultures of Burkina Faso as their object of study.

A critical approach was adopted during the research process, since the very analysis of the factors determining each investigation was considered to provide an insight into both the evolution of vernacular heritage research in the country and the current state of the art. The purpose was to synthesise the existing knowledge in a conceptual framework, identify the main themes from a historical overview and provide a system of classification [37,38]. This integrative approach was both quantitative and qualitative, but with a particular focus on the latter. Knowing the number of references from each academic discipline, the number of national studies or the proportion of works that include graphic information could be useful for the purpose of the work. However, highlighting the studies themselves by noting which topics were covered, with what attitude and for what purpose, regardless of their representativeness in the overall bibliography, could provide information on general research trends and on lines of study for the future.

Only references located in the geographical area of present-day Burkina Faso were analysed to delimit the review and to provide more specific results. Mentions of traditional habitat in the compendiums on vernacular architecture (referred to in the introduction) have therefore been excluded from the analysis.

Much of the research has been based on the collections of the Documentation Centre created by CRAterre team of AE&CC Research Unit at ENSAG of Université Grenoble Alpes. Over the years, this documentation centre has gathered an important collection on earthen architecture from all over the world, including Burkina Faso, which was consulted and discussed following a research stay at the centre in 2021.
In addition to academic publications, reports from national and international institutions, African and European universities and research centres were found. The digitised holdings of the following institutions were also consulted:

- **IRD (Institut de Recherche pour le Développement):** This institution originates from the former ORSC (Office de la Recherche Scientifique Coloniale), which was a public research centre created in 1944 with the aim of contributing to development in French colonies through scientific research. In 1953, it changed its name to ORSTOM (Office de la Recherche Scientifique et Technique Outre-mer), before becoming the IRD in 1998. This institute is mentioned in the Section 3 according to its name in each period.

- **Persée:** This open platform belongs to a research and support unit attached to the ENS in Lyon (École Normale Supérieure de Lyon) and the CNRS (Centre National de la Recherche Scientifique), supported by the Ministère de l’Enseignement Supérieur, de la Recherche et de l’Innovation. Its main mission is to valorise documentary heritage by ensuring its dissemination, enhancement, and preservation. It holds collections from humanities and social sciences, but also environmental and earth sciences.

- **Gallica** digital library of the Bibliothèque Nationale de France.

The consultation in these institutions was complemented with searches in online catalogues such as AfricaBib and databases such as Google Scholar.

The scoping review plan was initiated with the general objective of gathering the most representative references on the history of African architecture, in order to identify within them mentions of the cultures of Burkina Faso. For the identification, it was important to consider the name given to the territory at each historical period and, above all, the names given to the different local cultures. In the search, key terms such as “history”, “vernacular architecture”, “settlement”, “housing”, and “West Africa” were used. From this first group of publications, those that did not include any mention of Burkina Faso’s territory or cultures were discarded. Nevertheless, these works were useful for understanding the context of neighbouring cultures, narrowing the search, and identifying other important terms such as “tradition” and “transformation”.

In the second stage, the search focused on the context of the study. Publications on the traditional habitat of the populations of Burkina Faso were collected using the names of the local cultures, the French colony, and the country as keywords. Once the most recurrent sources were identified, the search addressed the authors, organisations, and main institutions promoting the publications. This phase of the study revealed the existence of monographs, series of publications, academic works and, in particular, reports containing detailed descriptions of the traditional habitat. To organise and refine the search for these reports, the keywords “cooperation”, “development”, “heritage conservation and promotion”, “habitat improvement”, and “building materials” were considered.

The selection of the publications was based on the habitat-related topics addressed, as presented in Table 1. In the same table, the research variables and how they were synthesised to organise the results are also explained. Regarding these analysis criteria, it was possible to organise and compare the references collected according to the following parameters: the scope of the study, the format and origin of the publication, the area of knowledge of the main authors, the research intent, and the research content (Table 2).

Within these parameters, there could be several ways to present the results. Following one or the other criterion could lead to information from the others being omitted. The data could overlap and be repeated. For this reason, it was decided to describe the results of the review according to their temporal succession. Thus, it would be possible to reflect the evolution of the studies, to identify when changes in trends in any of the five criteria mentioned above occurred, and furthermore, to understand these studies within the national and international historical context. However, a temporal succession also implied the need to determine how to organise time in stages. Finally, the article was structured according to approximate periods marked by some significant change detected in relation to any of the identified analysis criteria.
Table 1. Research process by stages.

