

RULES FOR THE BUILT ENVIRONMENT IN 19TH CENTURY NORTHERN NIGERIA

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In the early years of the 19th century, Uthman dan Fodio and his supporters, including his brother Abdallah and son Mohammad Bello, unified vast territories, including what is now northern Nigeria, into an Islamic state known as the Sokoto Caliphate. During this period, a great deal of scholarship on Islamic law was revived and written by Uthman, his brother and son, and other local scholars. Imbedded in this literature is material relating to policies and rules that were followed in decision making and affected various levels of the built environment. These include policies for the establishment of new settlements and numerous rules relating to the processes of change and growth within the fabric of new settlements and established cities. This study documents the results of the analysis of this scholarship, and it is illustrated by examples from the traditional city of Zaria.

INTRODUCTION

A number of scholars have written about the Sokoto Caliphate, generally recognized as commencing in 1808 (with the successes of the *Jihad* of Uthman dan Fodio) and ending at the hands of the British colonists in 1903 (see Hunwick, 1995; Johnston, 1967; Kani and Gandhi, 1990; Last, 1967; Smith, 1960; Sulaiman, 1987; Usman, 1979).

Although scholars interested in art history and architecture have produced studies of this period (see Bourdier and Minh-ha, 1996; Moughtin, 1985; Prussin, 1986; Schwerdtfeger, 1982), none have addressed the underlying rationale, rules, and mechanisms for decision making that shaped the cities built during this period or previously existing cities that were affected by rules reaffirmed during the 19th century. The purpose of this study is to articulate the underlying rules that were followed in the processes of decision making, which determined the layout and organization of towns and cities. To discover those rules with accuracy, we have studied the relevant manuscripts written at the outset of this period by the *Fodiawa* trio — Shehu Uthman, his brother Abdallah (known in the region as Abdullahi), and son Muhammad Bello — and, subsequently, by other scholars.¹

The writings of the *Fodiawa* trio are rooted in the works of earlier Muslim scholars from North Africa and the Middle East. Our consultation of those works clarified the intentions of the trio, namely, to revive the *Shari'a* (Islamic law) and to establish a society that would be governed accordingly. Uthman's teachers, his family, and others who followed him were members of the Maliki *madhhab* (school of law). They affirmed their respect for the Quran and *Sunnah* of the Prophet (i.e., the Prophet's sayings and deeds), for the opinions and scholarship of the four *Imams*, and for the precedents set by the four righteous *caliphs*.² Whenever appropriate and necessary, they consulted the opinions of scholars from other schools of law to clarify aspects of certain rulings.

The study consists of four parts and a conclusion. Its purpose is to achieve the following:

- (1) understand the mindset of the founding fathers of the Sokoto Caliphate as it related to issues affecting the built environment, particularly that of towns and cities;
- (2) elucidate the specific issues affecting urban development and the control of change in the built environment;
- (3) illustrate the material by studying a city that flourished during the Sokoto Caliphate; and
- (4) discuss the theoretical implications of the study and point the way for further research.

URBANIZATION: RELATIONSHIP WITH PEOPLE LIVING OUTSIDE CITIES AND VILLAGES (PRIMARILY NOMADS), THE ROLE OF *RIBATS* (FORTIFIED SETTLEMENTS), AND THE LAND TENURE SYSTEM

Shortly before the year 1230 Hijri/1815 C.E., Muhammad al-Jailani asked Muhammad Bello for advice regarding the fact that he travels a great deal, is not settled, and therefore is unable to gather his community. Bello responded by writing the treatise *Jawab shafi' wa-khitab minna kafin*,³ in which he explained that bedouin, who know only a nomadic lifestyle, are not expected to settle down and that people who live in villages and cities are not expected to revert to the bedouin lifestyle. In general the Prophet encouraged people to live in villages and cities, except when political necessity, or *fitna*, makes it desirable to escape the city.⁴ Even five households can pray together as a *jama'ah* (group); thus, living in a village is better than living as a bedouin, and living in a city is better than living in a village.⁵ This relationship is reinforced by what the *Fuqaha* (Muslim jurists) have said about finding a *laqit* (abandoned child) — that it is permissible to transfer him/her from the countryside to a village or from a village to a city but not the reverse.⁶

However, the Prophet permitted the city or village dweller to live in the countryside for two months during a year, and he said that those who live in the countryside longer than that must be viewed as

A'rabi (nomad).⁷ Those who flee the city to escape *fitna* should not be viewed as reverting to nomadism, but it is preferable to stay on in the city to try to change or eliminate the *fitna*.⁸ Alternatively, it is sometimes necessary for bedouin to reside in villages or cities if these are located near disputed borders and their assistance is needed to defend Muslim territories, as was the case of Basra, Kufa, Damascus, and Fustat during the reign of the Caliph Umar (r. 13-23/634-644).⁹

Building a defensive wall or moat is mandatory if the community and its leaders decide that it is needed. The example for this was set by the Prophet in Medina.¹⁰ Bello cites other examples mentioned by Qadi Iyad and al-Maghili.¹¹ He also cites *al-Miyar* by al-Wansharisi, who lists five conditions that make it obligatory for residents to be directly involved in defending their town or city when there are no resources available in the *Bayt al-Mal* (treasury).¹² Bello indicates that this obligation is based on the principle that "harm must not be alleviated by an equal or greater harm, but by a lesser harm." In other words, demanding the direct involvement and assistance of the residents, although burdensome, is a lesser harm than allowing the enemy to enter or threaten the city.¹³ Bello concludes his treatise by saying that he, his father, his uncle, and others have undertaken to build cities and mosques to help strengthen the Islamic community. They have also educated people in the cities on how to conduct themselves as Muslims. In addition, they have assigned various individuals to different posts and responsibilities to manage society's needs.¹⁴ He adds that the affairs of bedouin should be considered by encouraging each tribe to designate a representative who will appoint a teacher and *Imam* for their children. The *Imam* will lead their prayers, teach them matters relating to religious observances, and teach them the proper interaction between members of their society. The bedouin should also be encouraged to raise more camels, horses, and sheep, and less cattle, as this will strengthen their contribution to the defense of Muslim territories. In this connection, Bello cites the Prophet's sayings on the virtues of raising horses.¹⁵

Bello affirms the importance of living in cities and villages. He classified bedouin, who live outside of urban society, as *ra'iya* (people who are under the jurisdiction of the urbanized society in towns or cities). Bello uses the metaphor of the shepherd who is responsible for his sheep and emphasizes the importance of town or city dwellers to spend about two months per year with bedouin.¹⁶ In this treatise Bello summarizes the views of Shehu Uthman and his disciples towards urbanization, urbanized society, and its relationship with bedouin living in the countryside, and he establishes the importance of cities and settlements for the success of *jihad*.¹⁷

In another treatise entitled *Kitab al-Ribat wa al-Hirasa* (the book on *Ribats* and guarding), Muhammad Bello addressed the importance of establishing *ribats* (fortified settlements for defensive purposes) located at or near the territorial boundaries of the Sokoto Caliphate. This is primarily a work of religious ethics and obligations in which the author explains the religious virtues associated with establishing and guarding *ribats*.¹⁸

To further understand the mindset and related concepts of urbanization in *Hausa* societies, we refer the reader to two recent studies published in the mid-1970s. Both authors analyze *Hausa* linguistic terms to develop their findings (see Dalby, 1975; Yusuf, 1974).¹⁹

We now turn to the land tenure system that was prevalent during the Sokoto Caliphate in the 19th century. In a manuscript entitled *Ta'lim al-radi fi asbab al-ikhtisas bi-mawat al-aradi*,²⁰ Abdallah Fodio delineates a number of mechanisms that affected the process of urbanization and patterns of land use. The first is *iqta*, the allocation of land to an individual or group by the *Imam*, the ruler, or by his agent. Abdallah specifies five categories of land whose allocation is controlled by the mechanism of *iqta*.²¹ The second important mechanism of urbanization is *ihya al-mawat*, literally revivification of dead land, i.e., land that is not owned or utilized by anybody, as evidenced by the fact that there is no trace of a structure, markers, or signs of cultivation on it.

The status of dead land relative to its proximity to built-up areas of the city or settlement has been discussed extensively by Muslim jurists. The predominant view is that if the dead land is very close to built-up areas, then the permission of the *Imam* (religious head of the community who leads the

Friday noon prayers) is required before reviving it. Otherwise, an individual can claim it for revivification. The first step is usually the delineation of the boundary with markers. Abdallah's opinion about what constitutes "near" or "far" is conditioned by the *harim*, the area surrounding a town, plot of land, or well (discussed below). If the land in question is within the *harim* of the built-up area, then the permission of the *Imam* is required; otherwise, no permission is needed. Abdallah also stipulates that if a structure or cultivation on revived land is neglected and falls into ruin, then another person can take over the land and revive it again. Abdallah outlines specific conditions for how ownership of a revived plot of land is established.²²

The third mechanism is *harim* (the zone surrounding a property or structure), which is necessary for its function, such as pathways and roads, so that other people are prohibited from obstructing or building upon it. The *harim* also refers to a space surrounding a well that protects it from damage, maintains the well's integrity, and prevents the pollution of its water. *Harim* is effective at various levels of the built and natural environments, such as the village or city as a whole, alignment on both sides of rivers, and forests. At the neighborhood level, the term *harim* signifies the area surrounding clusters of compounds, roads and pathways between them, and access to neighborhood farms.²³

Abdallah's fourth mechanism is sources of water. He identifies each source and specifies conditions for its utilization: public, such as rivers; private, such as wells; and water that can be collected from rainwater.²⁴ A fifth mechanism relates to the availability of areas for pasture in public and private lands and the conditions for their utilization.²⁵

FRAMEWORK OF *QAWA'ID FIQHIYA* (*FIQH* PRINCIPLES): UNDERLYING THE RATIONALE FOR THE SCOPE OF THE *AHKAM* (RULES) THAT WERE DEVELOPED BY MUSLIM SCHOLARS

A survey of the literature by the *Fodiawa* trio and others who followed them demonstrates the importance of *Qawa'id Fiqhiya* (*Fiqh* principles) in establishing the basis and rationale for the suggestions and prescriptions that they have advocated for the Muslim community, including rules addressing various aspects of the built environment.

Here we briefly explain the history of the development of this branch of the *fiqh* sciences. We will then establish the framework of a hierarchy of *Qawa'id* (principles), pointing out which of the *Fodiawa* trio and their successors cited particular *qawa'id*. This method of analysis will establish the rationale for the principles as they were understood by the leaders and *fugaha* (Muslim jurists) of the Sokoto Caliphate.

The *fugaha* generally define the term *Qa'ida* (principle) as a "general ruling that applies to its particulars," or "a ruling addressing a general situation but that also applies to the particulars of that situation," or "an overarching rule that applies to the various levels of a situation or a problem."²⁶ These *Qawa'id* were not conceived and written down at a specific time by known individuals; rather, they evolved over time as the science of *Fiqh* was developing. With the exception of *Qawa'id* that can be attributed to a Qur'anic verse or a saying of the Prophet, these principles cannot be attributed to specific authors unless a link can be established to a specific text.²⁷

Hanafi jurists were the first to establish the parameters for formulating *Qawa'id*. Qarafi (d. 684/1285) indicates that in earlier periods the *Qawa'id* were known as *Usul*.²⁸ Ibn Nujaym, in the introduction to his *al-Ashbah wa al-Naza'ir*, mentions that Abu Tahir al-Dabbas, who lived in the late third century/ninth century, was the first scholar to compile *Qawa'id*, of which he identified 17.²⁹ Five of those became the central *Qawa'id* for establishing *Shari'a* rulings.³⁰ Figure 1 displays the original Arabic and English translations.

