

IRAQ'S HOUSING CRISIS:  
UPGRADING SETTLEMENTS FOR IDPS (INTERNALLY DISPLACED PERSONS)

by

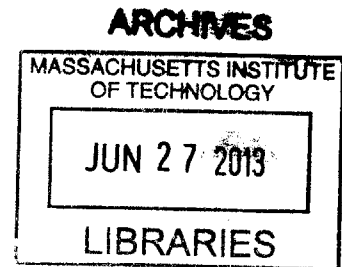
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A Thesis Submitted to the Department of Architecture

In Partial Fulfillment of the Requirements  
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## ABSTRACT

### IRAQ'S HOUSING CRISIS: UPGRADING SETTLEMENTS FOR IDPS (INTERNALLY DISPLACED PERSONS)

By  
Layla Karim Shaikley

Submitted to the Department of Architecture on May 23<sup>rd</sup>, 2013 in partial fulfillment of the requirements for the Degree of Master of Science in Architecture Studies

The most recent war in Iraq has resulted in a large wave of internal and external displacement with increased sectarian violence and ethnic tension. Subsequent conflict has exacerbated conditions within the nation and further increased displacement. Throughout the country, over one million Iraqis are currently displaced. Inadequately supported by infrastructure due to a negligent dictatorship and consecutive wars, over 250 settlements have peppered Baghdad's landscape and aggravated the capital's insufficient infrastructure. It is clear that the rapid rate at which informal settlements for internally displaced persons (IDPs) are being established exceeds the rate in which settlements are forming. Many settlements have exhibited user-initiated incremental housing processes. The topic of this thesis is upgrading settlements for IDPs in Baghdad, Iraq through user-initiated methods. Baghdad is facing an overwhelming amount of sub-standard IDP settlements, and while some settlements are turning into slums, other settlements are becoming more durable. Community action can be a solution for the problems addressed in semi-durable settlements that have exhibited enough solidarity through incremental processes to reach a semi-durable state. This thesis examines the solution through three methods. First, it looks at a historical review of incremental housing processes parallel to Iraq's housing policies and history to understand the nation's current housing crisis. It finds that Iraq has struggled in addressing housing needs for the low-income sector since its independence. Following the historical review, this thesis screens IDP settlements in Baghdad to evaluate the feasibility of upgrade for different types of settlement. In the screening process, settlements that exhibit semi-durable characteristics and are available for secure tenure are most eligible for upgrade. One particular semi-durable settlement is studied: Al-Sadeq in Baghdad's peripheries. Al-Sadeq is evaluated based on the following measures of durability: infrastructure, housing, and social networks. As hypothesized, findings supported the role of incremental housing principles and community action to improve the settlement's state of durability. Lessons are extracted from community field research. As hypothesized, social cohesion and community action are the catalysts that allow incremental methods of infrastructure and housing improvements to thrive. This is especially important in a conflict zone as Baghdad, where displacement is often a direct outcome of danger. In such environments, social networks can provide feelings of security to invest in development. Lessons for communities like Al-Sadeq include the power of community action in incremental housing processes and user-initiated development. Lessons from the historical review shed light on the ineffective solutions for mitigating social housing concerns in the nation's past. Lessons for the government in this study challenge the lack of an established tradition of community action in public sector projects in Iraq.

Thesis supervisor: James Wescoat

Title: Aga Khan Professor

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## FOREWORD

Upon arriving to Baghdad for the fieldwork portion of this thesis, I was picked up from the airport by my driver, Ali. Before long, we were on our way to Kadhmiyya. I drove past my grandmother's locked and abandoned home. The irony – I thought – that the locked up home, war scarred and abandoned, served as the safe haven of so many childhood summers. Most of my mother's family has been displaced since the start of the 2003 conflict. While driving through a thick mixture of Baghdad traffic and sand, Ali appropriately commented during the melancholic tunes of Um Kulthoom. "We just missed a car bomb here. We got lucky." I spaced into a daze of thought – at what point does a leap of faith become a dive into delusion? And why are life and death both described as things so happenstance in Baghdad?

I woke up slowly on the first morning to the roosters and adhan, one of my favorite morning medleys. My Aunt Saleema was up praying for my safe return before I got the chance to sip my morning chai and leave for field research. My aunt's prayers for safety are what occupy her mind when her husband or children leave the house. For it is the morning traffic, near the checkpoints that pepper Baghdad's streetscape, that car bombs are most likely to go off. The insurgents' rationale is simple: higher density of people means a higher death toll.

It is those very moments, and others like it, that have given me a glimpse of understanding to the fragile and tense circumstances that plague Baghdad today. Iraq is a transitional post-conflict state with many obstacles on the road to development. It is possible that in transitioning and post-war contexts, such as Iraq, satisfying basic necessities – i.e. housing, etc. – can contribute to overall security.

Thank you Dr. Reinhard Goethert, Dr. James Wescoat, Dr. Yu-Hung Hong, the Department of Architecture at MIT, the Aga Khan Program in Islamic Architecture at MIT, UN-Habitat, the Norwegian Refugee Council, Huda Ali, The Ministry of Migration and Displacement, The Ministry of Housing and Construction, the Ministry of Planning, the Ministry of Finance, the Ministry of Agriculture, the Ministry of Municipalities and Public Works, Amanat Baghdad, and the Baghdad Provincial Council.

Thank you, to my family, who has always supported me and given value to my thoughts, ideas, and contributions. And for never stopping me from my anxiety-provoking fieldwork in hopes of making a difference.

Layla Karim Shaikley  
2013

# CHAPTER 1: INTRODUCTION

This thesis focuses on upgrading settlements for internally displaced persons (IDP) in Baghdad, Iraq. Chapter 1 introduces the IDP crisis in Iraq. It outlines the problem of semi-durable IDP housing conditions that are desperately in need of, and potentially eligible for, upgrade in Baghdad. It then develops the thesis that incremental processes can address upgrading, and proposes methods for analyzing how incremental processes (of housing, infrastructure, and social network development) do, and do not, contribute to the long-term durability of IDP settlements. The analysis occurs through a case study of the Al-Sadeq IDP settlement on the outskirts of Baghdad. The primary resource in this research is the community.

## 1.1 PROBLEM STATEMENT

The most recent war in Iraq has resulted in a large wave of internal and external displacement, with increased sectarian violence and ethnic tension. Subsequent conflict has exacerbated conditions within the nation and further increased displacement. Throughout the country, at least 1,332,382 Iraqis are displaced to date.<sup>1</sup> Already operating on inadequate infrastructure due to Saddam Hussein's negligent dictatorship and consecutive wars followed by the nation's most recent occupation, over 250 IDP settlements have peppered Baghdad's landscape. The settlements have aggravated the capital's weak infrastructure. It is clear that the rapid rate at which informal settlements are being established exceeds the rate in which solutions are being provided.

Ten percent of Baghdad's population has left their place of origin for a location where their religion or sect predominates. The Ministry of Displacement and Migration has identified the main reasons for displacement to be ethnic and political conflicts, job opportunities, and security issues.<sup>2</sup> Meanwhile, rural families have migrated in large numbers to the capital. The migration within and into the capital alone, which has a population of seven million, has resulted in over 110,000 displaced families and 700,000 displaced people in Baghdad.<sup>3</sup>

Displaced families are having severe difficulties in finding adequate and affordable shelter.<sup>4</sup> More than half of the displaced families, an estimated 58%, face severe challenges in accessing basic necessities and adequate, affordable shelter. Insufficient housing is a problem throughout Iraq, even outside of the IDP context. Presently, there is a shortfall of up to three million dwellings in Iraq, a crisis level shortage by United Nations Development Group and World Bank standards. The high demand for housing outside of the affordable sector further aggravates the accessibility of housing to IDPs.

The IDP housing issue affects Baghdad at large; it has resulted in security concerns and has limited access to neighborhoods that are now considered dangerous due to crime. Likewise, local communities have been sorely stretched by the influx of IDPs.<sup>5</sup>

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1 "Global Statistics." IDMC. Internal Displacement Monitoring Committee, n.d. Web. 13 Feb. 2013.

2 Ministry of Displacement and Migration. "Session 1: Return and Integration." *Summary Proceedings of Workshop Addressing IDP Camps and Informal Settlements in Baghdad*. IDP Camps and Informal Settlements in Baghdad, Amman, Jordan. 5. Print. January 17<sup>th</sup> -19<sup>th</sup>, 2011.

3 Ministry of Displacement and Migration. "Session 2: IDP camps and informal settlements in Baghdad." *Summary Proceedings of Workshop Addressing IDP Camps and Informal Settlements in Baghdad*. IDP Camps and Informal Settlements in Baghdad, Amman, Jordan. 6. Print. January 17<sup>th</sup> -19<sup>th</sup>, 2011.

4 Republic of Iraq. Ministry of Migration and Displacement. United Nations Human Settlement Programme. *Iraq National Strategy: Longer-Term Shelter Solutions for People Affected by Displacement*. Nairobi: UN-HABITAT, 2011. Print.

5 Republic of Iraq. Ministry of Construction and Housing. Iraqi Central Office of Statistics and Information Technology, UN-HABITAT; World Bank; IFC. *Iraq Housing Market Study Main Report*. Iraq: Republic of Iraq, 2006. 6. Print.

Providing secure, safe, and affordable tenure for IDPs is a top priority for the government. This is especially a concern for families that live illegally in public buildings, informal settlements, and makeshift constructions who are particularly vulnerable due to forced eviction and potential secondary displacement.<sup>6</sup> Secondary displacement would catalyze further unemployment amongst IDPs and threaten social and family ties within particular settlements. Due to the tension and lack of personal security in Iraq, the social and family ties within settlements are a consideration that will be shown to be of key importance in this thesis.<sup>7</sup>

IDPs do not want secondary displacement either. While current IDP settlements are legally insecure, under-served by urban infrastructure, generally have unhealthy living conditions, and can be physically unsafe, 80% of IDPs in Baghdad prefer to stay where they have resettled.<sup>8</sup> Rural IDPs have begun to adapt to an urban lifestyle and brought supportive traditions to their new urban environment. Certain communities tend to be well organized and have established internal leadership for representatives to negotiate with authorities for essential services, as this thesis will show through a case study.

The organic nature of the IDP settlements has often resulted in user-initiated incremental housing and infrastructure processes, the longer history of which will be reviewed in Chapter 2. Though houses are overcrowded and construction materials vary in durability and safety, many settlements are flexible and responsive enough to develop affordable and durable solutions for shelter. They allow families to expand and improve their dwellings over time. With unstable incomes for many IDPs, this can be promising.

Within the incremental housing model, each household plans and implements its own housing provision according to its specific needs over time. The incremental housing model allows IDPs to pay for construction as income is generated within a “pay as you go” approach. The sequential organization of a home divides the cost of construction over time and delivers a basic housing unit more quickly than direct complete construction would.

However, incremental housing models also face challenges. The idea was birthed in the mid-twentieth century and has not always been successful. Incremental housing does not look very acceptable initially, and it requires strong policy and practical commitment from national and local government when it becomes a national program. Incremental housing can learn from past practices to understand what has and has not worked.

All settlements are not in a position to undertake incremental development. Among Baghdad's 250 IDP settlements, some settlements are warping into slums rather than increasing in durability. Slums are a combination, to various extents, of the following characteristics: inadequate access to safe water, inadequate access to sanitation and other infrastructure, poor structural quality of housing, overcrowding, and insecure residential status.<sup>9</sup> Slums are perpetuated by rapid rural migration, increasing urban poverty, inequality, insecure tenure, and globalization. Consequently, the settlements that have become slums are among the poorest, most disorganized, conflict ridden IDP areas. Incremental housing has to be studied historically to understand what has and has not worked (Chapter 2). Other settlements are not eligible for upgrade due to lack of land tenure or residential zoning by the government. It is therefore useful to screen settlements (Chapter 3), and to focus support for incremental processes in places where it has the most promise and becomes the platform for upgrading less durable settlements (Chapter 4). This thesis assumes that most or all informal settlements begin in a non-durable state, and it investigates factors for why some settlements cross the bridge to a semi-durable state while others deteriorate into slums.

6 “IOM Iraq: Review of Displacement and Return in Iraq.” *International Organization for Migration* (2010): 5. Print.

7 *Summary Proceedings of Workshop Addressing IDP Camps and Informal Settlements in Baghdad, 2011*, 5.

8 Wakely, Patrick, and Elizabeth Riley. “The Case for Incremental Housing.” *Cities Alliance Policy Research and Working Papers Series 1* (June 2011). Print.

9 United Nations Human Settlement Programme. *State of the World's Cities 2006/2007*. Nairobi: UN-HABITAT, 2007. Print.



Iraq's government is currently searching for a solution to mitigate the IDP problem. According to the Technical Director for the Ministry of Housing, there is big gap between the demand in housing and the supply that is currently being provided. Constrained by various bottlenecks, Iraq's government admits to a lack of capacity in response to the affordable shelter crisis. At any given point since its independence, Iraq's government has only met 15% of its social housing needs.<sup>10</sup> Due to compounded previous wars, severe internal strife, and a current lack of safety, Iraq is in a more challenging position now than it ever has been in responding to issues of displacement.

The National Housing Policy also states that there is a substantial unmet demand in housing.

This thesis will address the following problem: Baghdad is facing an overwhelming amount of sub-standard IDP settlements that are rapidly turning into slums. Some settlements, however, have met some of their own demands via user-initiated participation. Certain factors serve to enhance the success of user-initiated provisions within an IDP settlement while other factors may limit a settlement's success.

## 1.2 THESIS QUESTION

User-initiated community action can be a solution that is harnessed for some of Baghdad's overwhelming and sub-standard IDP settlements. This thesis investigates upgrading through incremental processes as a viable solution for what are categorized as semi-durable IDP settlements in Baghdad. Under what conditions can user-initiated participation be a solution for Iraq's overwhelming and sub-standard proliferation of IDP settlements? Is upgrading via incremental housing a viable solution for semi-durable IDP settlements in Baghdad?

User-initiated constructions vary in durability. Durability, by definition, is initially derived from Iraq's National Housing Policy. Durable solutions in Iraq's policy are based on three elements: "long-term security," "restitution of or compensation for lost property," and an "environment that sustains the life of former displaced persons under normal economic and social conditions."<sup>11</sup> For the purpose of this thesis, "an environment that sustain the life of former displaced persons under normal economic and social conditions" will be defined as housing, infrastructure, and social networks.