<table>
<thead>
<tr>
<th>Consultation of Sources</th>
<th>Compilation of Documents</th>
<th>Creation of a Comparison Matrix</th>
<th>Analysis of Parameters</th>
<th>Identification of Periods</th>
</tr>
</thead>
</table>
| Research began with a documentary search on the geographical area of the former Haute Volta and present-day Burkina Faso, and on the cultural groups in the country. | Given the wide variety of aspects related to habitat, the following topics were selected:  
  - Territorial occupation, land ownership and management.  
  - Social organization.  
  - Production systems and domestic economy.  
  - Customs, traditions, crafts, and history of the cultures of the country.  
  - Local resources and construction techniques.  
  - Social, economic, and cultural transformations affecting lifestyles. | The comparison matrix was organized into a time axis and an axis composed of research variables:  
  - On the publication:  
    - Format.  
    - Promoting organization.  
    - Online access or archive consulted.  
  - On the authors:  
    - Academic discipline.  
    - Individual or collective work.  
    - Nationality.  
    - Gender.  
  - On the text:  
    - Culture studied.  
    - Geographical scope covered.  
    - Intention.  
    - Main theme.  
    - Graphic content. | The variables were synthesized into the following analysis criteria:  
  - Subject or scope of the study.  
  - Format and origin of the publication.  
  - Area of knowledge of the authors and characteristics of the work teams.  
  - Intention of the research.  
  - Content of the research. | Changes in any of the study criteria allowed the following stages to be distinguished:  
  - The colonial library in the first decades of the 20th century.  
  - Monographs on cultural groups from the 1950s to the 1960s.  
  - Institutional reports during the 1970s.  
  - Attention to earth as a building material in the 1980s.  
  - Construction know-how in Burkina Faso in the 1990s.  
  - Habitat transformations and continuity in the first decades of the 21st century. |

Organization of research    | Organization of the article
Table 2. Main analysis criteria and results. The numbers in brackets indicate the number of references for each criterion.

<table>
<thead>
<tr>
<th>Object of the Study *</th>
<th>Format of the Publication</th>
<th>Discipline and Information of Authors * 1</th>
<th>Research Content</th>
<th>Research Intent</th>
<th>Main Research Topic *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific cultural groups (59).</td>
<td>Journal articles (30). Monographs (26). Main organisms: ORSTOM, CRAterre.</td>
<td>Discipline: Architecture (36). Anthropology and sociology (27). Geography (18). Multidisciplinary teams (10). Others (9).</td>
<td>Textual and graphic descriptions (56). Textual descriptions (44).</td>
<td>Most of the references were academic in nature, but there was also an increasing intent to offer an application of that knowledge to cooperation projects, land management, habitat improvements, the design of public buildings, and the development of a construction industry. The practical approach is frequently found in national scale-works and institutional reports.</td>
<td>The topics covered can be classified as follows: Culture and habitat. Habitat improvements. Construction and habitat. Transformations and continuity.</td>
</tr>
<tr>
<td>Various cultural groups at the national level (33).</td>
<td>Book chapters (13). Main publishers: ORSTOM, Karthala, Éditions L’Harmattan, West African Archeological Association, Getty Conservation Institut.</td>
<td>Further information: Studies conducted exclusively by foreign researchers (78). Studies with women researchers as the main authors (24). Inclusion has been progressive since the 1980s.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Works without a cultural distinction (8).</td>
<td>Institutional reports (15). Main institutions: ORSTOM, ONU, PNUD, CRAterre, Frobenius Institute, Afrique sans Frontières, Direction du Patrimoine Culturel (Burkina Faso), Direction de l’habitat et de l’urbanisme (Burkina Faso).</td>
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<td></td>
<td>Academic studies (13). Exhibitions or maps (3).</td>
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</table>

Quantitative approach to the distribution of references * See Table 3 for the classification of references according to this parameter. * 1 A total of 78% of the studies were conducted exclusively by foreign researchers. See Table 3 and Figure 4 for the classification of references according to this parameter.
3. Results

A chronological description is provided, showing the object, format, discipline, intention, and content of the research collected on the vernacular habitat in Burkina Faso. This description is graphically complemented at the end of this section by a timetable of the studies in Figure 4, and a summary of the references organised according to the discipline of the authors, the topic addressed and the object of the research in Table 3.