The Shafi'i, Hanbali, Maliki, and Shi'i schools of law followed the Hanafi school in adopting and developing the science of *Qawa'id*.³¹ All schools of law agree that these five *Qawa'id* constitute a

1- Harm should be eliminated. (A2)

- Do not harm others, and others should not harm you. (U, A1)
- It is mandatory to commit to the lesser of two harms. (M)
- Harm must not be alleviated by an equal or greater harm, but by a lesser harm. (A2)
- Repulsion of evil should be addressed before inviting goodness. (A3, M, I)
- If two evils are confronted, one affects religious matters and the other is worldly in nature, the priority should be to repulse the former. (A3)
- If two evils are confronted, one is greater than the other, the priority should be to repulse the former. (A3, I)
- Sometimes a prohibition might be allowed to avoid a greater one. (M)
- Repulsing evil for ushering goodness is encouraged. (M)

١- الضرر يزال

- لا ضرر ولا ضرار
- وجوب إرتكاب أخف الضررين
- الضرر لا يزال بضرر أشد منه أو يساويه وقيام لزم إرتكاب أخف الضررين
- دور المفسد مقدم على جلب المصالح
- إن تعارضت مفسدتان إحداهما دينية والأخرى دنيوية فدرء المفسدة الدينية أولى
- إذا تعارضت مفسدتان إحداهما أكبر من الأخرى فدرء المفسدة الكبرى أولى
- قد يباح الممنوع لتوقع ما هو أعظم منه
- يسوغ لدفع مفسدة تجلب مصلحة

2- Affairs are determined by their intent. (M)

- Deeds are judged by their intentions. (A1)
- Concealment of defects is deception, and that is prohibited. (I)

٢- الأمور بمقاصدها

- الأعمال بالنيات
- كتمان العيوب غش محرم

3- Certitude cannot be dismissed by doubt.

- The basis is for allowance. (M)
- A doubtful condition cannot be used for assigning responsibility. (I)

٣- اليقين لا يزول بالشك

- ما أصله الإباحة
- الشك في الشرط مانع من ترتيب المشروط عليه

4- Hardship ushers relief. (M)

- After confinement there is accommodation. (A1, M)
- To avoid difficulties, the Shari'a allows many pressing necessities. (A1)

٤- المشقة تجلب التيسير

- ما ضاق شيء إلا اتسع
- أباح الشرع كثيراً من الضرورات لنفي الحرج

5- Custom has the weight of law.

- Convention has ascendancy. (M)
- Rules differ in response to different conditions and times. (A1)
- Each era ushers in new conditions, which necessitates its own requirements. (M)
- Whatever new changes occur in customs should be recognized, and whatever is abandoned should not be recognized. (M)
- Rules based on a custom change with changes in that custom. (I)

٥- العادة محكمة

- العادة غلبة
- تختلف الأحكام باختلاف الأحوال والأزمان
- لكل زمان أحوال تتجدد وإقتضاهات تتعين
- مهما تجدد في العرف أعتبر ومهما سقط انتقض
- الحكم بالعادة يتغير بتغير العادة

FIGURE 1. *Qawa'id Fiqhiya* in their original Arabic and English translations grouped by the five central *Qawa'id*. These are cited in the treatises of Uthman dan Fodio, Abdallah Fodio, Muhammad Bello, and Idris b. Khalid b. Muhammad. The author citing each *Qa'ida* is identified thus: Uthman (U), Abdallah (A), followed by the number of his treatise), Muhammad (M), and Idris (I).

framework under which other *Qawa'id* fit, covering most issues addressed by the *Fiqh* (see al-Sadlan, 1999). The central *Qa'ida*, *al-darar yuzal* (harm should be eliminated), is the most influential, and it is applied to issues relating to decisions affecting the built environment. The five central *Qawa'id* and their related sub-*Qawa'id* should be viewed as a symbiotic system in which a concept or decision related to any one of them is affected by, or affects, the others (see Heinrichs, 2002).

The *Fodiawas* viewed the articulation of judgments and rules derived from the *Qawa'id* as part of *Siyasa al-Shar'iya* (governance in accordance with the *Shari'a*). They were particularly influenced by the work of a Maliki scholar from Medina, Ibn Farhun (d. 799/1397), author of *Tabsirat al-Hukkam*.³² The use of *Siyasa al-Shar'iya* as a distinct doctrine for organizing the content of legal scholarship is especially evident in Abdallah Fodio's treatise, *Dia al-Hukkam*.³³ The treatise is divided into five topics. The sequence of the first four topics was influenced by Uthman dan Fodio's well-known declaration of policies in his *Wathiqat ahl al-Sudan* (see Bivar, 1961). Abdallah added a fifth topic devoted to *Siyasa al-Shar'iya*, the last section of which specifically addresses issues relating to the prevention of damages to neighbors and others.

Figure 1 lists the specific *Qawa'id* that affect the formulation of policy and rules relating to the management of the built environment, which are cited by the *Fodiawa* trio and by Idris b. Khaled b. Muhammad in their respective treatises. They are arranged by the five central *Qawa'id*. The author and title of his treatise, from which the *Qawa'id* are taken, are indicated below:

- Uthman dan Fodio (d. 1232/1817)
— Treatise: *Kitab Tanbih al-Hukkam*³⁴

- Abdallah Fodio (d. 1245/1829)
 - Treatise 1: *Diya al-hukkam fi-ma lahum wa-alayhim min al-ahkam*³⁵
 - Treatise 2: *Jawab al-sa'il fi bina' al-husn*³⁶
 - Treatise 3: *Diya al-Siyasat wa fatawi al-nawazil*³⁷
- Muhammad Bello (d. 1253/1837)
 - Treatise: *Kitab al-tahrir fi qawa'id al-tabsir lil-siyasat*³⁸
- Idris bin Khalid bin Muhammad (active in 1246/1830); he was *Qadi* of Gwandu during the reign of Ibrahim Khalil bin Abdallah Fodio (d. 1276/1860).
 - Treatise: *Jami ahammu masa'il al-ahkam fi qat'i al-khisam mimma ishtaddat-ilayhi hajat al-hukkam*.³⁹ Idris's treatise is the most comprehensive of all and, beyond the works of the *Fodiawa* trio, is a good example of a source that contains *Qawa'id Fiqhiya* of relevance to rule formulation for the management of the built environment.

There are also two other scholars who wrote short treatises and who have specified *Qawa'id* relating to Group 1, *al-darar yuzal* (harm should be eliminated): Abdul Qadir b. al-Mustafa (d. 1280/1864), in his treatise *Nubdhat bin Mustafa min kutub al-a'imma* (see Hunwick, 1995:221); and Ibn Ishaq b. Umar (d. 1303/1885), in his *Ajwiba li-ba'd al-as'ila* (see Hunwick, 1995:237).

This survey of specific *Qawa'id* touched upon and/or discussed by the *Fodiawa* trio and Idris bin Khalid are included in this study to demonstrate that the basis of the rules, which were developed for various conditions related to change and growth in the built environment, were derived from or influenced by an understanding of the intent of the *Qawa'id* as a system of overarching meta-principles affecting all aspects of societal activities, including construction and particularly the management of the built environment at the neighborhood level. It is beyond the scope of this study to demonstrate how each of the rules, discussed in the following section, was actually derived from the *Qawa'id* as a cumulative body of knowledge or from a specific *Qa'ida*. This requires a separate study with an emphasis on detailed aspects of Islamic law.

ISSUES THAT SCHOLARS ADDRESSED WHILE DEVELOPING RULES FOR DECISION MAKING RELATING TO THE MANAGEMENT OF CHANGE AND GROWTH IN THE BUILT ENVIRONMENT

After analyzing the treatises written in 19th century northern Nigeria and the characteristics of the morphology of cities in that region, we determined that the rules developed for managing the processes of growth and change in the built environment fit under one or more of the issues in the following framework:

- (1) *Harim*: zone surrounding a city, town, property, or structure, which is necessary for its viability and function.
- (2) *Ihya al-Mawat*: revivification of dead land, i.e., land not owned or utilized.
- (3) *Haqq al-Irtifaq*: rights of abutting properties and rights related to access and servitude.
- (4) *al-Turuq al-Amma wa Haqquha*: rights of public streets.
- (5) *al-Marafiq wa Man' al-Darar*: preventing damages to adjacent structures and facilities.
- (6) *al-Daman wa al-Mas'uliyya Inda Ihdath al-Darar*: liability and the responsibility for creating damage(s).

The following are the rules for each of the above six categories:

- (1) Rules for the *Harim*: see note 23.
- (2) *Ihya al-Mawat*: Abdallah Fodio, in his treatise *Ta'lim al-Radi*, stipulates the following rules for revivification of dead land:
 - (i) If land is within the *Harim* of a built-up area, it can be revived with the permission of the

Imam (ruler) or his representative. If it is outside of the *Harim* of a built-up area, there is no need for permission.

- (ii) Those who revive dead land acquire ownership rights to it. However, there are various rules and conditions regarding the loss of ownership of a revived land, including that another reviver of the same land may claim ownership when the first reviver allows the land in question to revert to its previous condition. Its location and distance from the built-up area are factors that affect ownership rights when it is allowed to revert to its original condition by its initial reviver.
- (iii) *Ihya* is deemed legitimate when any one or more of the conditions listed in note 22 occurs.
- (iv) *Tahjir* signifies the boundary delimitation of a land selected for *Ihya* by using stone markers. Some scholars, such as Ibn al-Qasim, do not recognize this act as *Ihya*. Others, like Ashhab, accept *Tahjir* as an indicator of intention to revive the chosen land within a short period of time.
- (v) Grazing and digging a well for watering flocks is not recognized as an act of *Ihya*.
- (3) *Haqq al-Irtifaq*: This concerns the right to abut a neighbor's property and the right of servitude, i.e., a right that grants access through another's property. One of the earlier references to this right is found in Khalil's *Mukhtasar*, where he indicates that the owner of a structure should allow his neighbor to use the structure for inserting beams in his wall and should also give him other rights, such as access through his property or the sharing of a water source (see the section on *al-Shirka* in al-Maliki, 1995:128). Ibn Salmun al-Kinani (d. 741/1340), who lived in Granada one generation before Khalil, also explains the right of *Irtifaq* (see Ibn Farhun, 1884). He explains that such a right may be given in perpetuity or for a limited period of time. In either case, a contract or agreement should be written. Ibn Asim (d. 829/1426) of Granada also discusses the right of *Irtifaq*.⁴⁰

Abd al-Qadir b. al-Mustafa from the Sokoto Caliphate, who was married to Muhammad Bello's daughter, Khadija, quoted his father-in-law on the issue of houses abutting a public right-of-way. Bello's views, as quoted by Abd al-Qadir, were that such streets cannot be infringed upon by the owners of abutting houses and must always be kept clean and accessible for the public. Bello uses the term *Irtifaq*, i.e., the public has the right of servitude or access on these public streets.⁴¹

- (4) *al-Turuq al-Amma wa Haqquha*: Generally the public has the right of unimpeded access on public streets.⁴² Khalil b. Ishaq stipulates the following rights regarding public streets:
 - (i) It is not permissible to build within the public right-of-way, whether or not such construction creates impediments and damage to passersby. Any infringement of this type must be demolished.
 - (ii) Vendors who use the sides of streets to display their goods are allowed to do so if usage of such spaces is temporary and does not impinge upon the traffic of passersby. The use of a particular space on the side of a public street is determined by the person that occupies that space first, by analogy to a person who occupies a space within the confines of a mosque for the purposes of study or teaching.
 - (iii) On a public street one neighbor cannot open a shop or a stable opposite the front door of another, as this would create a nuisance and the potential for invading the privacy of the neighbor on the other side of the street.
 - (iv) It is permissible to build a projection, or a *Sabat* (room bridging a street), as long as it does not create harm to the passerby. A person who owns two buildings opposite each other across the street may build a *Sabat* between them.⁴³