The current policy addresses housing, and guarantees "adequacy" and "durability" to Iraqis.<sup>12</sup> The government of Iraq currently categorizes settlements as durable, semi-durable, or non-durable. This thesis aims to understand user-initiated factors that promote a non-durable settlement to a semi-durable state. This thesis hypothesizes that semi-durable settlements have the greatest prospect for reaching varying levels of durability with community action and incremental processes of housing and infrastructural development.

<sup>10</sup> Ministry of Construction and Housing (2006). *Iraq Housing Market Study Main Report*. Baghdad, Iraq: Republic of Iraq. Pp II.

<sup>11</sup> Republic of Iraq. Ministry of Migration and Displacement. *Iraq National Policy on Displacement*. Baghdad: Republic of Iraq, 2008. Print.

<sup>12</sup> Sec 2.3.3

This thesis investigates the potential for upgrade in a semi-durable settlement that exhibits community action in housing and infrastructure processes. While settlements begin in a non-durable state, indicators of upgrade to a semi-durable state have appeared within certain settlements. Upgrading community initiated settlements that have succeeded in housing and infrastructural provisions require that the settlement has shown enough internal organization and initiative to reach a semi-durable state without direct institutional support or planning. Considering the vast number and type of settlements in Baghdad, this thesis investigates one model for upgrade with minimal government effort. Non-durable settlements can also be upgraded, but require community cohesion and incremental processes in order to upgrade over time.

Sometimes, non-durable settlements deteriorate into slums – such settlements lack safety and basic infrastructure. This category of settlement will not be investigated. Through the explicit involvement of IDPs in incremental housing approaches, people are part of the upgrading process and expand their own properties with appropriate community support. This model can respond to the IDP demand to remain in place and can provide a fast, inexpensive, and technically simple way to meet the government's vision of durable housing for Iraqis. It also provides vulnerable IDPs with a housing solution that does not disrupt existing social networks, potentially subjecting IDPs to the unsafe social conditions that caused initial displacement.

This thesis hypothesizes that upgrading is a viable option for certain non-durable and semi-durable IDP settlements in Iraq, namely those that exhibit successful incremental approaches and community action. The data obtained is through observations of informal IDPs who initiated their own housing and infrastructural provisions, field research, published reports, interviews of government personnel, nationwide conferences with government and UN-HABITAT, data from the Norwegian Refugee Council in Baghdad, and a historical literature review.

## 1.3 METHODOLOGY

Three main methods were employed to investigate the thesis question: a historical review of incremental housing research, social housing in Iraq, and housing policy in Iraq; a settlement screening in Baghdad using Iraq's durability housing policy; and finally, a durability analysis of a case study settlement on the outskirts of Baghdad known as Al-Sadeq. The table below illustrates the order of the methodology for this thesis.

Methodology		Location
Literature Review	Surveys the historical development of literature in the field of incremental housing, and parallel housing policies in Iraq throughout the same period.	Chapter 2
Citywide filter of settlements eligible for upgrade	Screening criteria for five citywide IDP settlement possibilities to be looked at, including upgrading. If upgrading is the selected intervention, the site goes through a government land tenure screening to ensure that land ownership is possible before upgrade.	Chapter 3
Durability Analysis	Assess the prospects for incremental housing, the specific nature and roles of community action and incremental processes can be examined for each of the three categories: housing, infrastructure, and social networks. From there, findings on two hypothesized elements of successful upgrading are developed: incremental housing and community action.	Chapter 4

### THESES METHODOLOGY

#### 1.3.1 HISTORICAL REVIEW

The historical review looks at Iraq's housing history and policies since its independence and the trends in incremental housing that happened in parallel. Understanding how Iraq has dealt with social housing while learning from trends in the evolution of incremental housing is a method for understanding the problem, what has and has not worked, and for shaping the intervention of this thesis.

1.3.2 CITYWIDE SCREENING OF SETTLEMENTS ELIGIBLE FOR UPGRADE

With over 250 IDP settlements in Baghdad, one single solution will not mitigate the IDP housing crisis. The government has the following options for existing settlements: leave, remove, relocate, return, or upgrade. The table below weighs the pros, cons, and feasibility of each option for intervention in the semi-durable context.

OPTIONS	PROS	CONS	IMPLICATIONS FOR A SEMI-DURABLE SETTLEMENT
LEAVE AS IS	Saves public resources.	Conditions potentially worsen and increase cost of intervention.	The building conditions at a semi-durable site imply that the infrastructure is informal and varied. This is not a viable solution for the purpose of this thesis, which is to examine solutions to mitigate the IDP crisis.
REMOVE	Removes unacceptable structures and allows for city master planning to continue implementation.	Displaces squatters for a second time making them even more vulnerable. Politically, this is not well received.	With removal, IDPs at semi-durable settlements would face secondary displacement, making them more vulnerable. This is not a viable solution for the purpose of this thesis, as it relocates the IDP crisis rather than deals with it.
RELOCATE	Allows for properly planned settlements to be built.	Expensive for household, expensive for government, not uncommon for squatter to sell house and move to new informal settlement.	Over 90% of Iraq's IDPs want to remain in-situ. Relocation is also not cost effective or timely. This is not a viable solution for this thesis, which seeks solutions that leverage already existing successful conditions.
RETURN	Household is able to return and rebuild their lives in place of origin.	Possibly no livelihood and often home is devastated or occupied by squatters.	Many former IDP homes are being squatted in or are unsafe for IDPs to return to. This is not a viable solution for the purpose of this thesis.
UPGRADE	Least expensive option. Uses existing IDP resources to build quickly. Best for semi-durable settlements that exhibit characteristics sought in this thesis, hypothesized to be existing incremental housing processes and community action.	Difficult to integrate with city, original landowner may have ownership problems, and host communities are not always receptive.	A semi-durable site can leverage various means to upgrade to a durable settlement. If it has indeed reached a semi-durable state without formal support, the viability of upgrade will be evaluated in this thesis.

*Upgrade* is the most appropriate point of intervention for certain semi-durable settlements. If the semi-durable settlement can take advantage of internal resources to upgrade its state to a durable settlement, the community can potentially be made responsible for upgrading the settlement status with improved resources.

This thesis seeks to understand factors that contribute to the partial success of a semi-durable user-initiated settlement.

However, before proceeding with analysis for upgrade, a pre-screening must address land issues to qualify as a semi-durable settlement eligible for upgrade. In order to upgrade, a settlement must satisfy the following checklist of government requirements that would otherwise prevent secure tenure.<sup>13</sup>

CRITERIA 1	CRITERIA 2	CRITERIA 3	CRITERIA 4	CRITERIA 5
Squatting must occur on public land.	Government must approve land use for IDP settlements.	Land must be suitable for residential development.	Land must resolve pending ownership disputes.	Site must be close to trunk infrastructure.

GOVERNMENT REQUIREMENTS FOR TENURE. SOURCE: UN-HABITAT.

Following government-defined pre-screening criteria, this thesis provides a methodology to filter through IDP settlements within Baghdad to identify semi-durable communities with potential for upgrade. The Iraqi government, through its policy, guarantees “durable” housing to all Iraqis, and this thesis evaluates the factors that may permit a semi-durable settlement to upgrade to a durable settlement.

There are two reasons to focus on the semi-durable category: at 57%, they are the most prolific settlement typology in Baghdad, and findings can be adaptable to both non-durable and durable settlements where social solidarity is exhibited.

### 1.3.3 DURABILITY ANALYSIS OF AL-SADEQ IDP SETTLEMENT

In the definition of durability for this thesis, infrastructure, housing, and social networks are the categories that encompass the basic necessities for IDPs. With the infrastructure of water, sanitation, electricity, drainage, irrigation, trash collection, and roads, a community can thrive with fewer concerns of health and safety. Through durable housing, a household can inhabit a space safely. Likewise, IDPs can expand a dwelling to meet their needs and increase a unit’s value over time. This can be achieved via appropriate incremental strategies or direct complete construction and can accommodate various budgets. With a strong social network and community cohesion, safety and trust issues are alleviated and a community can form together to promote growth, commerce, and comfort. Also, it is important to note that this thesis hypothesizes that social network and incremental models are what encourage a non-durable and initial settlement to reach a semi-durable state and avoid categorization as a slum. This thesis evaluates the Al-Sadeq settlement with that hypothesis. Al-Sadeq is located in the eastern suburbs of Baghdad as an example of a semi-durable settlement.

Through evaluating the settlement’s durability by incremental methods and community action, lessons will be extracted from the case study from and for IDP communities, for national and local government, for policy, and for research.

13 *Summary Proceedings of Workshop Addressing IDP Camps and Informal Settlements in Baghdad*, 2011, 5.

## CHAPTER 2: HISTORICAL REVIEW

This chapter examines the history of incremental housing since its theoretical “birth” in the mid-twentieth century. It also elucidates on the overlapping history of social housing in Iraq, also birthed in the mid-twentieth century, examining social housing culture in the nation compared to global social and incremental housing trends. It ends with a description of Iraq’s current IDP crisis, due to a negligent former regime’s policy in housing compounded with the most recent war, exacerbating issues of displacement.

### 2.1 INCREMENTAL HOUSING DEFINED

The incremental housing approach has evolved since its theoretical inception in the mid-twentieth century. The incremental model, based on existing patterns of informal settlements, provides households with basic and affordable core shelters. The model allows households to invest in the extension and improvement of a unit over time through user-initiated mechanisms with increased spatial flexibility. The incremental housing model responds to an inconsistent income and has the obvious benefits of short initial execution time and lower initial cost for the implementing body.<sup>14</sup>

Incremental housing formalizes the squatting process. Squatting happens when households illegally settle on vacant land by building rudimentary shelters. A large proportion of Iraq’s IDPs squat on public land. Based on whether or not families are evicted, dwellings are consolidated. Other households join the locality and a high-density community is formed out of cohesion during the illegal squatting process.<sup>15</sup> With squatting, the development of informal settlements happens incrementally.

Informal settlements are made up of flexible, responsive and affordable housing processes. Housing provisions populate a settlement organically, enabling families to extend themselves and improve their dwellings over time. However, as a consequence of legal insecurity, informal settlements tend to be underserved by urban infrastructure.

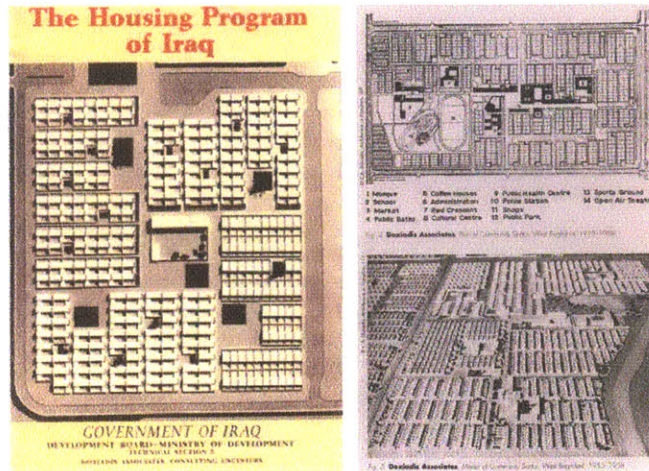
Due to the insecurity of tenure, an overwhelming constraint is placed on investment in informal settlements. However, the resultant low-cost allows for shelter to be affordable to the poorest families. The constant threat of eviction or demolition is what leads to slums within informal settlements and urban areas. Slums combine, to various extents, the following characteristics: inadequate access to safe water, inadequate access to sanitation and other infrastructure, poor structural quality of housing, overcrowding, and insecure residential status. Many settlements in the non-durable category are currently slums.

Within the incremental housing model, developed by academic practitioners as a consequence of observing informal processes, each household is given the opportunity to plan and implement their housing provision according to specific needs, priorities, and capacities over time. The basic house, sometimes given to a user, offers a minimal secure core. This facilitates flexibility for households to plan for specific shelter needs within their own capacity, providing a “pay as you go” model for housing. The sequential organization of a home divides the cost of construction for the unit over time based on the spatial needs of a user. Not only are houses tailored to meet the spatial needs of inhabitants, but also incremental units are built to accommodate the changes of a household as resources become available.<sup>16</sup> Furthermore, a family is given the opportunity of ownership with minimal financial stability. The incremental housing model also delivers a basic housing unit in a limited timeframe.

14 Rabbat, Nasser O., and Reinhard K. Goethert. “More Than A Pattern: The Contributions of the Courtyard House in the Developing World.” *The Courtyard House: From Cultural Reference to Universal Relevance*. Farnham, Surrey, England: Ashgate, 2010. 7. Print.

15 Wakely and Riley. 2.

16 Tinker, Irene, Mayra Buvinić, and Aprodicio Laquian. “Whither Site and Services? Habitat International.” *The Many Facets of Human Settlements: Science and Society Papers Prepared for AAAS Activities in Connection with HABITAT, the U.N. Conference on Human Settlements*. Oxford: Pergamon, 1977. 291-301. Print.



DA HOUSING PROJECT IN BAGHDAD SOURCE: GOVERNMENT OF IRAQ

## 2.2 HISTORY OF SOCIAL HOUSING IN IRAQ AND THE DEVELOPMENT OF THE INCREMENTAL MODEL

1940s

*Research during the 1940s.* Housing for the poor was first brought into a scholarly light in 1946 by Charles Abrams. Referred to by some as the Dean of Social Housing experts, Abrams continued to study the subject in developing contexts.<sup>17</sup> His work rippled into the realms of social science, anthropology, urban planning, and architecture, as all of the fields began to question and analyze rapid urbanization in developing countries to create a momentum that would result in a housing movement.

*Housing trends in Iraq.* Recovering from a poor economy in the 1930s, due to a lack of wealth in the nation, the Iraqi government had not conceived a master plan. Under the British installed Hashemite monarchy, the 1940s represented a post-independence period in Iraq. Oil had been recently nationalized and the country focused on how to spend a portion of their newly swollen budget on various programs of infrastructure and services.

1950s

*Research during the 1950s.* In the 1950s, inside of Iraq and globally, the population surges that resulted from migration patterns brought social housing under an international spotlight.

In social housing trends, architect John Turner served as the key theorist regarding incremental housing. He began his work in the mid-1950s with anthropologist William Mangin on upgrading projects in the *barridas* of Peru.

Parallel to these academic events, an interest in vernacular self-building occurred within the field of architecture. The emergence of self-help housing incited a time for philosophical debates around the subject that launched in the 1950s. UN missions that began in 1955 laid the foundation for the theorized sites-and-services scheme, formally referred to as the “land-and-utilities schemes”.