As indicated, the periods structuring the text are marked according to some significant modification detected over time. These divisions cannot be precise, since the general inertia of the studies continues even if one of them marks a change in trend. Even so, broadly speaking, six stages can be distinguished and are explained below.

3.1. The Colonial Library\textsuperscript{4}, in the First Decades of the 20th Century

The consideration of domestic construction as a subject to be researched began with the interest of foreigners in the lives and landscapes discovered. The local populations, who built them, transmitted the necessary knowledge from generation to generation through practical experience. The first writings to mention the traditional habitat were, thus, the travelogues of explorers, missionaries, and new administrators of the territory. Constructions were shown in commentaries, photographs, and drawings, not as the object of the studies, but as the setting that framed the way of life that was being described.

The works of Captain Binger \cite{39} and Lieutenant Lucien Marc \cite{40} included references to the dwellings of the Mossi and other nearby populations, such as the Gurunsi, Peul or Boussangcè. Marc’s descriptions in 1909 even detailed exchanges of building techniques between local cultures that were in contact, revealing a dynamism of the built environment that is not usually reflected in studies of vernacular architecture. Both texts were accompanied by graphic material, which is useful as a visual record of this period. Other studies focused on the Bobo \cite{41} and Sénoufo cultures \cite{42}.

Following the establishment of the colony of Upper Volta in 1919, a series of specific works began to appear in the field of anthropology\textsuperscript{5}: on Lobi \cite{43} and on Mossi society \cite{44,45}. The latter, by a local official from AOF in 1932, covered the history and traditions of his culture and devoted a chapter to the processes of construction, maintenance, and repair of the Mossi dwellings. Coming from a traditional ruling family and educated in Ouagadougou (the capital), Antoine Dim Delobson was the first local to contribute to the body of ethnographic knowledge that was emerging.

The next significant reference was published in 1945. A Special Issue of the journal \textit{L’Architecture d’aujourd’hui}, devoted to \textit{France d’Outre mer}, included a short article on the indigenous housing of AOF, which was presented as an extract from a larger work by the same author, Raymond Lopez \cite{46}. This study, which could be considered the first in the field of architecture, reflected an initial interest in this discipline towards the traditional environments of the Voltaic cultures. Informative in nature, the slightly subjective attitude of the text hinted a certain incomprehension for unknown customs, as well as a sincere recognition of solutions which, according to the author, naturally reflected the benefits slowly achieved by modern urban planning.

Two years later, a map by the ORSC \cite{47} classified the types of housing identified in West and Central Africa, including the territories of Upper Volta. The low number of publications was consistent with the situation of the world in the first half of the 20th century and especially with the relative novelty of these territories in the academic world.

3.2. The Series of Monographs on Cultural Groups between the 1950s and 1960s

In contrast with the general studies, work began to be published on very specific geographical areas around the 1960s. As a basic social unit, the village was considered a representative sample of African cultures: it was the space where the complex relationships between human beings and their environment developed in a coherent manner \cite{48}.

One of the first examples was a thesis on the Mossi village of Taghalla, part of which was published in \textit{Les Cahiers d’Outre-Mer} in 1957 \cite{49}. This geographical study analysed
different aspects of the village, devoting a chapter to the strong social cohesion derived from the organization of the community and the dwellings. One of the most notable features of this work was that the academic nature was complemented by some degree of practicality. The explicit intention was to understand the adaptation of the Mossi people to the environment, in order to propose reasonable solutions for their economic development.

A similar approach was adopted in a series of monographs created by ORSTOM under the name *Atlas des structures agraires au Sud du Sahara* [50]. This series aimed to collect textual, graphic, and cartographic information on West and Central Africa and focused three of its first volumes on the Republic of Upper Volta: the Gourmantche village of Yobri [51], the Lela village of Tiogo [52] and the Dagari village of Pina [53]. These monographs covered the establishment of the community in the territory and its use of the land. They also included photographs, floor plans and sections of the dwellings, providing a useful record of traditional architecture from the perspective of geography.

Two publications from this period may represent an exception in terms of the general scope, but not of their practical intent. In fact, they clearly express the objective of using local knowledge to promote the changes deemed necessary for the country. This moment coincided with the independence of the colony, and the new republic was confronted with the challenge of international standards.