Stipulations (i) and (iii) are also mentioned by Idris b. Khalid b. Muhammad, *Qadi* of Gwandu, in his *Kitab Jami Ahammu Masa'il al-Ahkam fi Qat'i al-Khisam*, completed on August 20, 1836 (the author refers primarily to the works of the *Fodiawa* trio: Uthman, Abdallah, and Muhammad Bello). In his *Diya al-Hukkam*, written in 1221/1806 while he was visiting Kano, Abdallah Fodio clarifies a number of issues that might cause problems in public streets, e.g., digging a well in a public street is not

allowed, although it is permissible to direct rain gutters onto a public street. Khalil's stipulation (iii) above is also affirmed by Abdallah Fodio. Other stipulations related directly or indirectly to public streets are also documented.⁴⁴

- (5) *al-Marafiq wa Man' al-Darar*: This rule concerns preventing damage to adjacent structures and facilities. Ibn Salmun of Granada (d. 741/1340) and, two generations later, Ibn Farhun of Medina (d. 799/1397) both discussed the numerous conditions and situations that may arise between adjacent and opposite (across the street) facilities, i.e., damages of one to the other and how those potential and actualized damages may be prevented or eliminated.⁴⁵

Abdallah Fodio devotes the 13th section of Part 5 (*al-Siyasat al-Shari'ya*) of his *Diya al-Hukkam* to the topic of *Nafi al-darar an al-jiran wa ghayrihum* (prevention of damages to neighbors and others). Idris b. Khalid b. Muhammad's book, *Jami ahammu ...* (cited earlier), which was completed in 1836, also includes a section on *al-Marafiq wa Man' al-Darar* (preventing damages to adjacent facilities). This is followed by a shorter section on *Man ahdathah dararan umira bi-qat'ih* (he who causes damage(s) is ordered to eliminate it).

The following are some of the issues applicable to the morphology of compounds as the nucleus of urban formation in cities of the Sokoto Caliphate. The primary justification for rules in this area, invoked by various scholars, including those from the Sokoto Caliphate, is the *hadith*: *La Darar wa-la Dirar*, which is the leading *Qa'ida* of the first category of *Qawa'id Fiqhiya* (see Part 2 and Figure 1). Abdallah Fodio's interpretation of this *hadith* follows that of al-Matiti (d. 570/1174): *Darar* is when one neighbor harms another, and *Dirar* is when both neighbors harm each other.⁴⁶ In *Diya al-Hukkam*, Abdallah Fodio provides the following list of phenomena that may create harm:

- Smoke from baths and bakeries.
- Dust from threshing wheat (*Ghubar al-Anadir*).
- Foul smell from a tanner's workshop (*Natn al-Dabbaghin*).
- Building a stable near a neighbor.
- Building a place for a grinding device, or a blacksmith workshop near a neighbor.
- An act considered to be damaging is usually viewed as being *hadith* (recent), unless it is proven to be *qadim* (old).
- Opening a window that overlooks a neighbor's private domain.
- Building a gargoyle that releases water onto a neighbor's property is not allowed even if it causes no harm, unless the neighbor grants permission.
- A door constructed in a house or structure on a public street must not face another door across the street but must be set back from it to prevent a direct visual corridor. In a cul-de-sac owned by the people who have access to it, one is not allowed to build a projection or open a new door without the consensus of all the owners.
- It is not permissible to plaster a wall that belongs to an adjacent neighbor, from the side of the other neighbor's property.
- Maintenance of a sewer/wastewater channel is based on the principle that each user is responsible for the portion that he uses, assisted by the neighbor(s) upstream using the channel, e.g., if the channel serves four houses, then the owner of the first house cleans his portion of the channel and helps the next neighbor clean, both help the third neighbor, and so on.
- If a person owns trees on someone else's land, access must always be allowed. The owner of the land can demand that access be the shortest and most direct route to the location of the trees.
- The owner of private property cannot change the location of a path that passes through the property and is used by the public if the path has been there since the owner of the land purchased or inherited it. The owner may seek to obtain the permission of the *Imam* who, after examining the location, can determine if realigning the path is possible and beneficial to its owner and the public who use it. If the owner realigns it without the *Imam*'s permission, the *Imam*, after examining the change, may allow it or may order that it be restored to its original alignment. However, if the path is used by only a specific number of individuals, then those individuals may grant permission to the property owner to realign it.⁴⁷

Idris b. Khalid b. Muhammad, who was active in the 1830s in Gwandu, mentioned other issues relating to the prevention of damages:

- How to determine ownership and usage rights regarding a wall between adjacent neighbors, e.g., what happens if a wall surrounding a jointly owned orchard falls into ruin and one of the partners wants to rebuild it but the other refuses?
- If a jointly owned *Rahi* (mill) falls into ruin, and one of the partners rebuilds it after the other refused, how should the revenue of the mill be shared?
- Who is responsible for a ceiling and its maintenance in a two- or three-story structure if a different party owns each level? This condition does not apply widely in towns of the Sokoto Caliphate.

Otherwise, Idris repeats information Abdallah Fodio included in his treatise. At the outset of his book, Idris lists his sources, citing the *Fodiawa* trio, Uthman, Abdallah, and Muhammad Bello. He also cites the other scholars and their specific works that he consulted.⁴⁸

Later scholars from the Sokoto Caliphate mention cases relating to the management of the built environment, mostly repetitions of issues listed above. They include the treatise *Nubdha min kutub al-a'imma* written by Abd al-Qadir b. al-Mustafa (d. 1280/1864), the son-in-law of Muhammad Bello; the treatise *Ajwiba li-Askia fi ma ashkala min al-tullab* (completed in 1285/1868) written by Uthman b. Ishaq b. Umar (d. after 1303/1885); and two short letters written by Qadi Abdullah b. al-Imam (d. 1321/1903), one to Isma'il b. Muhammad al-Bukhahri, Amir of Kebbi, and the other to Banagha, Chief of Maru.

- (6) *al-Daman wa al-Mas'uliyya inda ihdath al-darar*: The question of how to determine and allocate responsibility for an act creating harm and damages was addressed by scholars in the Sokoto Caliphate. In his *Kitab Tanbih al-Hukkam*, Uthman Fodio discusses the conditions under which responsibility for creating damage is determined. Part 5 (*fi al-Siyasat al-Shar'iya*) of Abdallah Fodio's treatise, *Diya al-Hukkam*, includes numerous references to the context in which responsibility is assigned for an act that has created harm. Section 12 of Part 5, entitled *fi Tadmin al-Sunna' wa Ghayrihum* (responsibility of workers and others), discusses various trades and the circumstances in which certain actions by a worker are determined to be an act of negligence for which the worker is responsible. In his book *Jami Ahammu Masa'il al-Ahkam*, Idris b. Khalid, *Qadi* of Gwandu, refers to responsibility for various deeds and under what conditions the perpetrator has to assume responsibility. He repeats some of the material in Uthman and Abdallah Fodio's works.

In a recent study, Abd al-Jabbar Ahmad Sharara discusses the theoretical and legal premises for actions that create damage and how the allocation of responsibility is determined (see Sharara, 1997:278). He quotes al-Qarafi, a Maliki scholar, who indicates three reasons for allocating responsibility: (i) *al-udwan*, or aggression, such as burning or demolishing; (ii) the result or consequence of an act, such as digging a well in a public street; (iii) the hand of the offender, or the untrustworthy hand, such as usurping someone's rights or property. Also included in this third category is the illegal abrogation of a contract, such as a renter refusing to pay the rental fee.⁴⁹

The essential criterion for allocating responsibility is to determine if damage or harm occurred. The elimination of damage or harm becomes the responsibility of the party whose action created the damage in the first place, e.g., removing any damage that occurs in the public right-of-way of streets and paths. In a recent study, Abd al-Mejid al-Hakim observes that aggression on people's rights takes the form of aggression on a person or on assets and is the underlying basis for the principle, *Inna kulla fi'lin dar yuwajjib al-daman* (a person is liable for his/her act that is damaging to others). He bases this legal stipulation on the Prophet's saying, "*La Darar wa-la Dirar*," as interpreted by the *Fuqaha* (see al-Hakim, as quoted by Sharara, 1997:268).

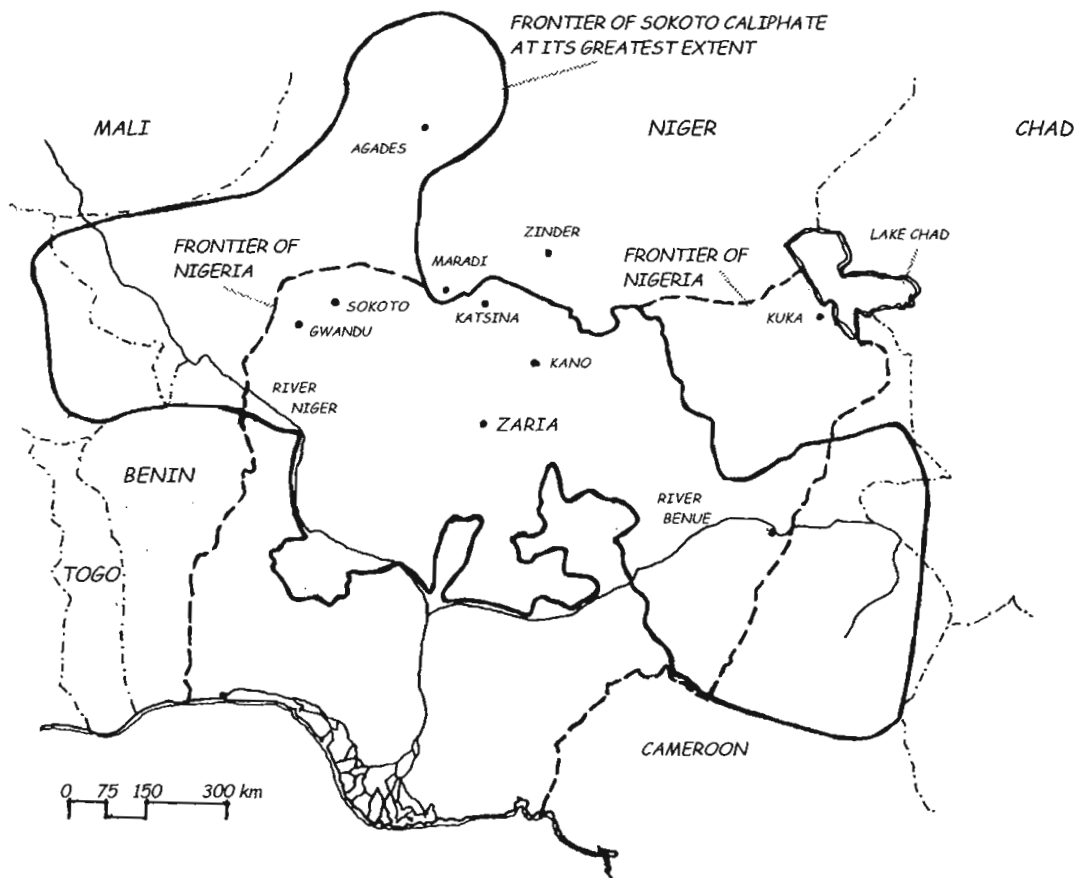


FIGURE 2. Frontier of the Sokoto Caliphate at its greatest extent, relative to the frontiers of Nigeria and adjacent countries. The frontier of the Sokoto Caliphate is based on information in Johnston (1967).