<sup>17</sup> Abrams, Charles. *The Future of Housing*. New York: Harper & Bros., 1946. Print.

While most governments found themselves searching for politically acceptable solutions to mitigate low-income housing concerns, most informal settlements in urban areas built themselves up incrementally. Low-income homeowners and builders started with an improvised basic shelter and expanded units over time as unstable incomes were generated. With time, the small units could be – and often were – transformed into middle-income homes. Value of the units increased, rather than decreased as they do in typical government provided social housing units. The unplanned settlements slowly evolved into viable neighborhoods in cities to extend to sites-and-services.<sup>18</sup> Not all dwellings were safe, however, as some lacked durability and were unsafe for inhabitants.

*Housing trends in Iraq.* Social housing was introduced to Iraq in the 1950s. Housing was of concern to the Iraqi government due to a population surge that had prevented the nation from looking modern, which was a priority for the Hashemite monarchy. During the 1950s, Baghdad's population had soared to 1.62 million inhabitants from the post WWI figure of 200,000. The squatter problem began to gather great momentum at that point, as low-income rural migrants formed squatter settlements. The newly founded settlements shed light on the lack of planning in Baghdad for the low-income sector.

Throughout the 1950s, squatter settlements continued to populate the periphery and open spaces of Baghdad. Many squatters settled in available space in the city, creating clusters and kinships in these concentrations. The squatters offered competition for low paying jobs, but were also feared and resented. They posed health problems, as they lacked proper public utilities. By 1950, 44,000 *sarifa* (reed and mud houses) comprised 45% of the total houses in Baghdad. By 1957, 57% of the industrial workers in Baghdad had been squatters.

The housing problem was viewed as an ideal platform to advance socioeconomic reform by the Hashemite monarchy, which hoped to amalgamate the nation's disenfranchised groups and tribes to secure social stability. The Iraqi Development Board (IDB), funded by newly nationalized petroleum money, was assembled to ensure the development of Iraq and ultimately serve as the strategy to reach the nation's political goals. One of the IDB's areas of focus had been affordable housing.

Developing housing had been an area for symbolic political progress in Iraq. The government was looking to counter any threats of insurrection through "widespread and visible benefits quickly."<sup>19</sup> The IDB envisioned a progressive Iraq, emerging from a medieval shell and proceeding on a grand scale down the path to modernity. To address concerns of social housing in vogue, the IDB commissioned renowned Greek architect Constantinos Doxiadis to implement affordable and market rate housing within the agenda of the time.

With the appointment of Doxiadis Associates (DA), the National Housing Program of Iraq had been established. The program was conceived as a long-term plan to shape Iraq's physical environment. The goal was to manage urban population and control future developments. According to a formal document by Iraq's government, "optimum living conditions, however, were planned for even the lowest income groups, and special care has been paid to the orientation of houses, so that good ventilation and proper insulation are obtained."<sup>20</sup>

However, when the Hashemite monarchy was overthrown by General Abd al-Karim Qasim, the DA commission had been halted. By May of 1959, with several hundred units to show for their work, DA left Baghdad. While concerns of

18 Gattoni, George. "A Case for the Incremental Housing Process in Sites-and-Services Programs and Comments on a New Initiative in Guyana." *Inter-American Development Bank* (n.d.): 22.

19 Lord Salter, *The Development of Iraq: A Plan of Action* (Baghdad-Iraq Development Board, 1955). 118

20 The Republic of Iraq, The Republic of Iraq and Doxiadis Associates. *Housing Program of Iraq*. N.p.: n.p., 1967. Print. 10.



low-income housing were introduced in Iraq, they were never fully addressed.

1960s

*Research during the 1960s.* Meanwhile, outside of Iraq, public housing policies and private sector practices began to realize the ability of affordable housing groups to earn, save, borrow, and invest in housing.

As trends in self-help housing evolved, the exhibition “Architecture Without Architects” at New York’s Museum of Modern Art highlighted the connection between popular housing expressions and anonymous architecture. Designers and academics alike realized that while conventional mass housing projects were laden in administrative, financial, and cultural problems to house a growing urban population, a significantly less formal housing process emerged that emphasized community action and provided the bulk of housing.<sup>21</sup>

With this realization, many scholars and practitioners turned to squatters and informal settlements in the urban peripheries of developing countries for insights and policies. Academics sought relationships between cultures and their own vernacular expressions of housing.<sup>22</sup>

Abrams expounded the fundamental principles of unassisted and assisted self-help housing principles.<sup>23</sup> He discussed the method of housing construction by people without access to finance as installment construction, also referred to as serial construction.<sup>24</sup> After the legal or illegal inquisition of land, Abrams identified that households built sections that they could afford in developing and developed countries. Abrams noted that squatters, like legal homeowners, expanded their dwellings according to their needs. He also observed that long lapses occurred between concentrated bursts of construction activity. To Abrams, this represented a lack of access to sufficient savings for total construction or a lack of access to appropriate financial packages.<sup>25</sup>

Turner, also crucial in the development of incremental housing theory, referred to this phenomenon as “progressive development.”<sup>26</sup> Turner observed that individual households, or bridge headers, were the first families to move into an urban area to secure informal land.<sup>27</sup> Turner noted a correlation between social processes and the gradual improvement and expansion of shelters, or consolidation. He observed that when left to their own devices, people tended to produce the most efficient housing solutions over time and through self-help and mutual help. Mutual help is the process in which families work together to build housing. Turner characterized housing as a “verb” rather than a “noun,” he believed that housing should aid the people. This implied that housing is more important in what it does rather than what it is. The construction process became more visible to policy makers and designers, who started to consider the participation of low-income households in modifying their own houses and plots.

In the spirit of community action, Turner emphasized the assertion that the state and other interested parties in the private sector should relinquish control of the housing process to the community. Turner urged for as much choice and freedom to be granted to the occupants of dwellings as possible, formal and informal.

21 Rudofsky, Bernard. *Architecture Without Architects: A Short Introduction to Non-Pedigreed Architecture*. New York: Museum of Modern Art, 1965. Print.

22 Rapoport, Amos. *House Form and Culture*. Englewood Cliffs, NJ: Prentice-Hall, 1969. Print.; Alexander, Christopher. *Houses Generated by Patterns*. Berkeley, CA: Center for Environmental Structure, 1969. Print.

23 Gattoni, 2.

24 Abrams, Charles. *Man's Struggle for Shelter in an Urbanizing World*. Cambridge, MA: M.I.T., 1964. Print. 174.

25 Abrams (1964), 175.

26 Turner, John F. C. *Housing By People*. N.p.: Pantheon, 1977. Print. 24.

27 Turner, John F. C., and Robert Fichter. *Freedom to Build; Dweller Control of the Housing Process*. New York: Macmillan, 1972. Print.

Parallel to the theorization, as colonial powers gradually resigned control of developing countries globally, a trend affected many African countries in the 1960s that questioned the sustainability of government housing practices at the time. The trend synthesized into a general realization of the limitations of mass low-cost housing provisions at the state level.<sup>28</sup> As national budgets dwindled, fewer resources had been allocated toward affordable housing, despite its growing demand in urban areas with global migratory trends.<sup>29</sup> Governments quickly realized that full provision housing could not be a viable option.

Throughout the theorization, spontaneous settlements continued to proliferate many regions of the developing world, further highlighting the failure of government to provide appropriate housing provision at the rate of migration. Squatters populated untitled land and continued to construct illegally and sub-divide internally. This resulted in large proportions of urban residents living in rudimentary shelter with little or no access to formal municipal services.<sup>30</sup>

The self-help housing movement further evolved when theorists took the next step by moving from recognition of the advantages and limitations of informal housing processes to suggest concrete ways in which these processes could be harnessed by public and private sectors as well as the international donor community. Abrams described the core housing approach in detail. He identified that a core house should be large enough to accommodate a typical family from the outset. The core was to be designed for extension by the household with appropriate training or locally settled small contractors. Abrams identified that loans made available in installments should finance the core and its extensions. Units were to be designed to provide comfort in local climatic conditions. They were also to have access to water and sanitation from the time of occupation.<sup>31</sup>

The biggest innovation in this theory was the enablement of self-help contribution by the occupying household. The financial innovation was the division of financial responsibility between the state and the household. The state could not afford full housing provision, and lower standards needed to be accepted while houses reached completion with basic standards.<sup>32</sup>

*Housing trends in Iraq.* Following the regime change of the Hashemite monarchy in Iraq, Iraq's government turned to socialism. At this time, land use, planning, and zoning had all been centrally and tightly controlled by the government. While Baghdad was rapidly expanding, the city had been planned for low-density residential areas, low-density infrastructure, and low-density highways.

Consequently, Baghdad faced acute urban problems, including inadequate transportation, a shortage of urban facilities and services, a scarcity of urban land, and a shortage of construction materials. These urban problems aggravated the needs of the low-income sector. Iraq faced a housing shortage that required the utilization of a high percentage of land, provision of housing units, development of utility networks and urban services, and access to employment. Iraq saw this problem as one that could be mitigated through multi-story housing projects.<sup>33</sup>

28 Turner (1977), 35-30.

29 Hamdi, Nabeel. *Housing Without Houses: Participation, Flexibility, Enablement*. New York: Van Nostrand Reinhold, 1991. Print.; Gilbert, Alan, and Josef Gugler. *Cities, Poverty, and Development: Urbanization in the Third World*. Oxford: Oxford UP, 1982. Print. 6.

30 Alan and Gugler, 114.

31 Abrams, C. (1964), 176-177.

32 Ward, Peter M. *Self-help Housing: A Critique*. London: Mansell, 1982. Print. 202-203.

33 Awni, Muhammad H. "Urban Case Studies: Baghdad, Iraq. Low Income Dwelling Surveys and a Site and Services Proposal." Thesis. Massachusetts Institute of Technology, 1979. Print. 6.

The government built conventional public housing buildings, primarily in Baghdad. Although Iraqis had traditionally lived in single household dwellings, the government built multi-story, walk-up units to control urban sprawl and to lower costs of urban services.

The government also employed other methods to deal with the housing crisis. It offered programs that supplied serviced residential land and financial packages for housing associations to construct standardized and detached homes in the peripheries of cities. Other programs offered subsidies with free plots of land, loans, and long-term amortization periods. As in many countries where this was being done, beneficiaries tended to be government employees loyal to the regime. Ministries and state-owned construction companies built staff housing.

1970s

*Research during the 1970s.* Outside of Iraq and in the world of housing, due to unstoppable growth and urbanization in cities, it became clear that it was impossible to respond to the housing demands of the developing world with complete housing units. Consequently, the 1970s resulted in further development of conceptual frameworks for community action and self-assisted housing, and ultimately the implementation of such programs.<sup>34</sup> Theorists warned that public housing problems and master plans did not work for the growing population of the poor. They hypothesized that, with the support of the already existing strategies implemented by the poor, housing problems could be improved. The 1970s represented a “learning by doing” period for incremental housing practices. Many self-help housing strategies for the developing world were published with flexible and basic housing programs.<sup>35</sup>

These programs overcame the major constraints that limited the poor from participating in formal housing and land markets, such as the lack of credit and subsidies, lack of tenure, the scarcity of low-cost affordable land with municipal services, and high official permitting and transactional costs.

These programs, referred to as sites-and-services programs, would incorporate the incremental approach for building housing subdivisions. They would introduce infrastructure and municipal services gradually to reduce initial development costs, allowing government agencies, municipalities, and service providers to build up delivery capacity to add more infrastructure and services as the neighborhoods’ needs grew. The incremental strategy would also speed up the production of housing.<sup>36</sup> The movement led to the development of experimental housing practices, emphasizing traditional technologies and low-cost materials.<sup>37</sup>

With all of the housing studies, and inspired by Turner and colleague Horacio Caminos, the incipient urban development department at the World Bank built the first sites-and-services project in Africa in the 1970s. The objective of sites-and-services was to provide affordable housing to the greatest number of low-income households that were migrating from rural areas into urban areas.<sup>38</sup> Along with making land available for housing, this model encouraged home-buyer-builders to incrementally construct both their houses and neighborhoods. During this movement, Turner published his observations and did more empirical work in the USA and Mexico. Turner’s “Housing by People” compared fundamental qualities of unassisted self-help housing to formal state attempts for low-income households in 1976.

34 Alexander, Christopher, Sara Ishikawa, and Murray Silverstein. *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford UP, 1977. Print; Alexander, Christopher, Howard Davis, Julio Martinez, and Donald Corner. *The Production of Houses*. New York: Oxford UP, 1985. Print.

35 Caminos, Horacio, and Reinhard Goethert. *Urbanization Primer: Project Assessment, Site Analysis, Design Criteria for Site and Services of Similar Dwelling Environments in Developing Areas*. Cambridge, MA: MIT, 1978. Print.

36 Gattoni, 5...

37 Fathy, Hassan. *Architecture for the Poor: An Experiment in Rural Egypt*. Chicago: Univ. of Chicago P., 1973. Print.

38 Chavez, Roberto. “Incremental Housing: The Past and Future Dwelling Solution for the Poor.” (n.d.): 2. Print.

*Housing trends in Iraq.* Meanwhile, Iraq's housing trends of the 1960s continued into the 1970s. Iraq continued to build multi-story affordable housing units until 1978, when the option would prove to be too expensive to meet the growing demands of squatters.<sup>39</sup> This option was also unaffordable for lower income groups and some middle-income groups.<sup>40</sup>

In the late 1970s, when the Saddam Hussein regime took over Iraq, the Iraq General Housing Plan was stopped. A national housing plan would not be considered again until today.

#### 1980s

*Research in the 1980s.* The 1980s served as a period of "learning by doing" for incremental methods. For international development agencies, such as USAID and the World Bank, self-help, flexible, and progressive strategies for housing were taken a step further by enabling the urban poor to build environments while promoting development.<sup>41</sup> This would continue until the demise of the sites-and-services approach, also in the 1980s, at the World Bank. The process had been seen as too slow and insufficient in scale considering the large number of global squatters. There was also a shortage of land that was too challenging to cope with.

*Housing trends in Iraq.* With the Iran-Iraq war depleting much of the nation's resources throughout the 1980s, Iraq faced a progressive slowing of overall planning and development, including support for the housing sector.<sup>42</sup> Successive years of war reduced the ability of the government to maintain existing infrastructure. Building standards were not upheld, resulting in structures with poorer construction quality than earlier times.