The first reference, in 1960 [54], was an article on the social cohesion of communities. It proposed collective cooperation as an indispensable tool for development and showed traditional social structure as the existing basis upon which any improvement plan should be based. The second reference was a report from 1962 [55] that formed part of a later document of the Ministère de l’Economie Nationale [56]. This report analysed traditional land ownership and occupation in the main cultures of the southwest of the territory, to ascertain how these could be adapted to a modern market economy based on private property.

Finally, three more studies during the 1960s continued the previous academic trend and employed anthropological and sociological approaches to describe the semi-buried habitat of the Bobo-Fing [57], and the forms of social grouping of Mossi [58], Bisa [59], and Gourmantche culture [60]. The former included photographs and schematic drawings of residential units; the latter three included textual descriptions.

Several of these studies [49,54,55] coincided in pointing to a gradually spreading principle of individualism as the trigger for the most significant changes in societies and their built environment. In relation to this theme, a series of works reported on the cultural, technological, and economic changes in Mossi society [61,62].

### 3.3. The Institutional Reports from the 1970s

The following period was characterized by the elaboration of reports commissioned by the Ministère du Plan des Travaux Publics [63], the United Nations [64] or the UNDP. They were mainly written by consultant architects, covered the entire national territory, and included textual and graphic descriptions of the vernacular architecture of some cultural groups. The study of traditional habitat was motivated by the aim to improve the general housing situation in the Republic of Upper Volta.

In 1970, the UN report [64] identified the short durability of the construction, insufficient hygienic conditions according to habitability standards, and the shortage of drinking water as the most urgent problems. The report highlighted the thermal regulation properties of earthen walls with small openings as advantages of vernacular systems. The report concluded that housing traditions were deeply rooted in the population and that any plan should promote a slow evolution towards solutions appropriate to local resources.

A succession of studies followed as part of a larger UNDP project to improve housing conditions. Two reports stood out: a catalogue of building materials used in the country in 1975 [65] and the proposal for the databank in 1978, mentioned in the introduction to this article [28]. Directly related to the fields of architecture and engineering, these studies were the first references to focus on local construction techniques.
In particular, the second report [28] explained how the development of societies into increasingly large urban clusters had created a new situation to which the usual means of subsistence had not yet adapted. For the author, the necessary improvements were to be made in rural areas and based on the common practice of self-construction to make efficient use of the available resources. The report surveyed the Mossi, Dagari, Lobi, Gurunsi and Gouin habitats to establish the databank of vernacular solutions. As noteworthy issues, the report mentioned cases of both transfers of traditional techniques between local cultures and adoptions of new industrialised materials, along with their consequences. It also warned of the risk posed by changes, introduced to improve activity in the rural environment, regarding their potential to deteriorate an apparently well-functioning autonomous habitat. In addition, it considered and explained the role of women within the family and, especially in the case of the Mossi and Gurunsi, the functions that each member of the family played during the construction process. As indicated in the introduction, this report called for a coherent and sustainable development, based on local practices and natural materials.

These works were produced in the context of the First United Nations Conference on Human Settlements in Vancouver (Canada) in 1977, and of the National Seminar on Habitat held in Ouagadougou, the capital of the country, a year earlier. These works were also the prelude to the public housing plans that would be launched in the following years in urban areas. Habitat was beginning to be studied not only for its cultural qualities, but also for its physical conditions and economic possibilities.

In parallel, previous trends also continued. A further four volumes of the Atlas des structures agraires au sud du Sahara were devoted to villages in Haute Volta and, finally, in Burkina Faso: the Birifor village of Diepla [66] and the Mossi villages of Zaongho [67] and Kumtaabo [68]. Another monograph, outside the series but also promoted by ORSTOM, analysed the social changes of Mossi populations in the Dakola region [69] and the Peul and Mossi settlements in the Oudalan region [70].

Alongside these geographical studies, there were also publications on the Mossi family [71,72], the Bobo dwelling [73], the Gourmantche village [74], the Dagari habitat [75], the Lobi housing and culture [76] and the Gurunsi architecture [77,78]. In the years that followed the last two works were developed into two books by Spini and Antognini in 1981 [79], and Bourdier and Minh-ha in 1985 [34]. Both are particularly remarkable for the quality and detail of their graphic expression and for their multi-disciplinary perspective.