ILLUSTRATIONS FROM ZARIA: THE COMPOUND AND NEIGHBORHOOD CLUSTER — NUCLEI FOR HABITAT AND URBANIZATION

Due to limitations of space, we selected only one city for study: Zaria. There is sufficient information for Zaria from which data and illustrative material can be used. Although it is preferable to study as many samples as possible from different cities, the analysis presented here can be refined by applying it to other locations in future studies.

The old walled town of Zaria was the capital of the traditional Zaria emirate.⁵⁰ Formerly Zazzau or Zegzeg, this historic kingdom is said to date from the 11th century C.E., when King Gunguma founded it as one of the original *Hausa Bakwai* (seven true *Hausa* states). Camel caravans from the northern Sahara came here to trade. Islam was introduced in about 1456, and there were Muslim *Hausa* rulers from the early 16th century C.E. Muhammad I Askia, a well-known leader of the Songhai Empire, conquered Zazzau in 1512. Later in the century, Zazzau's ruler, Queen Amina, enlarged her domain by making numerous conquests. Zaria was probably founded in 1536 and later in the century became the capital of the *Hausa* state of Zazzau. Both the town and state were named after Queen Zaria (late 16th century C.E.), the younger sister and successor of Queen Amina.

In 1219/1804, the Muslim *Hausa* ruler of Zaria pledged allegiance to Uthman dan Fodio, which resulted in a *Fulani* becoming ruler of Zaria in 1223/1808. The emirate of Zaria was created in 1251/

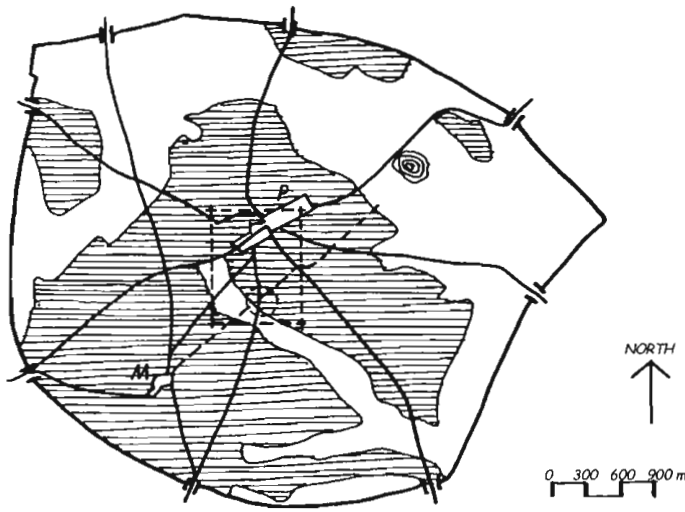


FIGURE 3. The town map of old Zaria, circa 1970, shows primary streets linking the gates of the walled town to the market area on the southwest (M) and the Friday mosque/Emir palace complex to the northeast (P). The map also indicates the location of the study area (circled) and the borders of the air photo in Figure 4. The figure is based on information in Urquhart (1977).

1835, retaining control of Keffi, Nasarawa, Jema'a, and Lapai to the south. A representative of the Sultan at Sokoto and the local emir governed it (see Encyclopedia Britannica, 1998).

The location of Zaria, relative to the frontier of the Sokoto Caliphate in the 19th century and the frontier of the modern state of Nigeria, is shown in Figure 2. The town map of old Zaria (Figure 3), circa 1970, shows primary streets, the built-up area within the walls, and the gates of the city. It also shows the location of the major market, the palace complex, the study area, and the location of the air photo (Figure 4).

The study area is a cluster of 26 compounds, which may be considered a neighborhood with its common spaces and local facilities. It

is located northeast of the market and south of the Emir's palace. The compounds comprising the cluster are grouped around the oldest compound in the cluster, belonging to the Chief *Imam*. Together with the small mosque and square, this forms the focal point of the cluster. The inhabitants of the compounds that make up this cluster were originally the Chief *Imam*'s sons, relatives, and relatives through marriage (see Urbanowicz, 1979).

High walls surround all compounds in *Hausa* walled cities. Their only entrance is a *Zaure*, an entrance hut that leads into the *Kofar Gida* (forecourt). To reach the central and private part of the compound, *Cikin Gida*, one has to pass through a *Shigifa*, or second entrance hut. Normally, the *Shigifa* acts as the transition space between the male and female zones (Figure 5). The area of the *Zaure*, *Kofar Gida*, and adjacent rooms or facilities is the men's zone, and the rest of the compound beyond the *Shigifa* is the zone for the family, women, and service areas. Compounds, on a citywide basis, average 500-600 square meters in area (see Schwerdtfeger, 1972).

A detailed account by Taylor and Webb of the construction process of a compound in Zaria during the early decades of the twentieth century is available in English and *Hausa* (see Taylor and Webb, 1932:169-191). The account clearly demonstrates the involvement of the owner and builder and their mutual cooperation in decision making relating to the planning and layout of the compound. The magnitude of the enterprise depends on the financial resources of the owner. The account provides valuable insight into the building materials used, the stages of the construction process, and the approximate number of days that it took for a variety of construction activities. Schwerdtfeger (1982) describes the responsibilities of the compound head and the allocation of labor between members of the compound in maintaining walls, common rooms, and the construction of a new hut for a newlywed couple. The compound is named after the compound head, who, as the primary decision maker, can take independent action. Dependent or semi-dependent household heads within the compound must acquire approval of the compound head for changes in the compound.

Taylor and Webb (1932) also provide an account on farming. They observe, "If a man wants to make a farm, he chooses a place where there is good soil" This confirms the practice of *Ihya*, i.e., a



FIGURE 4. Air photo taken in 1963 showing the neighborhood cluster study area, located at the bottom of the photo. The neighborhood is linked by primary streets to Zaria's Friday mosque to the north, which is located adjacent and west of the Emir's palace complex. Also clearly visible in the air photo are small to large farm plots scattered between clusters of compounds.

person chooses a suitable plot to farm, and by doing so he practices *Ihya al-Mawat*. The account continues with " ... he thoroughly clears the weeds and cuts down the bushes"

Figures 6A-D, the plan of the study area, show (A) the neighborhood cluster of 26 compounds showing all structures and perimeter walls; (B) the pattern of growth of the cluster due to *Iqta* (land allocation) and *Ihya* (revivification); (C) the *Harim* of the compounds and *Haqq al-Irtifaq* (rights of abutting adjacent neighbors) as it is evident in 11 locations; and (D) the system of male zones comprising *Zaure* (primary entrance huts), *Kofar Gida* (forecourts), and *Shiqifa* (passages) leading to *Cikin Gida* (private areas of the compound), highlighted for all the compounds of the cluster.

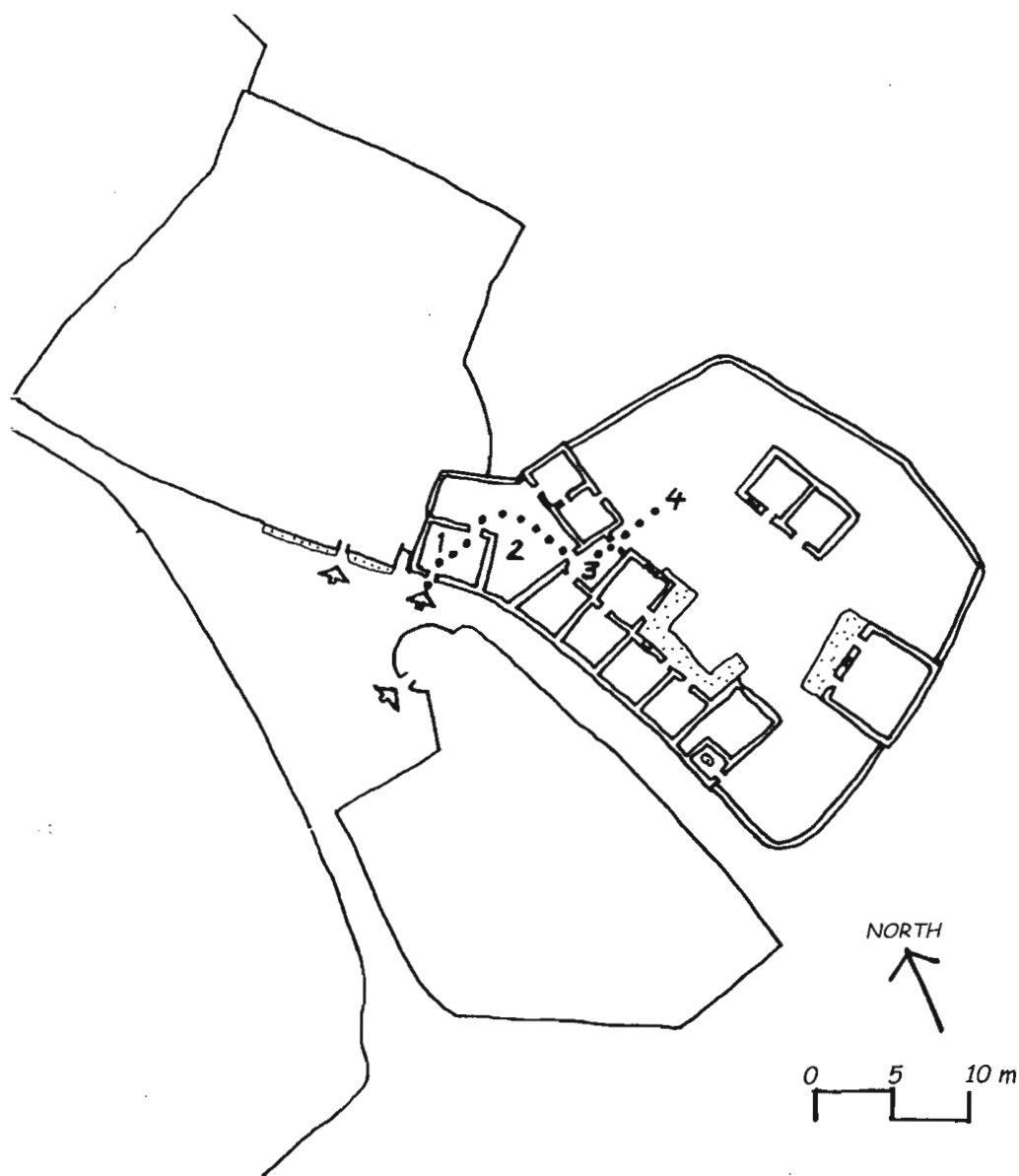


FIGURE 5. One compound located on the eastern edge of the neighborhood cluster study area, showing the route of entry from the street to the private zone of the family: (1) *Zaire* (main entrance hut); (2) *Kofur Gida* (forecourt); (3) *Shiqifa* (second entrance hut/passage), the transition space between the forecourt and the *Cikin Gida*; and (4) *Cikin Gida* (central and private area of the compound). For privacy considerations, entrances to *Zaire* do not face each other. This pattern is especially evident on narrow pathways.