The only support for housing through the government was the allocation of vacant, poorly serviced residential land at the periphery of cities. This land was given to regime supporters. During the 1980s, 80% to 90% of housing in Iraq had been developed through the public sector. Housing was built by small-scale public contractors, and units were commissioned by individual landowners.<sup>43</sup>

During this period, Iraq's first small and sparsely settled informal settlements emerged. The regime lacked a policy related to housing for the poor, and the Iraq-Iran war devastated the nation's infrastructure.

#### 1990s

*Research during the 1990s.* The 1990s in incremental housing was a decade for a small but consistent group of architects to further incremental housing concepts. It received limited interest from professionals in the developing and developed world, as the scale and land problems of the 1980s had not been solved. However, the informal sector continued to build their units incrementally.

*Housing trends in Iraq.* In the 1990s, Iraq continued to experience the significant shortfalls in housing supply initiated in the 1980s. The Gulf War of 1991 resulted in an unprecedented amount of bombing in Iraq, damaging the nation's infrastructure. This was followed by international sanctions that limited what Iraq could import. Under sanctions, housing production plummeted by 1996, when only 400 housing units were built in the entire nation.<sup>44</sup>

39 Gattoni, 2.

40 Awni, 6.

41 Koenigsberger, Otto. "Third World Housing Policies since the 1950s." *Habitat International* (1986): 27-31. Print.

42 *The State of Iraqi Cities Report 2006/2007*, 90.

43 *Iraq Housing Market Study Main Report*, 2011, II.

44 *The State of Iraqi Cities Report 2006/2007*, 89.

Still under Saddam, Iraq distributed poorly serviced plots to regime supporters. This process peaked in 1998. The government distributed peripheral residential land to favored soldiers, but the neighborhoods were rarely serviced and lacked most amenities. Until today, the neighborhoods are sparsely settled.

Throughout the 1990s, displacement took place in various degrees throughout Iraq. The small and isolated informal settlements first seen in the 1980s became more common in the 1990s. Displacement throughout this period had been successive and is defined as Phase I by the Government of Iraq National Policy on Displacement, as it defines displacement before 2003.<sup>45</sup> During Phase I, an estimated 1.2 million Iraqis were displaced.

Meanwhile, the DA project of the fifties had deteriorated into the slum known today as Sadr City. Sadr City is home to over 1,000,000 residents and is known as a bastion of violence due to the unsafe circumstances in the nation.

#### RESEARCH DURING THE 2000S

*Housing trends in Iraq.* In 2000, the housing sector was included in the UN Oil-for-Food Programme. This allowed Iraq's government to import essential building materials, equipment, and spare parts for the construction industries. This allowed investment and shelter services to be improved. As compared to the 400 residential units built in 1996, 15,000 residential units were built in 2001 and 24,000 in 2002. By 2004, up to 8,000 residential units had been built. This was sufficient to keep up with population growth. Though this helped mitigate the housing problem slightly, Iraq still remained in a crisis.

In the informal sector, Iraq's Resolution No. 156 legalized most of the existing informal settlements under the Hussein regime.<sup>46</sup>

The aggravated history of social housing in Iraq was further exacerbated by the American war on Iraq in 2003. With the fall of the Hussein regime, there had been a large proliferation of informal settlements and displacement throughout Iraq. The poor general conditions of the country before 2003, due to the legacy of the previous regime, were exacerbated with increased violence and displacement. This would lead to Phase II of displacement in Iraq's history, according to the Government of Iraq National Policy on Displacement.<sup>47</sup> Phase II would be the result of three main causes: the 2003 invasion, the subsequent internal conflict that followed, and general urban migration. The second event is especially characterized by the Samarra bombing in 2006. Due to the three triggers, many Iraqis had been forced into illegally inhabiting public government land as internally displaced persons. Meanwhile, due to urban migration to Baghdad, large fluxes of people from the countryside and rural areas were moving to the capital in hopes of better livelihoods.

Phase II of displacement has resulted in an estimated 1,332,382 displaced Iraqis since the start of the 2003 conflict.

Today, over 250 IDP settlements exist in Iraq. In the settlements, IDPs have initiated their own housing provisions. The government has written policy (Section 2.3) to address the IDP crisis in Iraq, but has not implemented large-scale solutions to address the crisis yet.

<sup>45</sup> Ministry of Migration and Displacement. (2008). *Iraq National Policy on Displacement*. Baghdad, Iraq: Republic of Iraq.

<sup>46</sup> *The State of Iraqi Cities Report 2006/2007*, 97.

<sup>47</sup> *Iraq National Policy on Displacement*, 2008.

The Ministry of Housing has allocated a percentage of land to informal settlement, and has even offered empty plots of land to IDPs. However, most IDPs are content where they live now. This is likely a result of security concerns, which is a primary priority to IDPs and Iraqis in general.<sup>48</sup>

The general decline in public spending from a series of disastrous wars, overcrowding, and a lack of maintenance have contributed to the deterioration of Iraq's housing stock and infrastructure. Limited autonomy and accountability at the local level within a highly centralized system of governance has further exacerbated the decline.

At a larger scale, Iraq is currently three million units deficient of the current housing demand. The Government of Iraq has realized that centralized systems of housing delivery cannot address the country's increasing housing deficit.<sup>49</sup> Adequate housing is a priority in Iraq for all income groups, as there is a severe shortage in the sector. The current demand indicates that Iraq will need to build two hundred thousand units annually to be satisfied.

Currently, only one-third of all households in Iraq are connected to primary services, such as piped water, sewerage, electricity, and telephone networks. Housing on the peripheries are even less serviced infrastructurally.<sup>50</sup> Fifty percent of all Iraqi households report daily problems with water, 36% report daily problems with sewage, and 24% of Iraqi households are not connected to a sewerage system at all. Thirty four percent have raw sewage in the streets and around their houses due to sporadic waste collection. Electricity is also cited as a large problem, as the public electric supply only accommodates Iraqis for an intermittent amount of hours per day, particularly during the summer when electrical systems are overloaded with high energy consumption due to extreme heat.<sup>51</sup> Likewise, in the general housing market, 50% of Iraqi households need bigger, better, or more housing.<sup>52</sup>

Understanding past strategies of housing in Iraq reveal that incremental housing has never been widely employed by the government. However, current policy encourages the involvement and participation of Iraqis in their own housing provisions.

Considering the failures of previous social housing models, perhaps incremental housing could be a viable solution to upgrade certain IDP settlements. With eroded trust in Iraq, incremental processes may prove to be more successful in environments that already exhibit strong social networks. With community cohesion and training in vocational employment skills, a community may have the capacity to upgrade itself while providing livelihoods.

48 "Remarks from the Deputy Minister of Migration and Displacement." Proc. of Initiating Durable Shelters Solutions for IDPs and Returnees – Progress Review, General Secretariat for the Council of Ministers - March 27th, 2013, Baghdad. N.p.: n.p., n.d. N. pag. Print.

49 *Iraq National Housing Policy*, 2013.

50 *Iraq National Strategy: Longer-Term Shelter Solutions for People Affected by Displacement*, 2011, 16.

51 *Iraq Housing Market Study Main Report*, 2010, II.

52 *Summary Proceedings of Workshop Addressing IDP Camps and Informal Settlements in Baghdad*, 2011.

## 2.3 SUMMARY OF CURRENT IRAQI HOUSING POLICIES

There are two key documents within Iraq's various policies that address displacement: the National Policy on Displacement, and the National Housing Policy. The Constitution also addresses housing.

### 2.3.1. ARTICLE 30 OF THE CONSTITUTION OF IRAQ

Article 30 of the Constitution of Iraq guarantees to individuals and families “the basic requirements for living a free and decent life, and shall secure them suitable income and appropriate housing.” It aims to provide those without housing provision. It offers “housing and special programs on rehabilitation” on the basis that the eviction of informal settlers is contrary to the Constitution, especially without a reasonable alternative from the state. Constitutional law does not protect squatters on private land, but it does require the state to assist those evicted in obtaining suitable housing. The state informally turns a blind eye on squatters in public land today. The implied permission by the state gives rights to the occupant not to be removed from a public settlement until an alternative is provided.

### 2.3.2 IRAQ NATIONAL HOUSING POLICY:

The Iraq National Housing Policy states broad parameters for the development of a housing sector in Iraq. It provides the wider policy framework for a long-term shelter strategy for the nation. The government also identifies that it lacks established procedures for improving or redeveloping unplanned systems.<sup>53</sup>

With the major problems identified, the National Housing Policy aims to facilitate access to decent housing for all Iraqis. The policy defines adequacy as the following: space, protection from elements, access to infrastructure, access to social services and employment rates.<sup>54</sup>

The policy explicitly underlines focuses on addressing the needs of groups that cannot afford suitable housing. It identifies six categories of people who are eligible to receive government housing: IDPs, families of martyrs of the ex-regime, prisoners of the ex-regime, government employees, journalists in the union, and educational staff at public universities.<sup>55</sup>

Through the policy, the government has expressed a demand in housing that can be fulfilled through participatory approaches. It also focuses on the ability of homeowners to improve and expand existing shelter.<sup>56</sup>

<sup>53</sup> *Iraq National Housing Policy*, 2013, 9.

<sup>54</sup> *Iraq National Housing Policy*, 2013, 9.

<sup>55</sup> Al-Musawi, Abdul-Karim S. “IDPs in Baghdad.” Personal interview. 15 Dec. 2012.

<sup>56</sup> *Iraq National Housing Policy*, 2013, 9.

### 2.3.3 IRAQ NATIONAL POLICY ON DISPLACEMENT

Iraq's National Policy on Displacement addresses displacement as follows: "...displaced persons, like all other residents of Iraq, enjoy basic rights guaranteed by the Iraqi Constitution, national legislation and international law..."<sup>57</sup>

It calls for durable and adequate housing for Iraqis and gives the following definition to durable solutions: Durable solutions are based on three elements, first "long-term security," secondly "restitution of or compensation for lost property," and thirdly "an environment that sustains the life of former displaced persons under normal economic and social conditions."<sup>58</sup> For the purpose of this thesis, the third definition of durable solutions – "an environment that sustains the life of formerly displaced persons under normal economic and social conditions" – is defined as infrastructure, housing, and social networks.

### 2.4 PROS AND CONS OF INCREMENTAL HOUSING IN IRAQ

While families in IDP settlements have taken it upon themselves to build their own housing provisions, demonstrating the viability of incremental processes, incremental housing methods have drawbacks.

The main strength of incremental housing in the Iraq context is the speed in which core units can be constructed. It reduces up-front costs and future costs, which allows building to be more affordable for homeowners, local governments, and service providers. Incremental housing fits the evolving needs of low-income communities, particularly in the Iraq context where the nuclear family expands a unit as it expands in number. Typically, traditional Iraqi families expand a unit as a member gets married. It is common for three generations of one family to live under one roof. Therefore, incremental housing methods do not disturb traditional cultural family intricacies of Iraq.

Another Iraq specific advantage to incremental housing is a government identified issue: Iraq lacks a large-scale financing program for individuals to afford market-rate housing.<sup>59</sup> This may be why squatter settlements have found incrementing successful, with the "pay as you go" model that occurs in informal settlements. Incremental methods are ideal for IDPs with inconsistent salaries, common amongst IDPS due to displacement.

Incremental housing methods offer households legitimate ownership with rights and obligations. This satisfies the most difficult needs of individuals and communities: land with tenure and security.

The incremental housing process also engages the community and allows participation, production, and management of a settlement. It allows for households to participate in the incremental development of neighborhoods, while a local system of good governance ensures transparency and accountability in decision-making.

Through encouraging cooperation by economic development, local communities are built and strengthened. By creating such job opportunities through the provision and training of technical support, household incomes can be increased.

In Iraq, the strengthening of local communities might create a compelling case for host communities to be more amicable to IDPs, as IDP settlement may increase infrastructural and community benefits for host communities.

<sup>57</sup> *Iraq National Policy on Displacement*, 2008.

<sup>58</sup> *Iraq National Policy on Displacement*, 2008.

<sup>59</sup> *Iraq National Housing Policy*, 2013, 9.



The incremental housing model also faces challenges. The image of incremental housing is not accepted by many in its initial stages.<sup>60</sup> It requires strong policy and practical commitment from national and local government. The support must continue over time, regardless of government changes and electoral cycles. The policy change must be accompanied by an attitude change, since traditions of community participation do not exist in Iraq. The national housing policy must be pro-poor, equitable, and build on the ability of individuals and municipalities to build incrementally. Policies must exist to make land available for affordable housing parallel to a national settlement upgrading program. Town planning norms, codes, and standards must also support the incremental upgrading process.<sup>61</sup>

Without evaluating the viability of current informal processes by Baghdad's IDPs, the viability of incremental processes as a solution cannot be analyzed.

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60 Gattoni, 7.

61 Gattoni, 7.



## CHAPTER 3: CONTEXT OF BAGHDAD

The third part of the methodology is a screening of settlements that are eligible for upgrade on a Baghdad-wide scale. This chapter looks at Baghdad's IDP context, using the screening criteria for tenure, upgrading, and semi-durability. On that basis, this chapter focuses on the Tisa'a Nissan neighborhood in Baghdad, which has been proliferated with IDP settlements (Figure 3.1). This chapter identifies a particular semi-durable settlement for analysis.