### 3.4. Attention to Earth Material in the Early 1980s

In 1982 and 1983, three publications stood out for directly pointing out a specific characteristic of the habitat: earth was the main construction material in a vernacular architecture that was, in many cases, self-built.

These investigations were conducted on a national scale from the fields of architecture and anthropology. In fact, the discipline of architecture had become aware not only of the potential of architecture outside the training of architects [7,80], but also of the value of a material used for centuries by a large part of humanity.

The first, by Jocelyne Etienne-Nugue in 1982, is notable for considering architecture as an object of craftwork [81]. The monograph was an inventory of local know-how belonging to a series, Artisanats traditionnels en Afrique Noir, promoted by ICA (Institut Culturel Africain). In the chapter on pottery, a section on architecture showed the typical granaries of various cultures and the use of earth for the construction of walls, terraces, and decorations, including a great wealth of images. The study was aimed at safeguarding local cultural heritage, a distinctive feature of the populations.

This heritage value, apparently its first mention, appeared again at the end of the decade, and gained its deserved importance during the 1990s.

The second, in 1983, was a thesis by Gassé Koussoube, from the École Africaine et Mauricienne d’Architecture et d’Urbanisme, on the promotion of self-construction with adobe in the voltaic rural habitat [82]. This work was significant because, as an introduction, it
gave a detailed description of the vernacular architecture of the country and presented graphically a first distribution of typical forms of dwellings according to the regions and cultures. Based on this previous study, a series of proposals were made for the creation of new settlements with the technical addition of specific construction details derived from traditional solutions. The study also indicated which of these proposals could be applied to existing vernacular dwellings. This was the first nationwide publication that attempted to provide a synthesis of vernacular architecture throughout the country in the field of architecture, although because of the already mentioned complexity, the study only summarised the characteristics of the main habitats.

In the same year, a compendium of traditional constructions in Burkina Faso by Annemarie Fiedermutz-Laun was conducted as part of a Frobenius Institute project on earthen architecture in West Africa [83]. Like the reports from the previous decade, this text aimed to show traditional architecture as a basis for rural habitat improvements. It was also one of the first to mention the evolution of the built environment among its conclusions. The transformations were classified into three phases:

1. The original state of the rural cluster as an economic, social, and ritual unit.
2. The loss of the defensive character of the fortified habitats of some cultures (Bobo, Nuna, Kassena) together with a major independence of family groupings in smaller, separate compounds. Simplified earthen construction techniques were also adopted in cultures which had not traditionally employed them.
3. The use of new materials, such as concrete or corrugated sheet steel, considered to be less maintenance-intensive.

For the author, these changes were the result of the greater mobility of the population and the consequent decrease in the collective workforce that had traditionally allowed repairs to be done. The text proposed to promote the link between young people and their community to ensure the maintenance of architecture in the second phase at least. This study already pointed out, albeit indirectly, the importance of preserving the use of earth.

Another national report aimed to find the means for a housing improvement cooperation project based on assisted self-construction in 1987 [84]. Two other works by the Burkinabé architect, Issiaka Isaac Drabo, dealt with the study of traditional architecture [85] and the difficulties in the use of local materials [86]. The debate coincided with President Sankara’s call for a local economy and with massive urban parceling and social housing production in the capital.

It is worth noting the publication of a thesis in 1988 from the École d’Architecture de Marseille Luminy, by Boureima Diamitani, on the natural and built heritage to be protected in Burkina Faso [87], which represents a change in the subjects of study, specifically considering the built vernacular environment as valuable cultural heritage. Two years later, a specific monograph by Honoré Poyouor Some studied Dagara dwellings in the canton of Tobo [88], and, in 1993, the book Images d’Afrique et Sciences sociales included four chapters on Lobi and Dagara housing [89–92].

3.5. Burkina Faso’s Constructive Know-How in the 1990s

A specific period can be distinguished by the publication of the compendium Étude sur les savoirs constructifs au Burkina Faso in 1991 by CRAterre [35]. The study was carried out within the framework of the Education III project, concerning the construction of educational facilities in the country [93,94], and with two associated master theses [36,95]. This research was particularly relevant for several reasons:

- It included references to some of the most important previous publications.
- It introduced the concept of culture constructive, coined by this centre, and which linked the cultural and material aspects of habitat in one term.
- It showed a new intention in research on vernacular architecture: to apply its solutions to the design of new buildings, particularly schools, resulting from cooperation projects. Habitat had been studied as a cultural framework, as a basis for understanding land occupation systems, for addressing the problem of housing or improving
construction and habitability conditions. This study was pioneering in using local practices as a source of knowledge for the development of architectural design.