The average size of compounds in Zaria is 620 square meters. On average, two-thirds of the area of the compound is open space, and one-third is built up. The population of a compound ranges between five and 19 inhabitants, with an average of 12 persons per compound. Some of the compounds studied in the late 1960s had as many as 36 persons (see Schwerdtfeger, 1982). Responsibilities within the compound are reflected in behavior and association. For example, all persons who eat together from the same *Tukunya* (pot) dwell together in one part of the compound known as *Sassa* and contribute labor, service, and/or money to the household budget.⁵¹

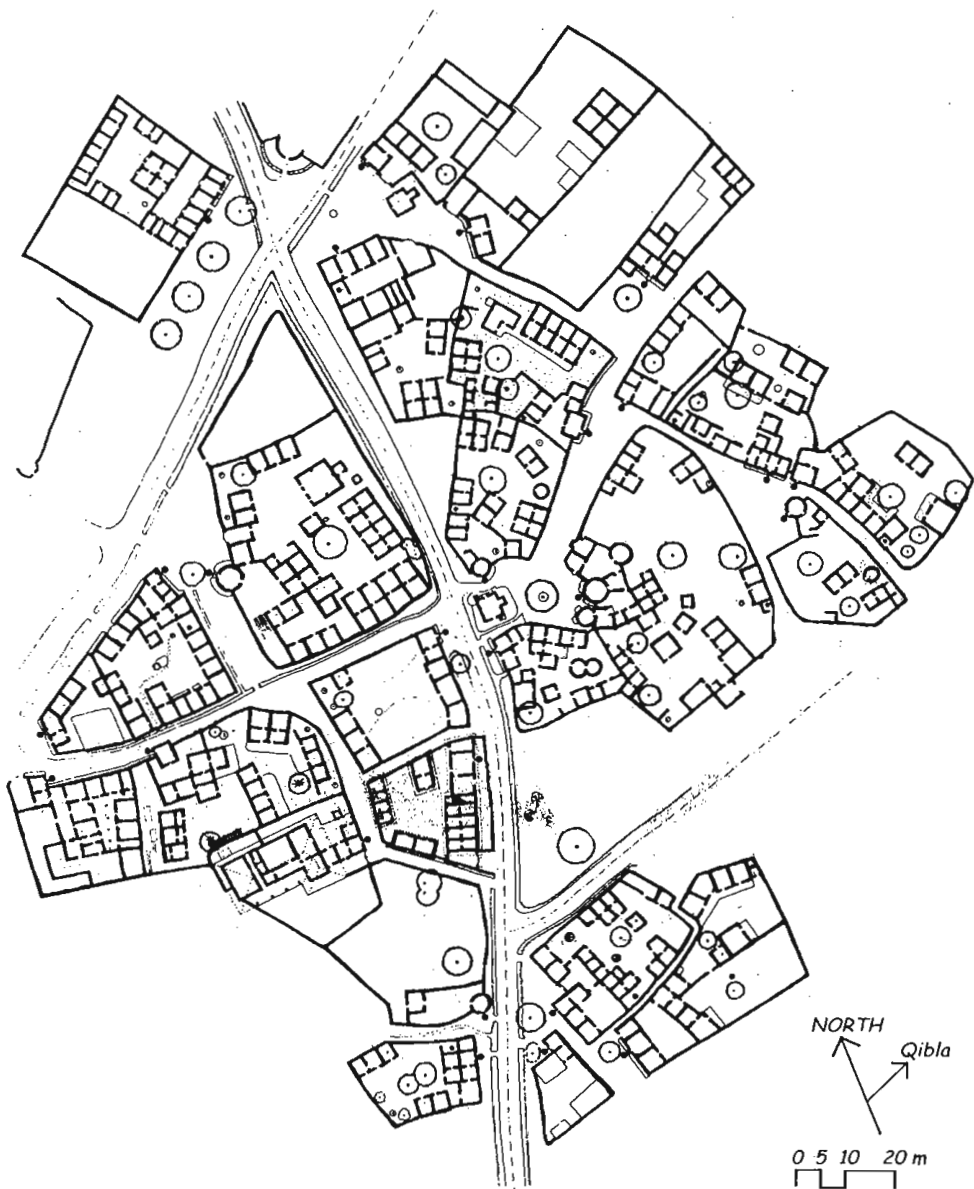


FIGURE 6A. The plan of the study area — a neighborhood cluster of 26 compounds. It shows the configuration of all the structures and perimeter walls of the compounds and the location of mature trees. Entrance to the *Zaure* of each compound is indicated by a black dot. The figure is based on information in Urbanowicz (1979) and an on-site survey by coauthor Zubair Ahmed.

The compound model found in most of the traditional towns in Hausaland has several advantages over the prevailing model of courtyard-clustered buildings in North Africa. The average area of the footprint of houses in Tunis, for example, is about one-third of that in Zaria. In Tunis the average footprint of a house is a square 15 x 15 meters (225 square meters), and in Zaria it is 620 square meters with a variety of configurations. The one-third built-up area of the Zaria compound is approximately the size of the average footprint of a house in Tunis. This distinction has major implications for the size of walled towns in Hausaland compared to those in North Africa (Figure 7).

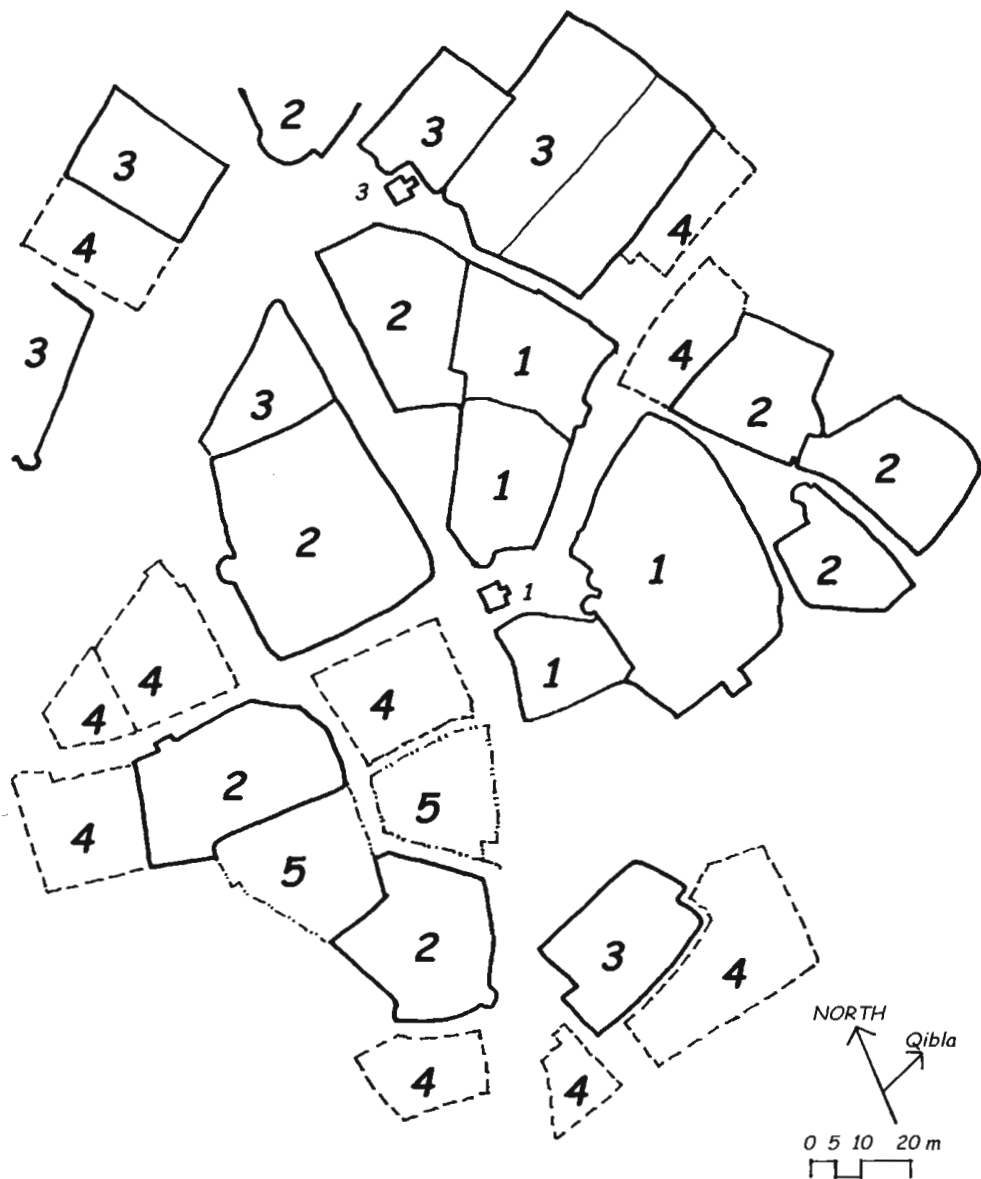


FIGURE 6B. The pattern of growth of the neighborhood cluster due to the mechanisms of *Iqta* (land allocation) and *Ihya* (revivification). The period is from inception through the late 1950s and into the mid-1970s, which is the time the cluster was studied and documented. Those compounds indicated by the numbers 1-3 are shown on maps based on air photos dated 1959, and those indicated by numbers 4 and 5 are based on information from air photos dated 1963 and the surveys undertaken in the mid-1970s.

These are specific advantages of the compound model:

- flexibility and ease of adding new huts or enlarging older huts within the compound;
- more space between huts of various households within the compound is possible, thus reducing the potential for conflicts;
- more open space for all inhabitants, especially space for play areas for children;
- water management can occur within the compound, reducing potential conflicts between neighboring compounds;

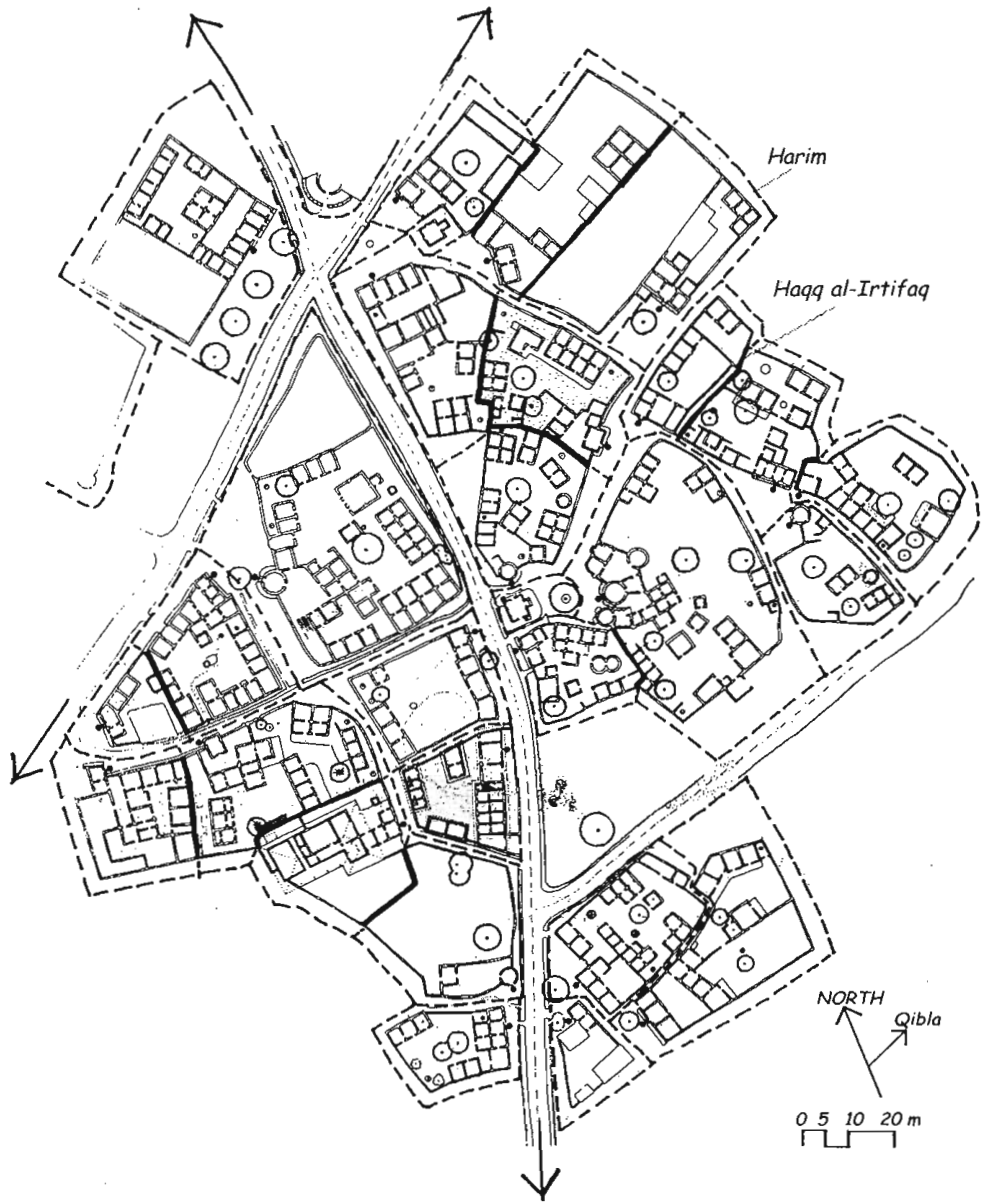


FIGURE 6C. The *Harim* (zone surrounding each compound whose owner is responsible for its use and maintenance) of each compound in the neighborhood cluster is shown by broken lines, and the *Haqq al-Irtifaq* (the right to abut a neighbor's property) is shown by a heavy thick line as it has occurred in 11 locations within the cluster.