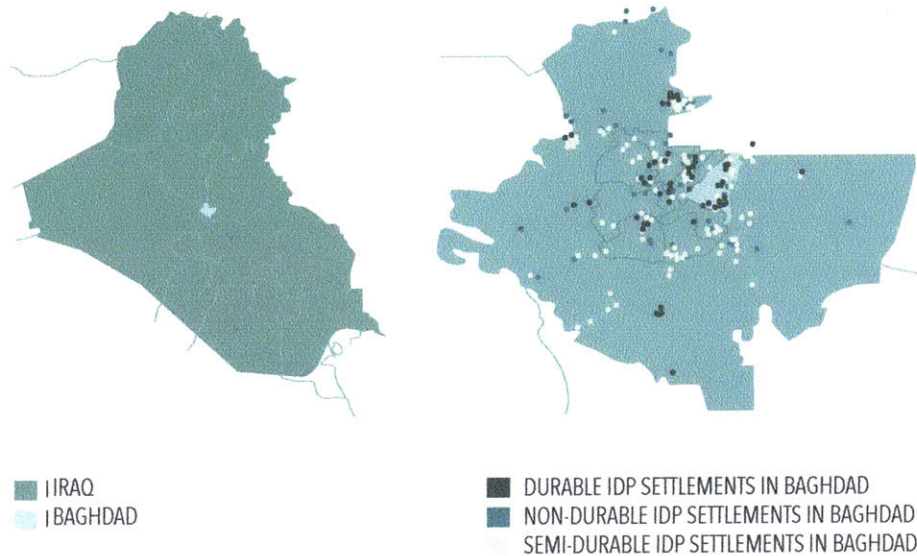


FIGURE 3.1 IDP SETTLEMENTS IN BAGHDAD SOURCE OF DATA: UN-HABITAT

### 3.1 BAGHDAD IDP CONTEXT

Twenty-seven percent of the nation's IDPs reside in Baghdad – the highest percentage in the nation – and 53% of the IDPs originate from Baghdad.<sup>62</sup> Baghdad, Iraq's capital and most populated city, is located in the middle of the country.<sup>63</sup>

With the high cost of land and strict land development and building regulations, legal options for land acquisition in Baghdad are limited. Therefore, squatting, which defines the process when land is staked out and settled without formal title, becomes the most common strategy for migrants seeking a safe space.<sup>64</sup>

62 Ministry of Migration and Displacement, UNDG Trust Fund Project, UN-HABITAT. (2011). *Iraq National Strategy: Longer-Term Shelter Solutions for People Affected by Displacement*. Baghdad, Iraq. Pp 14.

63 *The State of Iraqi Cities Report 2006/2007*, 23.

64 *More Than A Pattern: The Contributions of the Courtyard House in the Developing World*. Pp 7.

While some IDP families are living in rented accommodation, the availability of housing for rent is limited and unaffordable to many IDPs. IDPs have found alternative solutions to housing in informal settlements. Thirty percent of IDP families are squatting informally on public land. Ten percent of IDP housing is self-constructed and on public land. Twenty percent of the self-constructed shelters are made from mud, sticks, and other salvaged materials. Three percent of IDPs have occupied public buildings and former military settlements. IDP families on public land are under threat of formal eviction without alternative accommodation. Nine percent of IDPs have found shelter with host families, relatives, and friends. Two percent of IDP families have built tents of self-shelter on the land of a host family.<sup>65</sup>

Security is the primary factor that prevents IDPs from returning to their place of origin.<sup>66</sup> Other issues include social services. Legal aid is also a large concern, as many families do not have access to their original dwellings due to secondary occupation or destruction of property. IDPs cite access to work, shelter, employment, and food as their most central concerns.

Currently, 50% of IDPs are under eighteen.<sup>67</sup> Thirteen percent of IDP households are female-headed. With female employment exceptionally low in most of Iraq, the burdens upon female-headed households are particularly high. Without a regular source of income or men to work, female IDPs tend to live in accommodation that is shared with relatives or in makeshift informal structures without infrastructure. The lack of secure housing acts as a constraint on employment.<sup>68</sup> In assessing IDP settlements in Baghdad eligible for upgrade, land tenure is a critical component.

65 *IOM Iraq: Review of Displacement and Return in Iraq*, 2010, 100.

66 *Iraq National Strategy: Longer-Term Shelter Solutions for People Affected by Displacement*, 2011, 14.

67 *IOM Iraq: Review of Displacement and Return in Iraq*, 2010, 100.

68 *Iraq National Strategy: Longer-Term Shelter Solutions for People Affected by Displacement*, 2011, 19.



NON-DURABLE IDP SHELTER IN BAGHDAD SOURCE: NAWAR ALANI

### 3.1.2 TISSA'A NISSAN

Baghdad is made up of nine districts. Baghdad's Tissa'a Nissan District has had a significant urban transformation since the occupation due to internal displacement. It has faced expansive unauthorized urban development. Of Baghdad's recorded 250 IDP settlements, 49 have been erected in Tissa'a Nissan, housing 35,688 families within seven neighborhoods. Tissa'a Nissan, which is made up of eleven neighborhoods, only has four neighborhoods without IDP settlements. These neighborhoods are the southwestern, denser, and older part of the district, and sit closer to inner Baghdad. The remaining 201 IDP settlements are distributed among Baghdad's other eight districts.

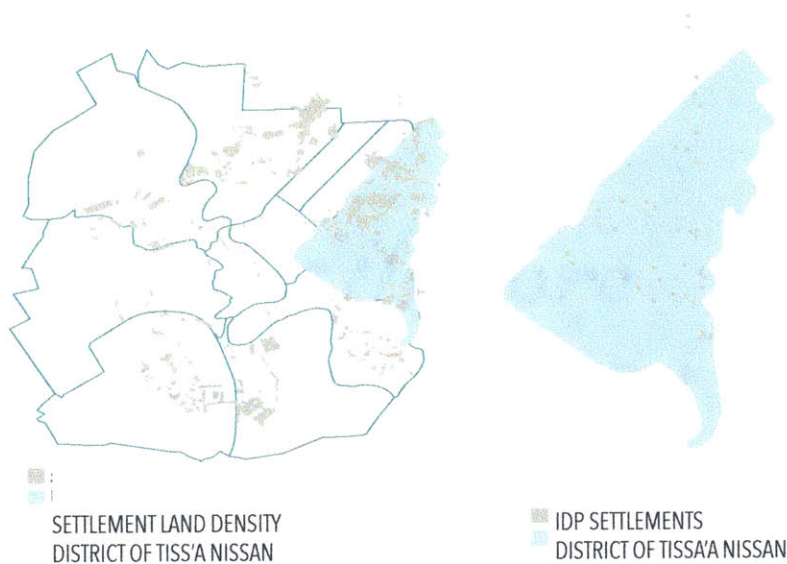


FIGURE 3.2 SETTLEMENTS IN TISSA'A NISSAN SOURCE OF DATA: UN-HABITAT

Settlement size varies. Twenty-six of the 49 settlements have less than 500 families within the settlement. Twelve settlements house 500 to 1,200 families and eleven settlements contain over 1,200 families. The largest settlement, Hat al-Imam in the Baladiyat neighborhood, is home to 4,000 IDP families. The smallest settlements are composed of 40 families. In considering interventions for settlements, size must be a key consideration.

Within Tissa'a Nissan is the Al-Sadeq IDP settlement. Al-Sadeq's characteristics will be evaluated based on indicators of infrastructure, housing, and social networks to understand how the settlement reached semi-durability rather than deteriorated into slums. This will also examine the potential for upgrade and whether it is initiated by users or institutional support.

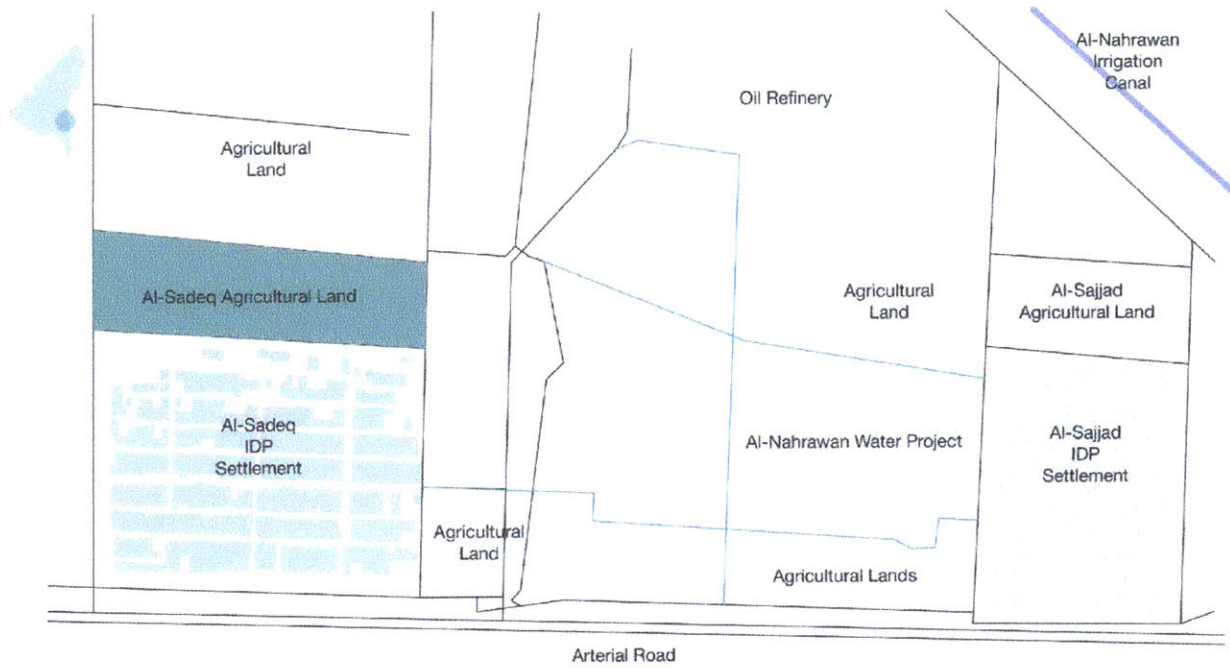


FIGURE 3.3 AL-SADEQ IDP SETTLEMENT

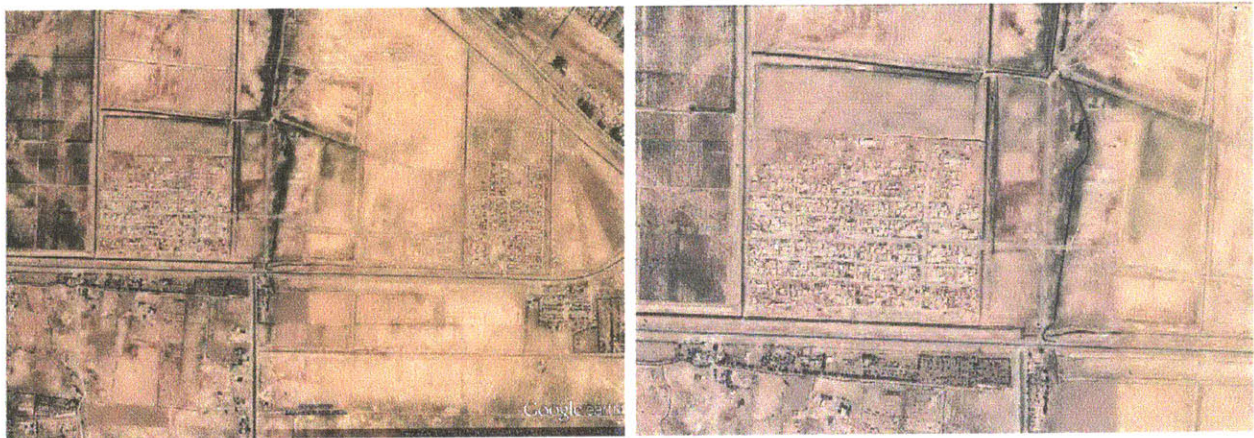


FIGURE 3.4 AL-SADEQ IDP SETTLEMENT AERIAL VIEWS SOURCE: GOOGLE

The second part of this methodology includes, at a holistic level, the five options of intervention for each settlement.<sup>69</sup>

OPTIONS	PROS	CONS	IMPLICATIONS FOR A SEMI-DURABLE SETTLEMENT
LEAVE AS IS	Saves public resources.	Permits conditions to worsen and increases cost of intervention as time increases.	The building conditions at a semi-durable site imply that the infrastructure is informal and intermittent. This is not a viable solution for the purpose of this thesis, which is to examine solutions to mitigate the IDP crisis. Also, the cost of intervention will increase as it exacerbates.
REMOVE	Removes unacceptable structures and allows for city master planning to continue implementation.	Displaces squatters for a second time making them even more vulnerable. Politically, this is not well received.	With removal, IDPs at semi-durable settlements would face secondary displacement, making them more vulnerable. This is not a viable solution for the purpose of this thesis, as it relocates the IDP crisis rather than deals with it.
RELOCATE	Allows for properly planned settlements to be built.	Expensive for household, expensive for government, not uncommon for squatter to sell house and move to new informal settlement.	Over 90% of Iraq's IDPs want to remain in-situ. Relocation is also not cost effective or timely. This is not a viable solution for this thesis, which seeks solutions that leverage already existing successful conditions.
RETURN	Household is able to return and rebuild their lives in place of origin.	Possibly no livelihood and often return to a devastated or squatted in house. Often, return is not a safe option for IDPs as well.	Many former IDP homes are being squatted in. This is not a viable solution.
UPGRADE	Less expensive option than resettlement. Uses existing IDP resources to build quickly. Best for semi-durable settlements that exhibit characteristics sought in this thesis, hypothesized to be incremental housing processes and communication.	Difficult to integrate with city, original landowner may have ownership problems, and host communities are not always receptive to this.	A semi-durable site can leverage various means to upgrade its state to a durable settlement. If it has indeed reached semi-durable without formal support, this is a viable solution for a semi-durable settlement.

OPTIONS FOR INTERVENTION

69 *Iraq National Strategy: Longer-Term Shelter Solutions for People Affected by Displacement*, 2011, 12.

In order for upgrade to occur and before moving forward with an evaluation for upgrade, land tenure must be possible. While the majority of squatting in Baghdad happens on public land, land tenure must be a feasible possibility for the settlement. Without tenure, resources for upgrade can be spent in vain.

The land for tenure must comply with the following five criteria.

CRITERIA 1	CRITERIA 2	CRITERIA 3	CRITERIA 4	CRITERIA 5
Squatting must occur on public land.	Government must approve land use for IDP settlements.	Land must be suitable for residential development.	Land must resolve pending ownership disputes, as the Hussein regime confiscated land from many Iraqis that now have rights to their former land.	Site must be close to trunk infrastructure.

GOVERNMENT REQUIREMENTS FOR TENURE. SOURCE: UN-HABITAT.

In Tisa'a Nissan, the Al-Sadeq Settlement is semi-durable and appears to be best suited for upgrade. It complies with the government screening criteria listed in the chart above. Al-Sadeq is suitable for residential development. Since Al-Sadeq belonged to the former regime, Al-Sadeq does not have pending land and ownership disputes. As a former serviced agricultural site for Saddam's son, Qusay, Al-Sadeq is within the vicinity of basic trunk infrastructure. However, the infrastructure does not service the entire settlement.

The Al-Sadeq IDP settlement will be studied in detail in the next chapter.