The project gave rise to very complete studies covering the forms of social organization, materials and techniques used, alongside building typologies. In addition, it considered the role that each member of the family, including women, played in the construction process. The texts were also complemented with graphic material in the form of photographs, drawings, and construction details.

In a similar line, a later publication by Drabo in 1993 in the book *Découvertes de Burkina* reflected on the influence of the traditional habitat on urban planning and modern architecture in Ouagadougou [96]. In the fields of geography and anthropology, publications continued to collect information on the habitat of some cultures. A book on the modernization of agriculture included a chapter on the evolution of Bwa settlements [97]. This was followed by Luc Pecquet’s studies on the traditions and meanings linked to earth in the construction of Lela dwellings [98–100] as well as by some studies conducted on Bisa residential groupings [101].

### 3.6. Habitat Transformations and Continuity in the First Decades of the 21st Century

Two works focusing on change and permanence of habitat in the Bobo and Mossi culture could mark the most recent period in the late 1990s [102,103]. Changes had already been noted, with the appearance of an individualistic tendency [49,54,55,83], new property regimes [55] and imported materials [36,82,83]. Studies had also been published on the relationship between tradition and modernity, a topic also addressed in later works [104,105]. However, Julia Allison Risser [101] and Yveline Deverin [102] specifically explored the features of the traditional built environment which were maintained in the urban habitat of Bobo-Dioulasso and Ouagadougou, respectively.

Some subsequent publications continued to focus on specific cultures [106–110] sharing the previous intention of broadening knowledge. Indeed, a compendium on local know-how in Burkina Faso, promoted by the CAPES (*Centre d’Analyse des Politiques Economiques et Sociales*) in Ouagadougou, devoted a whole chapter to the traditional habitat in 2006 [111]. The main mission of this research centre is to contribute to the implementation of public polices aimed at ensuring economic growth and development, by promoting economic intelligence and capacity reinforcement. The mentioned publication was remarkable because it meant the valorisation of the traditional know-how of the cultures of the country as a useful tool for the national economic development.

In the early 2000s research diversified into three sub-themes: the conservation of vernacular heritage, the use of earth and other local building materials, the improvements of habitat conditions.

The first is the most closely related to the previous literature on vernacular architecture, while the other two focused on the urban and semi-urban environment [112–114].

Efforts worthy of mention in heritage conservation include studies aimed towards the maintenance of the know-how of Kassena women [115–118], towards the preservation of vernacular architecture in the country [119] and, specifically, of the *Cour Royale* of Tiebélé and the *Na-Yiri* of Kokologho [120–123] as part of the Africa2009 programme9. As a direct result of the last two projects by CRAterre, publications aimed at disseminating vernacular-built heritage to a non-specialist audience appeared [121,122]. Heritage conservation projects were developed through international partnerships, such as those which would later continue in Tiebélé [124].

The transformation of the traditional environment has continued to be the subject of recent research, specifically examining the Bissa [125], Kassena [126,127], and Mossi cultures [128–130]. Other studies have focused on the urban sphere of Ouagadougou, considering the characteristics of the vernacular habitat preserved in it [131], or have sought to outline changing attitudes towards earth as a building material in the history of the country [132]. Finally, recent research has shown that, even when traditional typologies are not maintained, local dynamics, which are behind the configuration of vernacular
habitat, are still present in informal construction in urban areas. Thus, a recent topic of study is how to take advantage of the valuable resource that is the inhabitants’ experience in order to improve the conditions of the built environment [133]. One of the latest studies addressing vernacular solutions in the country, also conducted within the CRAterre team, has revisited local building practices in the current context [134]. This study is particularly relevant for analysing the building cultures of Burkina Faso as a basis for learning, with the goal of improving the national shelter response to the humanitarian crisis that the country has been facing since 2019.