- perimeter walls of the compound, which are built first, are relatively stable over long periods of time, contributing to the integrity and stability of the streets and pathways between compounds and within clusters of compounds;
- freedom to experiment with architectural design within the compound without affecting the overall character of the neighborhood; and
- there is no incentive to build higher, thus avoiding many problems associated with increase in building heights, such as overlooking neighboring compounds, obstructing breezes, and creating shadows within a compound and on neighboring compounds.

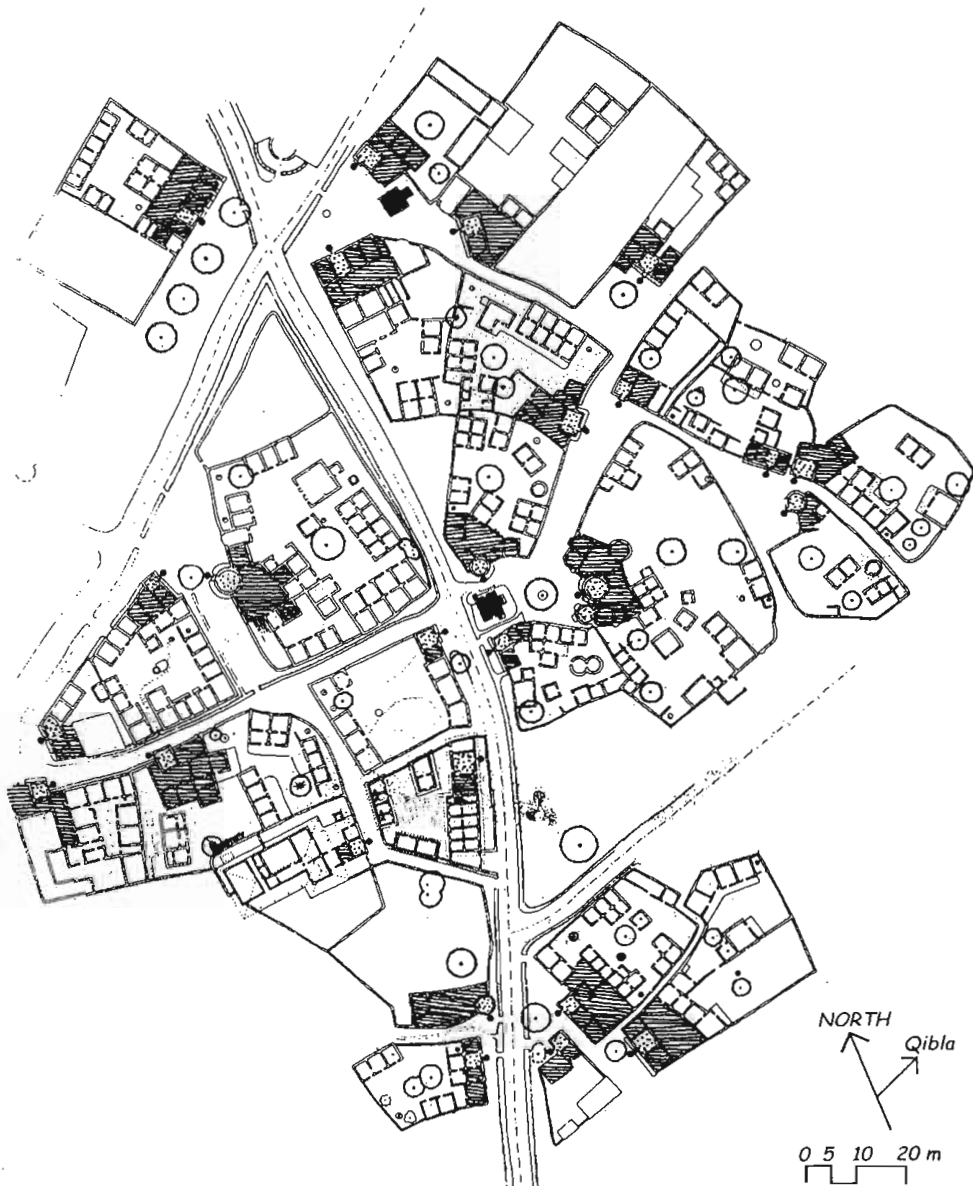


FIGURE 6D. Land use: *Zaure* (primary entrance hut shown as dotted areas); the male zone of the compound is shown as hatched areas comprising *Kofur Gida* (forecourt) and *Shiqifa* (second entrance/passage), which leads to *Cikin Gida* (private areas of the compound comprising the family and service zones). Two small neighborhood mosques are shown in black.

CONCLUSIONS: THE IMPACT OF ISLAMIC LAW ON THE BUILT ENVIRONMENT AND ITS THEORETICAL IMPLICATIONS FOR THE DISCIPLINES OF CITY PLANNING AND ARCHITECTURE

It is clear from this study that Islamic law addresses issues affecting urbanization and living in cities by covering broad considerations of the built environment and details affecting design solutions between proximate neighbors. Encouragement to live in cities, towns, and villages can be traced back to

sayings of the Prophet. The *Bayt al-Mal* (treasury) was responsible for expenditures for the public good, such as defense. However, when the treasury was lacking resources, the law encouraged and expected people to pool their resources for the sake of the public good, such as building or maintaining the walls around the city.

Guidelines for the relationship of city people with bedouin are also traceable to the Prophet. Aspects of those guidelines were intended to discourage people from reverting back to a bedouin lifestyle. The building of *Ribats* (fortified settlements), their upkeep, and the constant vigilance needed for guarding them was considered a virtue. Muhammad Bello wrote a treatise on the virtues of building and serving in *Ribats*, continuing a tradition of earlier literature on this subject, which can be traced back to the 14th century C.E. in the Middle East.

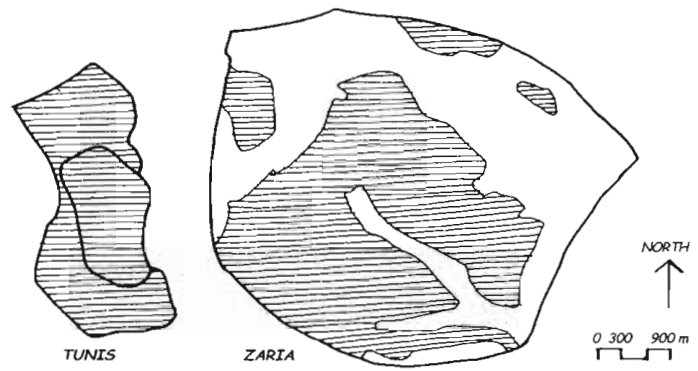


FIGURE 7. The traditional city of Tunis (capital of modern Tunisia), drawn to the same scale as the traditional walled city of Zaria. The latter has an area within its walls of over three times that of Tunis. It should be noted, however, that all of Tunis is built up, whereas only the marked areas of Zaria are built up. For details of Tunis, see Hakim (1986).

There is also a rich heritage in Islamic law of detailed stipulations for land: its acquisition, individual rights associated with land and its resources, and maintaining the land's viability and usefulness. Abdallah Fodio wrote a detailed treatise on this subject and clearly defined the concepts and their mechanisms of implementation. They were simple to understand and implement, allowing flexibility without sacrificing equity. Rules for the utilization of land and its management during the processes of change and growth in the built environment were shaped by a sophisticated system of meta-principles, called *Qawa'id Fiqhiya* (*fiqh* principles), which addressed fundamental issues of equity and justice. These principles also addressed the values and code of conduct that people were expected to respect and implement in their day-to-day decisions concerning the management of their properties and buildings, particularly decisions that might have a negative impact on their proximate neighbors.

The system had few public agents to monitor peoples' compliance with the rules. The *Imam* had the traditional responsibility of *Iqta* (allocation of land) in certain parts of the city, and the *Qadi* (judge) was responsible for adjudicating cases that resulted from non-conformity with the rules. His ultimate purpose was to re-establish equity and justice between the parties of a case. By doing so on a case-by-case basis, the *Qadi* ensured that equity was maintained throughout the built environment during the processes of change and growth across time.

Traditional *Hausa-Fulani* cities, shaped to a large extent by Islamic law and local customs, share the following characteristics:

- (1) They are walled towns within which people live and farm.
- (2) The nucleus is the compound, owned by an extended family and headed by one person who controls all primary decisions affecting the compound. The built portion of the compound is about one-third of its area, the balance comprising areas for services and adequate space between households sharing the compound.
- (3) Farming lots are scattered between and within clusters of compounds.
- (4) Natural features, such as small hills, ravines, and drainage areas, are incorporated within the city walls.

The ruling authority makes only a small contribution to planning decisions for these cities. Their decisions usually affect city walls, gates, location of the palace and major mosque, the central market area, and the general alignment of the network of primary streets between the central market, major mosque/palace compound, and all gates of the city (Figure 3). The rest of the city emerges naturally as a self-regulating and adaptive system.⁵² Access streets and paths are allowed to form, and their routes are delineated in response to use, the shortest distance between two destinations, and the process of revivification of land for compounds. Clusters of compounds form after lots are allocated and revived, and wealthy individuals build local mosques as a gift to the neighborhood. Revivers select their farming plots according to the principle of *Ihya*.

The urbanization process is based on the principle of *Ibaha*, i.e., one is allowed to develop one's lot without restrictions, subject to overarching proscriptive rules derived from normative principles (*Qawa'id*) that are based on Islamic values. The city emerges from decisions by the various actors involved in the processes of *Ihya* and construction activities within their immediate built environment. Thus, the analogy can be made to an organized complex system, a theory discussed in a 1948 article by Warren Weaver. The phenomenon of control and communication, which indirectly provided insight on how cities functioned, was also published that year by Norbert Wiener. Scientific thought and research activities related to complexity theory began to accelerate after the establishment in the mid-1980s of the Santa Fe Institute in New Mexico.