## CHAPTER 4: CASE STUDY OF AL-SADEQ

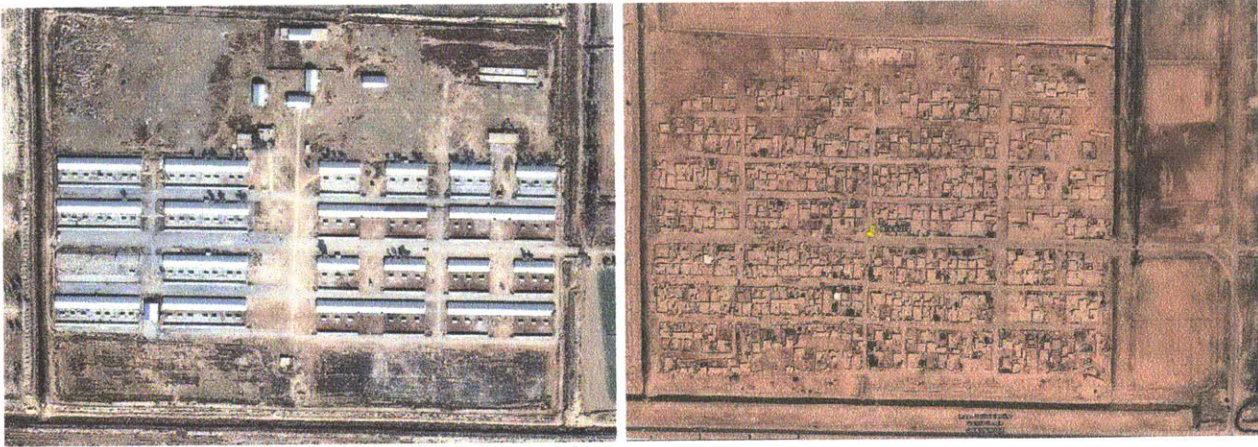


FIGURE 4.1 AL-SADEQ IDP SETTLEMENT IN 2003 AND 2012 SOURCE: GOOGLE

The third part of the thesis methodology is a durability analysis of a specific semi-durable settlement: the Al-Sadeq IDP settlement in Baghdad's Tissa'a Nissan neighborhood. Iraq's National Housing Policy addresses housing, and guarantees "adequacy" and "durability" to Iraqis. Adequacy and durability via the policy serve as the starting point for the durability analysis executed in this thesis. Per the Iraq National Policy on Displacement, durable solutions are based on three elements: "long-term security," "restitution of or compensation for lost property," and "an environment that sustains the life of former displaced persons under normal economic and social conditions." For the purpose of this thesis, the third and most spatial element of durability will be measured to analyze the settlement. This will evaluate the settlement's semi-durable status under the following indicators: infrastructure, housing, and social networks. This thesis hypothesizes that a settlement reaches a semi-durable state by two hypothesized elements: incremental methodologies and community action without either element, a settlement remains non-durable and deteriorates into a slum.

### 4.1 SETTLEMENT CONTEXT AND HISTORY

The Al-Sadeq IDP settlement, 23 kilometers east of downtown Baghdad, is known amongst IDPs as a successful settlement despite its partially implemented infrastructure. Al-Sadeq is located specifically in the Nehrawan District. The settlement is adjacent to a brick plant, an oil refinery, an irrigation canal, and agricultural land. The settlement is peri-urban. Until the Hussein regime was toppled, Al-Sadeq served as an agricultural land for Qusay Hussein, Saddam's son. The settlement grew crops and housed livestock and has since become a residential settlement for 457 families (Figure 4.1).

In 2006, Al-Sadeq's land was re-used and developed informally by migrants from the Diyala Province. Founded by a Sheikh and his wife, the Sheikh, Al-Sadeq was settled as a result of sectarian conflict in Diyala. The Sheikh and his wife fled Diyala with only 70,000 ID (\$60 US). With increased violence, more families from Diyala fled to the safe-haven outside of Baghdad. A network of trust, informally arbitrated by the Sheikh and his wife, was formed within Al-Sadeq. At its inception, Al-Sadeq was formed in a non-durable state. Buildings were pillaged and barely serviced.

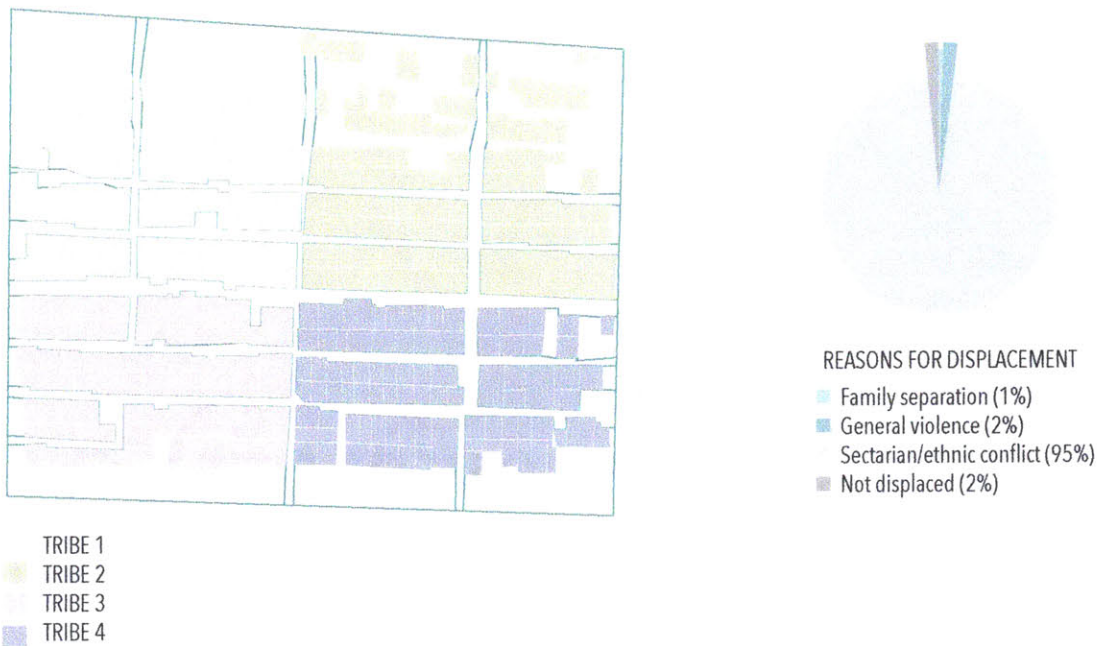


FIGURE 4.2 AL-SADEQ TRIBE BREAKDOWN AND REASONS FOR DISPLACEMENT

In order to provide livelihood, The Sheikha planned to sell vegetables in front of her informal and newly erected home. However, with Baghdad as a dangerous conflict environment, The Sheikha chose to construct a shop within the first story of her home. Al-Sadeq is an insular community, so a home based enterprise ensured her safety. With safety as a primary concern throughout Iraq, the Sheikha's decision was not uncommon. She spent 2006 accumulating funds from neighbors, and due to the social networks in the settlement, she was able to borrow enough funds to build a home based grocery shop. The Sheikha sold produce for six years. By 2012, when the Sheikha's children were old enough to provide sustenance and support her, she retired as an entrepreneur. With time and as finances improved, the Sheikha built and improved her house in the meanwhile. The home effectively went from a non-durable to a durable shelter, incrementally, and received basic infrastructural services over time with community action.

Between 2006 and 2008, four tribes moved to Al-Sadeq to form an informal community and organized themselves based on family roots. Housing at Al-Sadeq is divided into four quadrants based on tribe. With 83% of inhabitants from the agricultural province of Diyala, migrants had been comfortable squatting on the agricultural public land. Settlement in Al-Sadeq is a direct result of the violence, with 95% of Al-Sadeq residents displaced due to sectarian and ethnic conflict. Al-Sadeq has a majority of female-headed households. Many of the women, widowed due to the violence that led to their displacement, migrated to the settlement with their children. Currently, 62% of the households are female-headed and 60% of the inhabitants at Al-Sadeq are under 16 years of age.

The primary priority for most of the IDPs at Al-Sadeq is housing. Al-Sadeq has initiated housing provisions at various levels of durability to meet the housing demand. The housing and infrastructural provisions are satisfactory to the community; 94% of Al-Sadeq's IDPs are interested in integration with the host community rather than resettlement or return to Diyala.



USER-INITIATED CONSTRUCTIONS

AL SADEQ IDP SETTLEMENT	
Total population	3,199 people
Total number of families	457
Total number of units	432
Average persons per household	7
Size of settlement	343,752 m <sup>2</sup>

The layout for Al-Sadeq is an orthogonal grid with a regular street width, regulated by the Sheikh (Figure 4.2). Pre-planned government agricultural plots informed the durability of the settlement. The grid is partially serviced. The land planning from the settlement's antecedent space controls growth, and settlement size can be predicted with ease. This is akin to the starting position of an incremental or sites-and-services model. Combined with participatory community approaches to build the settlement, government planning of the settlement for agricultural purposes helped the settlement reach a semi-durable state.

#### 4.2 DURABILITY ANALYSIS OF INFRASTRUCTURE

When Al-Sadeq was first formed in 2006, the settlement had a partially serviced infrastructure. Infrastructure, as defined by this thesis, encompasses water, sanitation, electricity, drainage, irrigation, trash collection, and road treatment.

Initially, two-thirds of the settlement had access to water. Some of the site had access to electrical services. Sanitation was not a consideration for the site when it was planned, considering its purpose as agricultural land. Four irrigation canals border the peripheries of the site. The site does not have a large-scale drainage mechanism and lacks solid waste collection services. Al-Sadeq residents took action in each of these infrastructural categories to further durability.

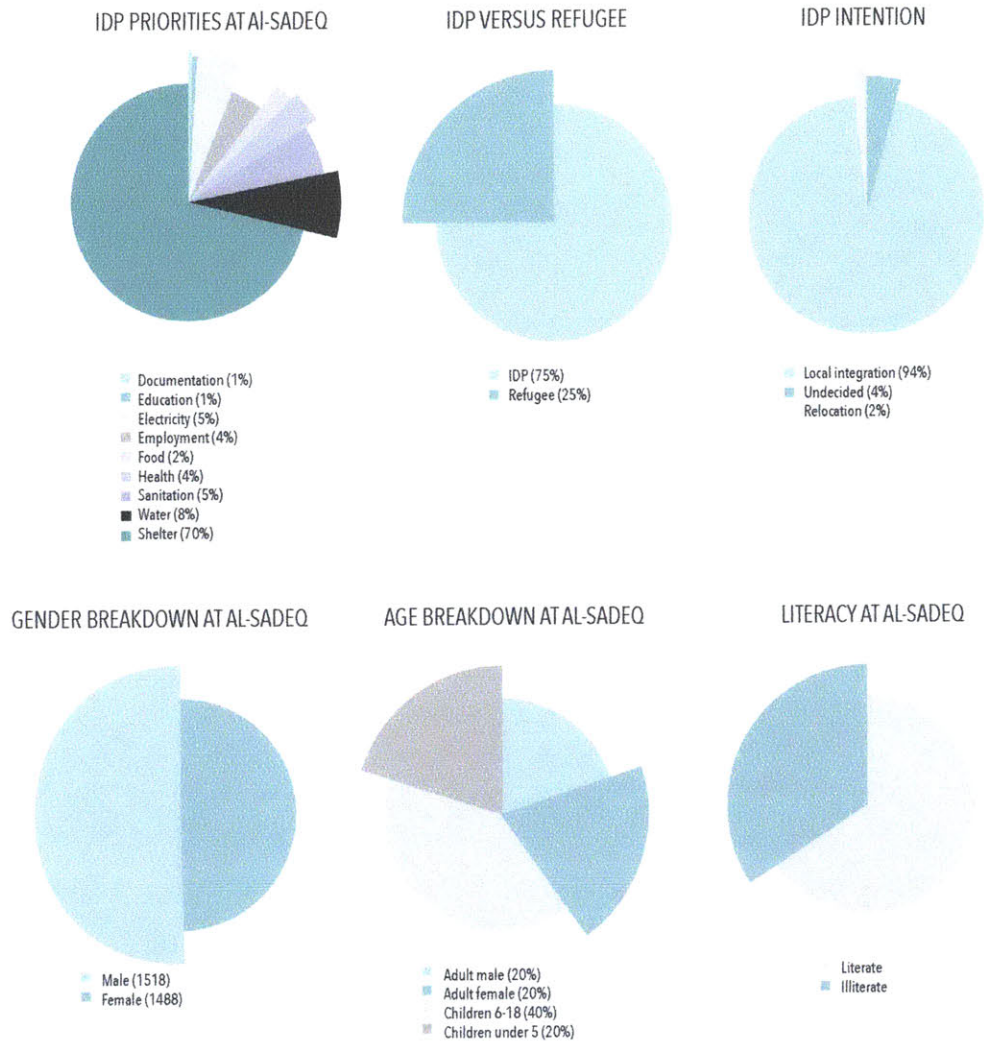


FIGURE 4.3 AL-SADEQ IDP SETTLEMENT STATISTICS



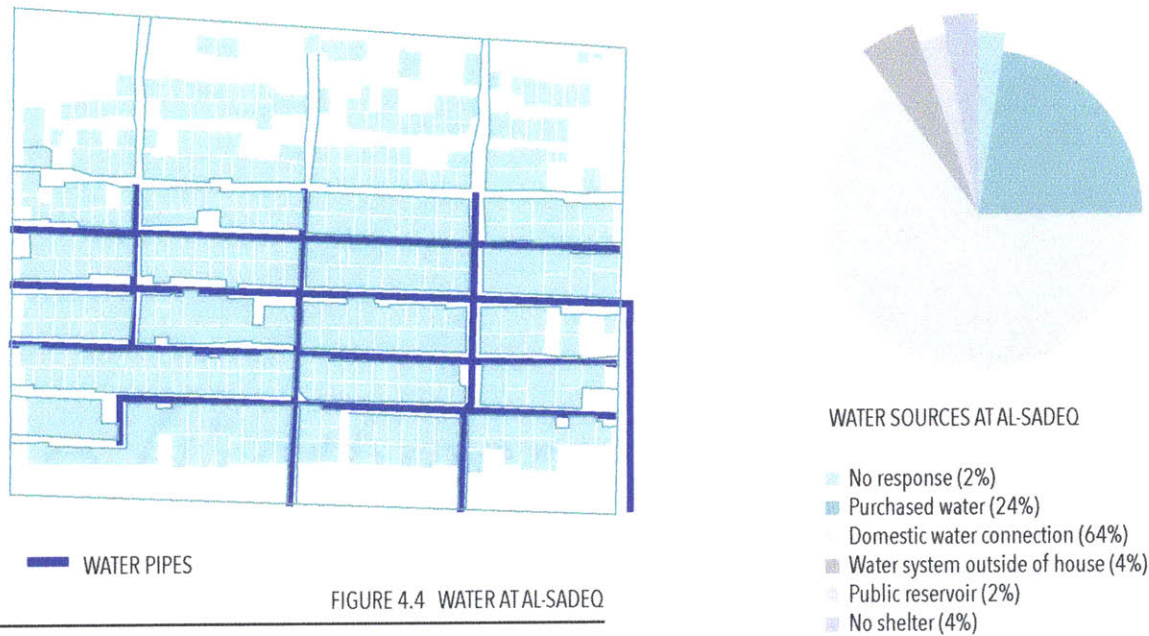
IMPROVED WATER SERVICES, ELECTRICITY, AND CONSTRUCTION

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IMPROVED ELECTRICAL SERVICES