4. Discussion and Conclusions

The literature review has provided a chronological classification of works in terms of the cultures studied, the disciplines of the authors, the thematic trends, and the research intentions. This classification has been summarised in Table 3 and Figure 4. Moreover, the analysis has revealed some implications, which are synthesised below.

Firstly, there are a variety of thematic trends related to the built vernacular heritage in Burkina Faso that evolves over time: the ways of life of the cultures of the country from a comprehensive perspective; the settlement, land management and social organisation systems; the demand for housing and the improvements in living conditions; the local resources used and the development of an earthen construction sector; the consideration as a source of knowledge for contemporary architectural design; and the changes in the ways of living and building. On this thematic variation, some issues can be highlighted:

- Although the themes overlap in time, it is possible to identify an evolution of research in Burkina Faso which reflects the general concerns that have marked the international history of vernacular architecture studies. Thus, the interest in the use of earth since the 1980s coincides with the historical moment when the general attention paid towards this building material began. The application of vernacular solutions in designs for cooperation projects has been an increasingly common practice since the 1990s. The proposals for the conservation of the national vernacular heritage, within the framework of the Africa2009 project, correspond to a time when the values of this type of architecture were generally accepted. Ultimately, the study of the transformation of rural cultural landscapes is one of the most recent topics of study in the discipline. The connection between contexts thereby becomes apparent.

- The themes are distributed among different disciplines according to their area of interest, which suggests a central idea: A multidisciplinary approach allows for a deeper understanding of both the habitat, the object of study, and the research itself.

- The topic of transformation has permeated some of the works, first as a secondary issue, but with increasing intensity over time. Changes were perceived in the greater independence of family units and individuals from the extended family [49,54,55,83], in terms of land ownership and management systems [55,56], and in the use of new building materials [28,36,82,83]. It was only in the late 1990s that studies began to specifically focus on analysing changes in the traditional built environment. This leads to the conclusion that research developed in parallel to the social and economic changes that would inevitably affect the configuration of housing, as reported in other contexts [135–137]. This review provides insights for tracing the origin of the changes observed today.
Table 3. References according to the topics covered, cultures studied and discipline of authors (geography, architecture, anthropology and sociology, mixed teams and other disciplines).

<table>
<thead>
<tr>
<th>Culture and habitat</th>
<th>Mossi</th>
<th>Gourmantche</th>
<th>Bissa</th>
<th>Dagari</th>
<th>Birifor</th>
<th>Bobo</th>
<th>Sénoufo</th>
<th>Lobi</th>
<th>Gurunsi</th>
<th>Gurunsi (Lela)</th>
<th>Various Cultures</th>
<th>General</th>
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<td>General</td>
<td>Mangin 1916</td>
<td>Djam Delobson 1932</td>
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<td>Delafoss 1909</td>
<td>Labouret 1931</td>
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<td>Settlement in the territory</td>
<td>Delafoss 1909</td>
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Table 3. Cont.

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<th>Culture and habitat</th>
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Figure 4. Succession of studies according to the discipline of their authors and the historical events in the country.
Secondly, the intention of much of the literature reported since the 1970s was to base the social and economic development of the country, especially in the field of housing and the rural environment, on the traditions and cultural traits of the local populations. In fact, there is an evolution of the approaches in two directions: towards a practical approach, linked to the activist-oriented studies highlighted as one of the necessary fields of research on vernacular architecture in the 21st century [138]; and towards a certain specialisation of research as opposed to the general approach of the first studies.

Thirdly, the works that dealt with habitat from a cultural perspective generally focused on cultural groups studied in isolation. Those works that dealt with habitat in relation to its improvement or to its material aspects, instead, were generally compendiums on various cultures. This connection also appears to be related to the discipline of the authors. While most anthropological and geographical studies focused on very specific scales of research, compendiums on the habitats of several cultures seemed more convenient in the discipline of architecture. In fact, the first studies by architects were commissioned by specific institutions with the clear objective of covering the entire country at a moment, the 1970s, when Burkina Faso had already been a nation for years. However, it is worth asking whether a research method closer to the fields of anthropology and geography and focused on specific areas could have provided more details on aspects indirectly related to architecture. This was the case of multidisciplinary teams, who provided a more detailed description of habitat, also thanks to high-quality graphic representations [34,76,78,89,90]. Regarding the object of study, recent research on habitat improvement and, especially, on the use of local building materials, do not include cultural distinctions as they are mainly focused on the urban environment at the national level.