Jane Jacobs was one of the first observers to note the relationship between complexity theory and the city. The last chapter of her book *The Death and Life of Great American Cities* (1961), "The Kind of Problem a City Is," discusses this relationship and emphasizes an approach for comprehending the city that is relevant to our understanding of traditional cities in Hausaland and elsewhere. She says that the most important habits of thought for understanding cities are (1) to think about process; (2) to work inductively, reasoning from particulars to the general; and (3) to seek for "unaverage" clues involving very small quantities that reveal the way larger, more "average" quantities operate.

Another important concept is that of feedback. Negative feedback handles random changes in the environment. It is a way of reaching equilibrium. Positive feedback pushes the system onward, i.e., repeats the same action again and again. The relationship between adjacent compound owners depends on decisions affected by negative feedback, such as when a window from one compound overlooks the private domain of an adjacent compound. The owner of the latter reacts by demanding that the window be sealed or removed. However, if the window was there before the new neighbor built his compound, the latter would respond by laying out the compound so that overlooking would not occur.⁵³ The global intelligence of emergent systems, such as the traditional *Hausa-Fulani* city, depends on living within boundaries defined by rules. The system's capacity for learning, growth, and experimentation derives from its adherence to these rules (see Johnson, 2001:138, 181).

With respect to traditional *Hausa-Fulani* cities such as Zaria, we need to understand the processes of decision making relating to the construction of compounds and clusters of compounds, how day-to-day decisions are undertaken, and by what overarching values and rules those decisions are governed. We should especially note the unique conditions occurring between proximate compounds, as those will reveal the broader patterns that emerge and make up the city. As such, the traditional building experience of *Hausa-Fulani* cities, particularly as we have studied it during the 19th century, provides a good case study for the theory of complexity as it relates to urbanization.

Another important theoretical observation that impinges on politics is the question of cultural identity. Nineteenth century *Hausa-Fulani* cities are imbedded in ancient local customs, as well as Islamic values. The latter were reinvigorated by the *Jihad* of Uthman dan Fodio. Islamic values were reintroduced and reinforced in various societal activities, including the city-building process and the rules governing construction affecting the single compound and clusters of compounds. After the British conquered the Sokoto Caliphate in 1903, new concepts and procedures were introduced that affected, among other things, city building and architecture. After decades of gradual changes, we have a situation today in which most people have lost the wisdom and experience that generated the tradi-

tional fabric. The link was lost between Islamic cultural identity and its manifestation in the built environment as "modern" concepts and practices have continued to shape urbanization outside of that rich tradition.

In this study, we attempted to redress this situation by identifying some of the underlying knowledge, wisdom, and experience that created traditional cities and towns within the *Hausa-Fulani* cultural sphere in what is now the area of northern Nigeria. More studies are needed, particularly, detailed analysis of the formation of clusters of compounds, their relationships with plots of small farms, and the manner in which the street system was formed. The mechanisms of *lqta* and *lhya* require careful study in as many traditional towns within the *Hausa-Fulani* cultural area as possible, such as Sokoto, Katsina, and Kano in Nigeria, Agadez in Niger, and other traditional *Hausa-Fulani* towns in neighboring countries.

Studies sponsored by local governments and universities on other factors that shaped 19th century urban development in northern Nigeria will also be needed to create a larger body of knowledge, which can then be used as a framework for formulating policies for conserving historic sectors of cities, towns, and villages, as well as for developing culturally relevant policies and approaches for urbanization and architecture (for suggestions on how this can be achieved in North African countries, see Hakim, 2001).

NOTES

1. For an explanation of the term *Fodiawa*, see Hunwick, 1995:53-55. Trio refers to Shehu Uthman, his brother Abdallah, and his son Muhammad Bello.

2. The four Caliphs are known to Sunni Muslims as *al-Rashidun* (The Rightly Guided). They are Abu Bakr (r. 10-13 Hijri/632-634 C.E.), Umar b. al-Khattab (r. 13-23/634-644), Uthman b. Affan (r. 23-36/644-656), and Ali b. Abi Talib (r. 36-41/656-661). The four Sunni *Imams* are Abu Hanifa (80-150/699-767), Malik (96-179/715-795), al-Shafi'i (150-205/767-820), and Ibn Hanbal (163-241/780-855).

3. On the fifth line of page 1, Bello describes this 11-page manuscript as *Jawab shafi' wa-khitab minna kafin ila Muhammad al-Jaylani* (A complete and adequate response to Muhammad al-Jaylani), listed in Hunwick, 1995:121, item 30. Al-Jaylani (d. after 1836 C.E.) was a *Tuareq* leader and *mujahid* who sought the advice of Muhammad Bello on the question of managing a Muslim community among the nomads after the *jihad*, to which this manuscript is a response. According to Last (1967:231), this manuscript is dated 1230/1815.

4. The meaning of the word *fitna* in this context is sedition, strife, or disorder.

5. It is generally believed that praying together as a *jama'ah* (group) is preferable to praying alone. The larger the group, the better it is.

6. A *laqit* is an infant who does not know his parents and is abandoned due to extreme poverty or for fear of the parent being accused of adultery. See Abu Habib, 1982:332.

7. Bello cites the Prophet's saying on this matter on p. 4 of his manuscript, *Jawab shafi' wa-khitab*: "*al-Badawa Shahran fa-ma zada fa-hurwa Ta'arrab*" (a person is considered a bedouin if he lives more than two months in that lifestyle).

8. *ibid.* Based on the Qur'anic injunction 3:104 — "*al-amr bil-maruf wa al-nahi 'an al-munkar*" (to command good and forbid evil). Bello says that if a person is able to contribute to eliminating the sedition, strife, or disorder, then he should do so; however, depending on the situation, if one group of people manages to eliminate the sedition, strife, or disorder, then the obligation on other individuals is waived.

9. *ibid.*:5. Bello refers to the precedent established in those cities by reminding al-Jaylani that during Umar b. al-Khattab's reign (13-23/634-644), people from the countryside and villages helped to build Basra, Kufa, and Fustat, and they moved to live in Damascus, where they helped to establish and strengthen those towns for defense against the enemy. He elaborates on the merits of working and living in defensive settlements in his treatise *Kitab al-ribat wa al-hirasa* (see Hunwick, 1995:123, item 44).

10. *ibid.*:4. Bello reminds al-Jaylani that working on the defensive wall or moat of a town or city is a mandatory obligation based on the example of the Prophet. The Prophet and his companions collaborated in building the moat around Medina.

11. Qadi Iyad (d. 544/1149) was born in Sebta (Ceuta) and became its *qadi*. Later he served as the *qadi* of Granada. He died in Marrakesh. Al-Maghili (d. 909/1503), a *faqih* (jurist scholar) from Tlemcen, travelled to sub-Saharan Africa to teach *Fiqh* and *Shari'a*. He died in Tawat, located about 400 kilometers south of Tlemcen.

12. *Jawab shafi' wa-khitab*, 5 (full citation in note 3). Bello cites al-Wansharisi's (d. 914/1508) *al-Miyar al-Mu'rib*, 13 volumes (1981: Vol. 5, p. 33), where the *Qadi* Abu Umar b. Manzur indicates that in principle Muslims should not be asked for donations not sanctioned by the *Shari'a*. If, for instance, the *Bayt al-Mal* (treasury) has no resources for defense such as food for soldiers and war equipment, then it is lawful to ask the people to contribute, provided the following five conditions are met: (i) the need is substantiated, (ii) the donations collected are utilized justly, (iii) expenditures must be based on need and welfare of the community and not for a specific purpose, (iv) donations should be received only from those able to give and not from those who cannot afford it, and (v) these conditions should be assessed regularly based on the current resources of the treasury. When money cannot be used, then people should be required to contribute their labor for a specific cause if they are able to do so. Abdallah Fodio also addressed these issues in his four-page treatise entitled *Jawab al-sa'il fi bina al-husn* (Answer to the query about building the defensive wall), dated Dhu al-Qa'da 1230/October 1815.

13. *ibid.*:9. This *Qa'ida*, or principle, is related to Group I of the five central *Qawa'id Fiqhiya* (see Figure 1).

14. *ibid.*

15. *ibid.*:10. Bello cites two *hadiths*: (1) "Those of my nation who have adequate horses cannot be humiliated by their enemies, yet they will be humiliated if they depend solely on cattle ..." and (2) "Being close to horses and attached to them is always a blessing ..."

16. *ibid.*:11. *Ra'iyah* refers to subjects. It also refers to a herd of sheep. Thus, the *hadith* "*Kulukum ra'i wa-mas'ul an ra'iyatihi*" is a metaphor of the shepherd who is responsible for his flock. It is translated thus, "You are shepherds and each one is responsible for his flock."

17. We know of three scholars who have referred to this treatise (see Last, 1967:80; Prussin, 1976:8-19, 97-98; Sulaiman, 1987:117). One of the earliest treatises in the Islamic world that discusses the virtues of building cities and towns and the necessary conditions for their founding is that of Shihab al-Din Ahmad b. Abi al-Rabi' (218-272/833-885) from Baghdad, titled *Suluk al-Malik fi Tadbir al-Mamalik* (see al-Ghani, 1996).

18. Muhammad Bello mentions at the outset of his treatise that it is an abbreviated version of a book entitled *Mashari al-ashwaq ila masari al-ushaq*. Bello does not mention the author of this work, but it is attributed to Ahmad b. Ibrahim al-Dimashqi, known as Ibn al-Nahhas (d. 814/1411), a *Shafi'i* scholar born in Damascus who moved to Egypt and eventually lived as a guard in the *Ribat* of Dimyat, where he was martyred. A biography of Ibn al-Nahhas is available (see al-Zirkli, 1998: Vol. 1, p. 87).

19. David Dalby was Reader in West African languages at the School of Oriental and African Studies, London University. His article has excellent air photos of the traditional sector of Kano City. In an earlier study, concentrating on the usage and meanings of the *Hausa* word *garii*, Dalby published his findings (see Dalby, 1964). The other study is by Ahmed Beitalah Yusuf. Yusuf taught in the Department of Sociology at Ahmadu Bello University, Zaria, Nigeria.

20. The translation of the title is "On teaching about the revivification of dead land" (see Hunwick, 1995:108, item 81). Muhammad Sani Zahraadeen included the study of this treatise in his Ph.D. thesis (1976). He later published an article on this treatise (see Zahraadeen, 1990).

21. There are five categories of land:

- (1) land taken by force, which may neither be sold nor given to anyone as a gift, but must remain as common property for use by Muslims;
- (2) land whose owners concluded a peace treaty with Muslims. It belongs to its owners who are free to utilize it in any form they wish;
- (3) land whose owners converted to Islam. It belongs to them;
- (4) land whose owners escaped and left it. The *Imam* has the authority to allocate its use as he sees fit; and
- (5) land whose owners did not convert to Islam or conclude a peace treaty with Muslims. The *Imam* may allocate it to whomever he wishes.

22. Revivification occurs when one or more of these conditions is met: (i) finding water within the land by digging a well or opening up a spring so that it is possible to cultivate the land; (ii) removing water from a flooded land; (iii) building a permanent structure on the land; (iv) substantial planting on the land; (v) cultivation by plowing and breaking up the soil (it is to be noted that cultivation without prior plowing does not constitute revivification); (vi) removing trees from the land by cutting or burning; and (vii) breaking up stones on the land and leveling its steep slopes.