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#### 4.2.1 WATER, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

In Iraq, the water network is outdated and damaged by war. Large-scale purification systems are in need of upgrading, rehabilitating, or rebuilding. Solving water problems is of a high priority for the government.<sup>70</sup> While 79% of Iraqi households have access to treated water supply, half of all urban households in Iraq experience problems with water at least once a week.<sup>71</sup>

With Al-Sadeq having been a government owned agricultural site, three-quarters of the settlement has access to government water lines. Currently, most of Al-Sadeq is serviced through domestic government water connection, with 367 of the 432 units accessing water through such connections. The connections occur through PVC pipes that connect existing water infrastructure to units. The settlement's initially agricultural water supply has been appropriated for use at the domestic level by residents to ensure that the maximum amount of units have access to water supply. A main water pipe, six inches in diameter, is distributed through two inch diameter PVC pipes. Residents did this because government water systems were not designed for the consumption of 432 dwellings. To further satisfy water demands, Al-Sadeq residents have found other ways to supply water. Privately purchased water is the next most popular option, with 133 households contributing to a larger fund for privately delivered water to the settlement. The water is delivered through a large tanker. Twenty-three units have water storage tanks outside of their dwellings, up to three cubic meters in volume. A public reservoir serves as the main water source for 18 families at Al-Sadeq. Over the summer, water demands are not met at the settlement.<sup>72</sup>

The Al-Sadeq community has worked together to satisfy their water demand through appropriating existing water infrastructure and organizing private water services. The processes happened incrementally, over time, and with community action and support. A network of trust and collaboration allowed residents to provide water systems.

<sup>70</sup> *The State of Iraqi Cities Report 2006/2007*, 177.

<sup>71</sup> *The State of Iraqi Cities Report 2006/2007*, 69.

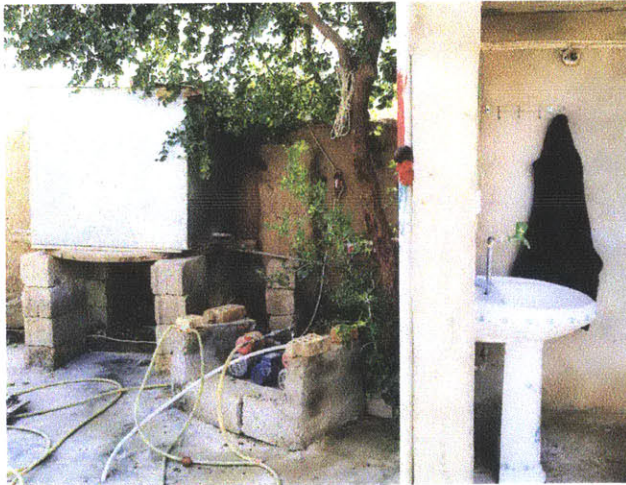
<sup>72</sup> Norwegian Refugee Council. Findings at Al-Sadeq. Raw data. Baghdad, Iraq. 2012.



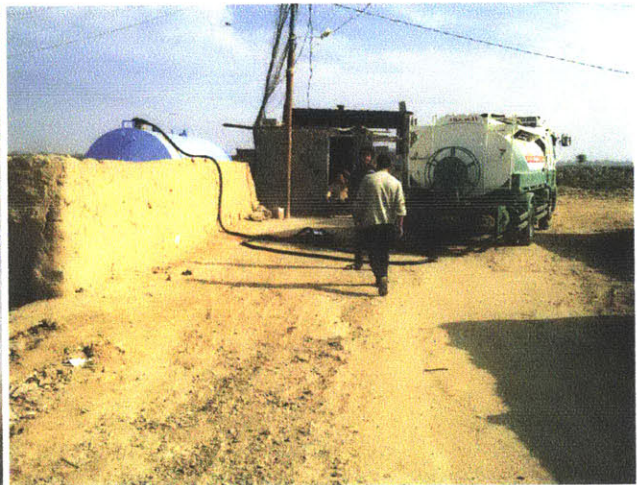
SALVAGED EXISTING WATER INFRASTRUCTURE



WATER STORAGE MECHANISMS



WATER FOR SANITATION AND OUTDOOR USE

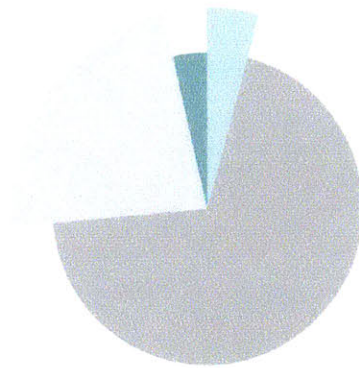


PRIVATE WATER DISTRIBUTOR

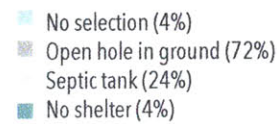


● TYPICAL SANITATION PIT

FIGURE 4.5 SANITATION AT AL-SADEQ



SANITATION MECHANISMS AT AL-SADEQ



#### 4.2.2 SANITATION, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

In Iraq, and everywhere else, human waste is one of the most toxic substances that people can be exposed to on a daily basis. Baghdad is the only city in Iraq with sewers fitted throughout most of the city. However, it was reported in 2003 that 60% of Iraq's water treatment and sewage plants were out of system, and that 500,000 tons of raw sewage were being pumped into the country's rivers and lakes daily. Warfare has destroyed much of the sewerage operations, leaving populations open to widespread infection.<sup>73</sup> Sanitation is one of the greatest concerns in Iraq's residential areas according to inhabitants. There have been priority plans made for rehabilitating and extending sewerage networks and establishing new sewage treatment plants on a state-wide scale.<sup>74</sup>

Al-Sadeq's initial purpose as an agricultural site did not include large-scale sanitation plans. The settlement's purposes of housing livestock and cultivating agriculture did not require a sanitation system. An incremental and temporary solution has not been established at the household level.

At the micro level, solid wastewater at Al-Sadeq is forwarded to septic tanks for 111 units. However, most of Al-Sadeq residents use sanitation pits for micro-sewage mitigation techniques. A majority of Al-Sadiq families, at 336 dwellings, have dug their own sanitation pits that are mostly open. The pits are emptied occasionally.<sup>75</sup> UNHCR has provided covers for 30% of the sanitation pits, leaving 70% of the pits uncovered and non-durable. As more families populate Al-Sadeq, more sanitation pits are dug to store waste. With the average housing plot size at 300 m<sup>2</sup>, plots are large enough for sanitation pits to be distant from cooking or sleeping spaces. At the micro level, issues of sanitation are not healthy at Al-Sadeq. Small-scale interventions can include adequate covers and ventilation for pit latrines.

At a macro level, Al-Sadeq lacks a durable solution for sanitation and a primary sewage network. An excreta disposal system has not been implemented at the site. IDPs are not efficiently separated from their waste liquids at Al-Sadeq.

<sup>73</sup> *The State of Iraqi Cities Report 2006/2007*, 70.

<sup>74</sup> *The State of Iraqi Cities Report 2006/2007*, 177.

<sup>75</sup> Norwegian Refugee, 2012.

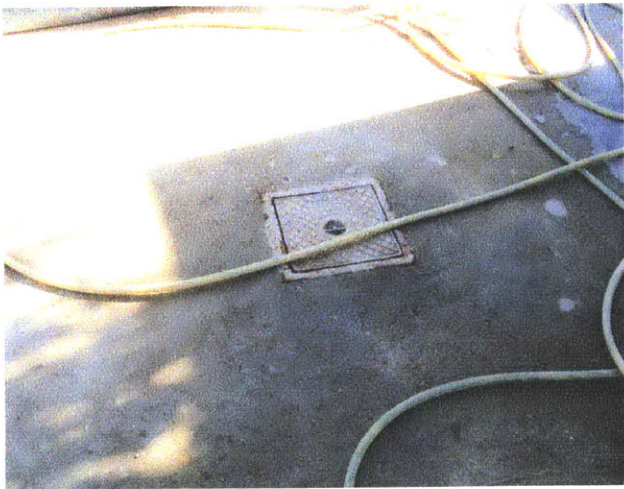




NON-DURABLE SANITATION PIT



COVERED SANITATION PIT



DURABLE SANITATION COVERAGE



TYPICAL PIT FROM AERIAL VIEW

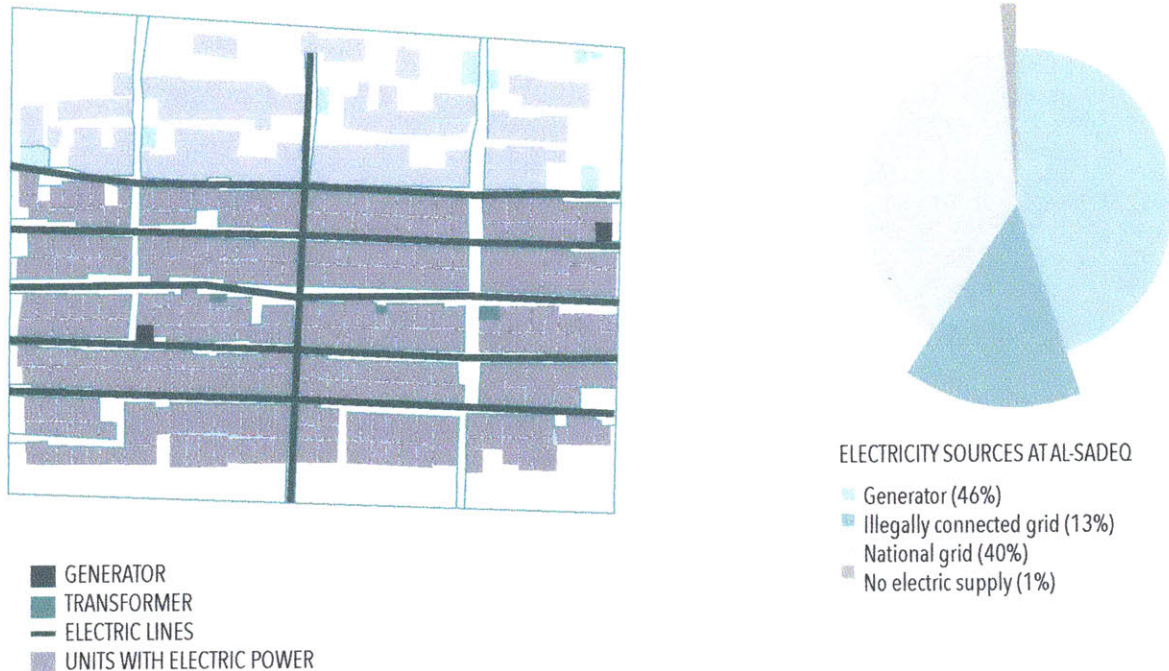


FIGURE 4.6 ELECTRICITY AT AL-SADEQ

#### 4.2.3 ELECTRICITY, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

Electricity in greater Baghdad is intermittent and a continuing problem. Contributing factors to the poor status of electrical networks are looting, sabotage, lack of security for workers, aged equipment, disruption of fuel supplies, and lack of training for staff. It is a common practice for people to steal and melt high-tension cables used for electrical supply. Consequently, Baghdad only has access to government electricity one-quarter of the time.<sup>76</sup>

When Al-Sadeq was founded as an agricultural site for Saddam's family, the site supported a partial electrical infrastructure. Electricity did not serve the total area of the settlement. In 2008, the Sheikh met with the Deputy Minister of Electricity to get approval on providing electric power to the settlement. All four of the arterial streets within the settlement are now provided with electric power. However, the government provided electricity is limited to the northernmost east-west road, and does not service the entire site.

Consequently, Al-Sadeq residents have implemented their own electrical provisions through self-built generators, transformers, and tapping electricity from the grid. While Al-Sadeq is on the grid, only 301 households receive electrical provisions from the national grid. More dwellings, at 345, power their units from generators. At Al-Sadeq, 102 units have connected themselves to the grid. Currently, 11 units at Al-Sadeq lack electricity.

Through community leverage over time, Al-Sadeq has been able to incrementally develop an informal electrical infrastructure at the semi-durable level. While only a part of Al-Sadeq is connected to the national electrical grid, residents have built and sold electricity from their own generators as a primary technique for electric supply.

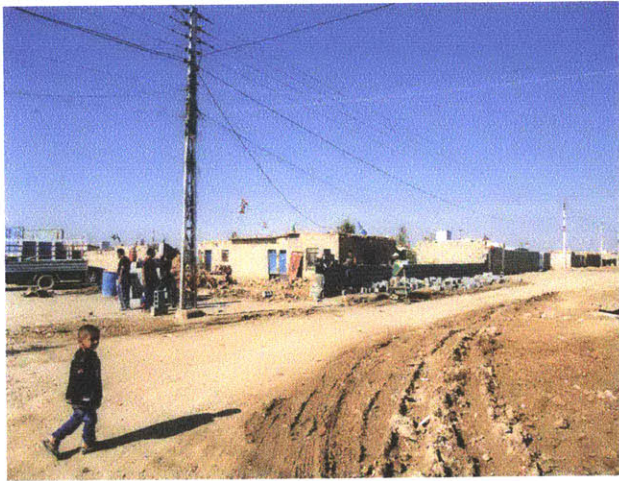
<sup>76</sup> *The State of Iraqi Cities Report 2006/2007*, 74.