Finally, it is worth noting the mentioned aspiration of local and foreign institutions to ground development in the identity traits of local populations, as well as the significant efforts in documenting built vernacular heritage as a result of this interest. It could be argued then, that research has had a positive impact on the conservation of certain cultural sites, on the design of facilities based on local building practices and on the progressive awareness towards an environmental, social, and culturally sustainable construction. Being mainly addressed to the academic and institutional world, however, the influence of these studies may have been limited on the perception of vernacular architecture by most of the population. Even so, some publications report not only changes in habitat, but also continuities [102,103,131,133,134].

The divergence between changes in vernacular architecture introduced by the inhabitants, and the academic interest in its preservation may point to a slight separation between research and the real agents of construction who are precisely the main holders of the knowledge gathered. In this sense, how to restore the values of vernacular heritage to society is a topical issue [21]. It is also possible that this divergence between change and conservation may be due to a sometimes static approach on a reality that is, in fact, changeable. This literature review has identified a few works that recorded architectural transfers between local cultures in contact [28,40,83]. Changes in the society since the beginning of the 20th century would have intensified and diversified the common practice of home improvement. Whether these transformations distance architecture from its adaptation to the environment, increase its vulnerability or break with cultural heritage, and how to avoid this risk with a practical approach and in a context of change, are the most recent research questions on vernacular architecture in Burkina Faso [130,134].

To conclude, the foreign gaze directed at the cultures of Burkina Faso predominates in the literature, which bears witness to the great admiration that their built environment has awakened. A discussion could be prompted on the portrayal of this architecture and how difficult it is for foreigners to understand realities external to the own cultural framework. Furthermore, the different points of view stemming from the researchers’ vision of vernacular architecture and the inhabitants’ perspective of their own dwellings in any context could also be considered [22]. For whom should the benefits of traditional architecture be preserved?
Vernacular architecture is the result of centuries of popular experience on the best use of local resources. It is also an object-testimony of memories and traditions. Change is inevitable and necessary, but the common link between people, their architecture and the environment, a relationship detected and admired by national or foreign researchers in any context, is also beneficial and enriching. Re-establishing and communicating this natural link must therefore continue to guide most efforts.

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**Notes**

1. CRAterre (Centre international de la construction en terre), set up in 1979, is currently one of the two teams of the AE&CC (Architecture, Environnement & Cultures constructive) Research Unit at ENSAG (École nationale supérieure d’architecture de Grenoble) of Université Grenoble Alpes.
2. A total of 78% of the studies were conducted exclusively by foreign researchers.
3. The existing documentation on Burkina Faso in this Documentation Centre is due to the experience of work and participation of the CRAterre team in numerous field projects in Burkina Faso over the last 30 years. This team continues to assist several local organisations (with YAAM Solidarité as main partner) in their efforts to improve the living conditions of the population in relation to habitat by taking into account the strengths and weaknesses of the local building cultures.
4. This expression is used here literally but also in reference to Valentine-Yves Mudimbe’s idea in *The Invention of Africa: Gnosis, Philosophy and the Order of Knowledge*. The “Colonial Library” expresses the accumulation of knowledge about Africa by the West, especially during the colonial period, and the creation, with this knowledge, of a representation or construct of what Africa is by outsiders. This image was the result of a static view of the continent’s populations and was grounded in the expression of difference, from the European perspective. This idea would have set the framework for the subsequent studies, so it could be discussed whether the title of this section could also cover the following periods. This could be especially debated in relation to the risk of defending an image of traditional habitat oblivious to the impacts of globalisation and modernisation affecting all contexts.
5. References focusing on the history and political organisation of these cultures, which were also published during this and subsequent periods, have not been included in the study.
6. The UNDP (United Nations Development Programme) was created in 1965.
7. In 1975, the urbanisation rate in the country was 6.35%, rising to 12.33% in 1985. This growth was mainly concentrated in Ouagadougou and Bobo Dioulasso.
8. The first Terra conference was held in 1972, and CRAterre was created in 1979.
9. The Africa 2009 programme, launched in 1998, was a partnership of African cultural heritage organizations, the UNESCO World Heritage Centre, ICCROM and CRAterre to enable the national institutions to manage and conserve immovable heritage places in sub-Saharan Africa by 2009.

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