23. Abdallah Fodio explains how the *harim* for different entities is established and recognized:

- Village: The area surrounding it, which is usually used for gathering firewood and for grazing. The distance is based on walking back and forth in one day, which is about 10 kilometers each way for a total of 20 km. Sometimes the area for collecting firewood is beyond the grazing area; sometimes it is within the grazing area. In that situation, the *harim* includes the farther of the two.
- River: 1,000 cubits (or about 500 meters) and an area adequate for those who come to benefit from it.
- Abundant spring: 500 cubits (or about 250 meters).
- Well used for livestock: The area of land that does not inconvenience anyone who brings his flock to drink at the well.
- Well used for agricultural purposes: Space is needed to protect it from damage and to allow its users to benefit from it.
- Well used for agriculture, a house, or small tributary, or a river in land not owned by anybody: 20 cubits (or about 10 meters).

- House surrounded by dead land: Its *harim* includes the areas needed for access and egress, its built-in benches, space for accumulating soil for construction and maintenance purposes, and space for discharge of rainwater and wastewater.
- House surrounded by other houses or owned properties: No single owner is allowed to occupy an area as *harim* for his sole purpose, but rather each owner can benefit from the *harim* abutting his property without harming or inconveniencing his neighbor(s).
- Palm orchard and other trees: The *harim* is the area on the edges of the orchard and areas allowing entrances and egresses.
- Streets: Seven cubits (or about 3.5 meters). It is not allowed to sit and occupy space within the minimum width of the street, unless more space is available. If a structure is built in the street's right-of-way, it must be demolished even if it does not create harm. It is also not allowed to take space from the street's right-of-way and incorporate it within one's boundaries. Other stipulations are mentioned regarding streets.

24. Abdallah Fodio stipulates four categories for water:

- (1) People have equal right of access to water that is public, i.e., it is not owned because it is in public land, such as rivers and springs. No one is allowed to have exclusive rights.
- (2) The owner of private land is the primary beneficiary of water located on this land, such as a well or spring. He has the right to exclude others and the right to sell the water. Although it is preferable that he provides the water without charging for it, he cannot be forced to do so unless people are desperate for water and are threatened with death. In that case, he must provide them with water, and if he refuses, they have the right to fight him. If his neighbor's well is damaged and being repaired, causing a threat to the neighbor's crops, then he should provide any surplus water to that neighbor.
- (3) Water collected from rain should be shared. This is based on the principle that owners on higher ground use what they need until the water reaches their ankles, and then it must be released to the neighbor(s) at lower ground, and so on.
- (4) A person that digs a well in the countryside for watering livestock has first priority to use it. Once his needs are met, he cannot prevent others from using the well.

25. People have equal rights for pasture when edible grass and shrubs are on public, i.e., unclaimed, land. If the land is owned, then its owner has priority rights for pasture. On the question of rights for selling pasture or preventing others from using it, Abdallah Fodio cites al-Kharashi, who says that it is illegal to prevent grazing rights on land left uncultivated by its owner. If, however, the owner fences his land and finds that people's livestock are trespassing and damaging his crops, then he has the right to prevent grazing. He also has the right to sell his crops.

26. See Mustafa Ahmad al-Zarka (1989:33) in the introduction to a book written by his father, who died in 1938.

27. *ibid.*:36. An example of a *Qa'ida* that is attributed to a saying of the Prophet is "*La Darar wa-la Dirar*." Some scholars interpret its meaning as "No infringement, whether profitable or not." Another interpretation is "Do not harm others or yourself, and others should not harm you or themselves."

28. *ibid.*:37.

29. *ibid.*

30. *ibid.*:38.

31. *ibid.*:41. It should be noted that the bulk of the intellectual activity in developing the science of *Qawa'id* occurred in the eighth century Hijri (14th century C.E.).

32. See the third section of F. E. Vogel's article "*Siyasa*" (1997) in *Encyclopedia of Islam*, New Edition, Fascicules 159-160 (Leiden: E. J. Brill, Vol. 9, pp. 694-696). The scholars most responsible for crystallizing the doctrine were the two Hanbalis, Ibn Taymiyya (d. 728/1328) (particularly in his book *al-Siyasa al-Shari'ia*) and his student, Ibn Qayyim al-Jawziyya (d. 751/1350). Their influence is clearly apparent in the work of the Maliki scholar Ibn Farhun (d. 799/1397), *Tabsirat al-Hukkam*.

33. This treatise was written in 1221/1806 while Abdallah was in Kano. In the introduction (pp. 3-4), Abdallah indicates that he wrote the treatise after receiving many requests from friends and associates in Kano who needed a treatise on rules based on the *Shari'a*, even though Abdallah pointed out that there was adequate information in the extant work of earlier Sunni scholars.

34. This treatise is addressed to rulers, administrators, and others entrusted with similar administrative responsibilities. The author categorizes typical issues and problems and offers advice on how to deal with them. Not listed in Hunwick, 1995.

35. This treatise was written to Abdallah's friends and associates in Kano who needed guidance on rules based on the *Shari'a* (see Hunwick, 1995:91, item 18).

36. This treatise, completed in 1230/1815, was written in response to the question, "In what circumstances can the *Imam*, or ruler, require his people to assist in building a defensive wall around a settlement, town, or city?" Not listed in Hunwick, 1995.

37. Abdallah Fodio quotes al-Maghili's response, dated 897/1492, to the Sultan of Kano (r. 867/1463- 904/1499) on pages 81-85, which includes a number of *Qawa'id* (see Hunwick, 1995:92, item 25).

38. This treatise discusses the principles relating to the application of *Shari'a* rules in differing social and customary contexts. It contains the largest number of *Qawa'id* and draws on Shihab al-Din al-Qarafi's (d. 684/1285) *al-Ihkam fi tamyiz al-fatawi 'an al-ahkam wa-tasarrufat al-qadi wa'l-imam*. al-Qarafi, a Maliki scholar, was born, lived, and died in Cairo (see Hunwick, 1995:123,

item 45). For a general study on *Urf* (customs), customary law, and its impact on the built form of traditional cities in the Islamic world, see Hakim, 1994.

39. Completed on August 20, 1836 (see Hunwick, 1995:219, item 1). The author's objective in writing this treatise was to create a reference work for himself and also for other *Qadis* (judges). His primary sources were the works of the *Fodiawa* trio, Uthman, Abdallah, and Muhammad Bello. He also refers to well-known sources such as the *Mukhtasar* of Khalil b. Ishaq, the *Risala* by Ibn Abi Zayd al-Qayrawani, *Qawanin al-Ahkam* by Ibn Juzayy, *Kitab al-Nawazil* by Muhammad b. Salim, *al-Mi'yar* by al-Wansharisi, and others.

40. Ibn Asim's (d. 829/1426) treatise, *Tuhfat al-Hukkam fi nakl al-uqud wa al-ahkam*, was commented on by a number of scholars, including al-Tusuli from Fez (d. 1258/1842), in his *al-Bahja fi Sharh al-Tuhfa*.

41. Abd al-Qadir b. al-Mustafa (b. 1219/1804-d. 1281/1864), *Nubdhat Ibn Mustafa min Kutub al-A'imma* (see Hunwick, 1995:221-230).

42. *ibid.*

43. al-Kharashi's analysis and explanation of Mukhtasar Khalil (first published in five volumes, Cairo 1317/1900, pp. 275-278). Muhammad b. Abdallah al-Kharashi al-Maliki lived and died in Cairo (1101/1690). This book was available in manuscript form to the *Fodiawa* trio and other scholars of the Sokoto Caliphate.

44. The reference is mentioned in Part 2 of this study; see note 35.

45. Ibn Salmun, *Kitab al-'qd al-Munazzam lil-Hukkam*, and Ibn Farhun, *Tabsirat al-Hukkam*. The latter was very popular among the *Fodiawa* trio and subsequent scholars in the Sokoto Caliphate.

46. al-Matiti (d. 570/1174) was a Maliki scholar from Fez whose book, *al-Nihaya wa al-Tamam fi Ma'rifat al-Watha'iq wa al-Ahkam*, known as *al-Matitiya*, influenced many later scholars.

47. Abdallah Fodio relied on some of the following sources in compiling the rules: Ashhab al-Qaysi (d. 204/819 in Egypt), a friend of Imam Malik (d. 179/795) from Medina; Ibn al-Majishun (d. 212/827), originally from Isfahan, lived and worked in Medina, and died in Baghdad; Asbagh b. al-Faraj b. Nafi' (d. 225/840) from Egypt; Ibn Habib (d. 238/853) from Cordoba, author of *al-Wadiha*; Sahnun (d. 240/854), originally Syrian, born and died in Qairouan, author of *al-Mudawwana al-Kubra*; Yahya b. Umar (d. 289/901) from Qairouan studied under Ibn Habib and Sahnun. His book, *Ikhtisar al-Mustakhrajah*, is known as *al-Muntakhabah*; Ibn Abi Zayd al-Qairouani (d. 386/996), one of Qairouan's great scholars, author of *al-Risala* and the multi-volume work *al-Nawadir wa al-Ziyadat*; Ibn 'Attab (d. 462/1069) from Cordoba, a scholar in the science of *al-Watha'iq*; Al-Lakhmi (d. 478/1085), originally from Qairouan, resided and died in Sfax and authored *al-Tabsira*; al-Matiti (d. 570/1174) from Fez, author of *al-Nihaya wa al-Tamam fi Marifat al-Watha'iq wa al-Ahkam*, known as *al-Matitiya*; Ibn Juzayy al-Kalbi (d. 741/1340) from Granada, author of *al-Qawanin al-Fiqhiya*; Ibn Salmun al-Kinani (d. 741/1340) from Granada, author of *al-Iqd al-Munazzam lil-Hukkam*; and Ibn Farhun (d. 799/1397), born, raised, and died in Medina, author of *Tabsirat al-Hukkam*.

48. *al-Risala* by Ibn Abi Zayd al-Qairouani (d. 386/996) from Qairouan; *al-Qawanin al-Fiqhiya* by Ibn Juzayy al-Kalbi (d. 741/1340) from Granada; *Mukhtasar Khalil* by Khalil bin Ishaq (d. 776/1374) from Cairo; *Tuhfat al-Hukkam* by Ibn Asim (d. 829/1426) from Granada; *Lamia fi al-Ahkam*, known as *Lamiyat al-Zaq'zaq*, by Ali bin al-Qasim al-Zaqqaq (d. 912/1506) from Fez; and *al-Miyar al-Mu'rib* by Ahmad b. Yahya al-Wansharisi (d. 914/1508) from Fez.

49. See Sharara, 1997:262.

50. Zaria's geographic coordinates are latitude 11°3'N, longitude 7°42'E, at an elevation of 670 meters above sea level. The direction to the *qibla* in Makkah is 67°16'NE.

51. See Schwerdtfeger, 1982:33-35.

52. The self-regulating aspect is a result of the decisions and actions of specific individuals in starting new compounds or small farms. In doing so, they respond to existing conditions on adjacent properties by adjusting their planning and design decisions. Over time, changes and adaptations occur in compounds as their owners adjust and adapt to changes in neighboring and contiguous compounds. The alignment of pathways and streets will be delineated and extended in response to the creation and/or changes of farm boundaries and compound walls.

The phenomenon of self-regulating and adaptive systems has been the focus of many disciplines for at least the last 50 years, such as in physics, biology, economics, and geography. It has been scrutinized by mathematics and has captured the imagination of social scientists whose interpretations brought the findings of these various disciplines, especially the life sciences, closer to urban planning and design.

53. In all living systems there is a common pattern of organization. Its most important property is that it is a network pattern. Networks of communication generate feedback loops, and living systems learn from mistakes. Thus, a community can correct its mistakes, regulate, and organize itself. These observations of living systems can be applied to the manner in which the traditional *Hausa-Fulani* city self-organized in response to decisions resulting from the ongoing networking between neighbors in shaping their local built environment. For an explanation of network patterns and self-organization based on recent scientific findings, see Capra, 1996:82-83.

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