SINGLE ELECTRICAL POST



ELECTRICAL POSTS



ELECTRICAL LINES INTO HOMES



ELECTRICAL TRANSFORMER



— TYPICAL IMPROVISED DRAINAGE CANAL



DRAINAGE OPENING FROM HOME TO ROAD

FIGURE 4.7 DRAINAGE AT AL-SADEQ

#### 4.2.4 DRAINAGE, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

Greater Iraq is in need of restoration for surface-water drains, sewers, and their pumps.<sup>77</sup> Devastated by years of war and sanctions, like much of Iraq's infrastructure, it is common to see small canals throughout the country serve as gutters for drainage in streets and alleyways.

Similarly, the only user-initiated solution to drainage at Al-Sadeq is small canals. Roughly eight inches in depth, the small drainage canals have been dug by IDPs throughout the settlement. The community has worked together to provide micro drainage solutions throughout the site. When Al-Sadeq experiences rain, the partially mud and partially compacted gravel roads of the settlement flood.

In the settlement's earlier constructions, rain damaged informal floor provisions that were not elevated from the settlement's roads. In later constructions, units were elevated and less affected by street flooding. With time, IDPs learned to elevate their units to solve concerns of flooding. The community found a solution for the lack of macro-drainage techniques within the settlement over time.

<sup>77</sup> *The State of Iraqi Cities Report 2006/2007*, 176.



MAKESHIFT DRAINAGE CANALS



STREET FLOODING AND ELEVATED HOMES



PERSONAL DRAINAGE CANAL



DRAINAGE THROUGHOUT SETTLEMENT



IRRIGATION CANALS WHERE SOLID WASTE IS LEFT



TYPICAL SOLID WASTE DISPOSAL AT AL-SADEQ

FIGURE 4.9 SOLID WASTE AT AL-SADEQ

#### 4.2.5 SOLID WASTE, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

In Iraq, solid waste is commonly thrown in the streets. Collection crews have forgone their responsibilities due to a lack of security in less safe neighborhoods. The government is evaluating large-scale solutions for waste, and programs for recycling have yet to be established.<sup>78</sup> It is common for households to dump garbage in streets, open spaces, or on the edge of cities. Half of the families in Iraq dump their solid waste randomly throughout cities. House to house collection is only available for one-third of families in cities and one-fifth of families in rural areas.<sup>79</sup>

Since Al-Sadeq was initially planned for livestock and crops, the government did not include trash collection in the planning of the land that Al-Sadeq inhabits. Consequently, Al-Sadeq lacks a trash collection mechanism, and garbage is thrown into what was initially intended as an irrigation canal. Likewise, garbage is scattered throughout the settlement's peripheral roads and open spaces.

<sup>78</sup> *The State of Iraqi Cities Report 2006/2007*, 177.

<sup>79</sup> *The State of Iraqi Cities Report 2006/2007*, 75.



IRRIGATION CANAL FILLED WITH SOLID WASTE



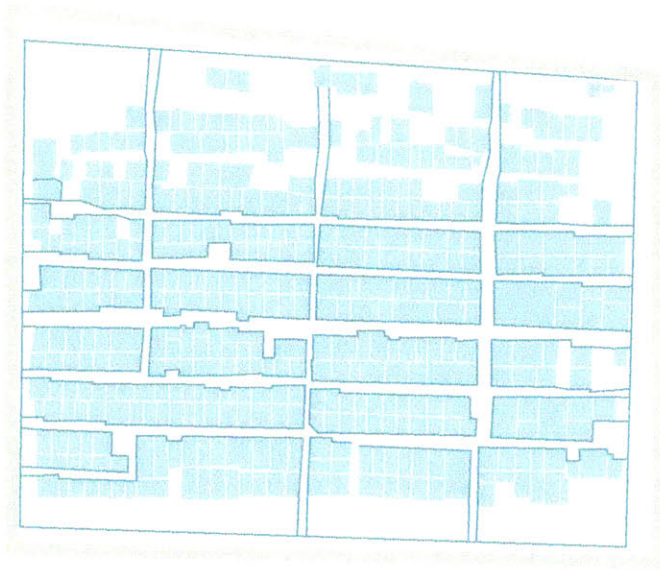
SOLID WASTE ON PERIPHERIES OF SITE



SOLID WASTE OUTSIDE OF HOMES



SOLID WASTE IN EMPTY LOTS



IRRIGATION CANALS



TYPICAL IRRIGATION CANAL

FIGURE 4.8 IRRIGATION AT AL-SADEQ

#### 4.2.6 IRRIGATION, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

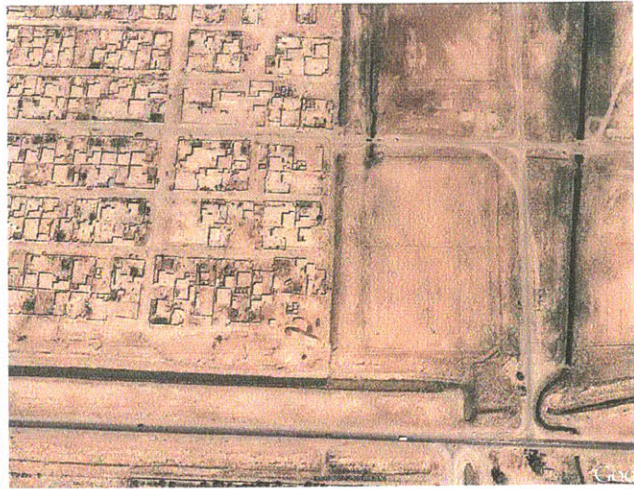
Like waterways, irrigation canals in Iraq face problems of being soiled by human waste and garbage.

Four irrigation canals surround Al-Sadeq. However, the canals are used to store garbage, potentially soiling any water for irrigation. Al-Sadeq is an agricultural settlement and was designed for irrigation. The IDPs that have settled from the agricultural province of Diyala tend to have agricultural inclinations and have cultivated agriculture within the settlement. Likewise, agricultural activities present a promising way to generate livelihoods.





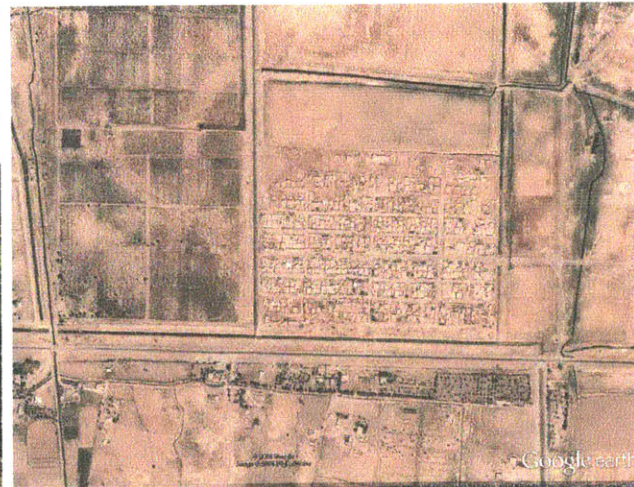
IRRIGATION CANAL ALONG SITE WITH STAGNANT WATER



AGRICULTURAL LAND OUTSIDE OF SETTLEMENT



PERSONAL AGRICULTURAL SPACE



IRRIGATION CANALS LINING SETTLEMENT



■ INCREMENTED HOUSING BLOCKS



ROAD FOR STORAGE OF CONSTRUCTION MATERIALS

FIGURE 4.10 ROAD INFRASTRUCTURE AT AL-SADEQ

#### 4.2.7 ROAD INFRASTRUCTURE, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

In Iraq, rehabilitation of the road network is critical in improving conditions within cities.<sup>80</sup> An estimated 85% of the overall road network is paved, and 50% is deemed to be in an ecosystem that is in good condition, compared to only 30% of primary and secondary roads.<sup>81</sup>

Al-Sadeq's roads are organized on a grid. The grid follows the previous formations of the agricultural land. However, streets flood after rain due to inappropriate drainage. Roads in the settlements are ten to thirteen meters wide and are partially paved in asphalt. Roads are wide, which is important in incremental processes, as dwellings store construction materials on roads.

Most of the roads are covered with compacted gravel. While the community's internal leadership has maintained the grid, the community has begun incremental processes in paving the ground with compacted gravel.

<sup>80</sup> *The State of Iraqi Cities Report 2006/2007*, 178.

<sup>81</sup> *The State of Iraqi Cities Report 2006/2007*, 76.



COMPACTED GRAVEL ON ROADS



UNPAVED ROADS



ORGANIZED ROADS AT AL-SADEQ

## 4.2.8 SECTION FINDINGS

The following findings serve as indicators for semi-durability and the rubric by which Al-Sadeq was analyzed.

INFRASTRUCTURE DURABILITY STUDY		
Criteria	Applicability to Al-Sadeq	
<b>DURABLE</b>		
Access to water	Water is available at Al-Sadeq through various methods. During the summer, water is scarce at Al-Sadeq.	
Access to sanitation	Access to improved sanitation at the micro and macro level are not available at Al-Sadeq. A waste system has not been implemented at the settlement.	
Access to electricity	A majority of Al-Sadeq has electricity from illegal and legal suppliers.	
Access to drainage	Al Sadeq lacks appropriate drainage and floods heavily during rainy season, and houses have been elevated throughout time to avoid damage.	
Access to irrigation	Al-Sadeq is surrounded by four irrigation canals that are currently filled with garbage.	
Trash collection system	Al-Sadeq lacks a trash collection system and garbage is thrown into irrigation canals.	
Road infrastructure	Roads are partially paved and organized within ten to thirteen meters in width, which is the standard road width in Baghdad.	
Are units self built and expanded as durable structures?	Units are self built and are slowly showing indications of expansion.	
<b>SEMI-DURABLE</b>		
Access to water	Three-quarters of Al-Sadeq is able to tap into existing governmental water lines. However, since the water demand is not entirely met through government services, a portion of families contribute private funds to a water tanker that sells drinking water to some Al-Sadeq residents. Drinking water is especially scarce throughout the summer at Al-Sadeq.	•
Access to sanitation	Sewage is not durably addressed at the macro or micro level at Al-Sadeq. Al-Sadeq residents use sanitation pits to collect their sewage, and the pits are emptied from time to time. 30% of the pits have a concrete cover. 70% of pits are without a cover.	•
Access to electricity	Al-Sadeq has access to electricity. In 2008, the Sheikh met with the Deputy Minister of Electricity to get approval on providing electric power to most of the settlement. A majority of the settlement is powered by generators.	•
Access to drainage	There is a basic drainage system of shallow canals dug by IDPs throughout the site. However, Al-Sadeq often has shallow water throughout its streets due to the lack of rainwater drainage system and the unpaved roads. IDPs have dealt with this by elevating constructions.	•
Access to irrigation	Al-Sadeq is surrounded by four irrigation canals that are currently filled with garbage.	
Trash collection system	Al-Sadeq deposits trash into an irrigation canal and throughout the site.	
Road infrastructure	Al-Sadeq has roads planned and implemented, but the roads are only partially paved.	•
Are units self built and expanded as semi-durable structures?	Units are self built and are slowly showing indications of expansion. Units vary in durability.	•
<b>NON-DURABLE</b>		
No access to water	There is access to water at Al-Sadeq, as organized by the community.	
No access to sanitation	Al-Sadeq has makeshift sanitation pits for waste for 30% of residents. Open defecation and open urination do not take place at Al-Sadeq.	
No access to electricity	Al-Sadeq has access to formal and informal means of electricity.	
No access to drainage	Al-Sadeq has dug informal drainage canals.	
Access to irrigation	Al-Sadeq is surrounded by four irrigation canals.	
No access to a trash collection system	Al-Sadeq lacks a waste collection system, and waste is thrown out openly.	•
No road infrastructure	The road infrastructure of the previous agricultural site has been followed.	
Units are tents and other non-durable materials	A majority of Al-Sadeq's dwellings are semi-durable and built constructions.	

While water, electricity, and drainage have been solved to the best ability of Al-Sadeq's IDPs, sanitation and irrigation can be improved. Road infrastructure can also be improved through social action. Trash collection is problematic at Al-Sadeq. Infrastructurally, Al-Sadeq has reached a semi-durable state through the efforts of IDPs. IDPs worked with existing infrastructure, and developed new infrastructural techniques to develop their settlement spatially. Al-Sadeq, with community action and incremental processes over time, was able to reach semi-durability in infrastructure.

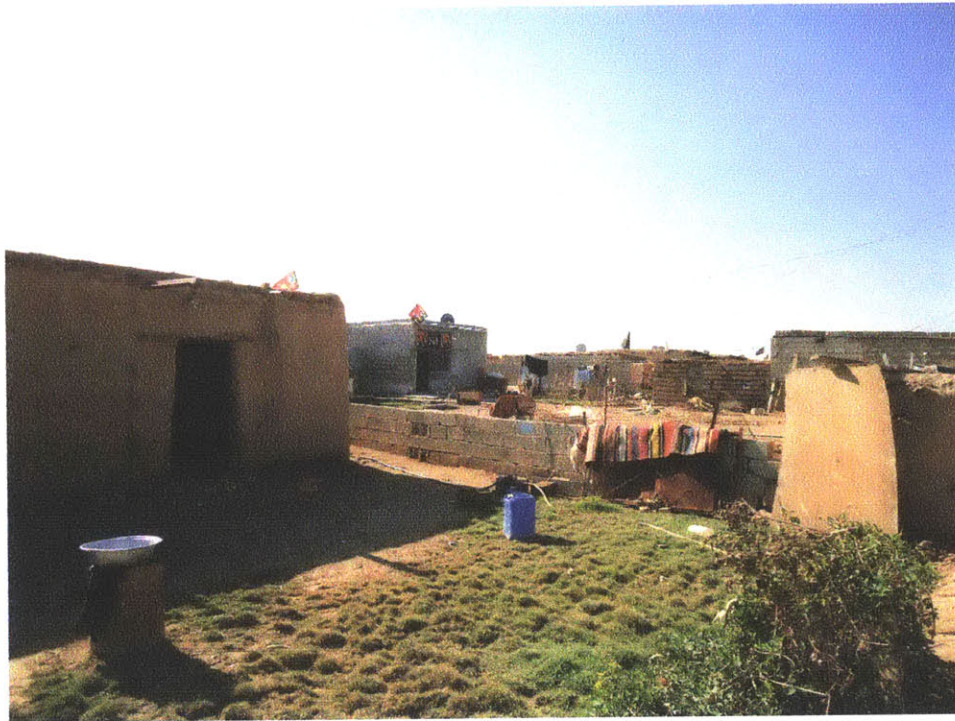


FIGURE 4.11 INCREMENTAL DEVELOPMENT OVER TIME

### 4.3 DURABILITY ANALYSIS OF HOUSING

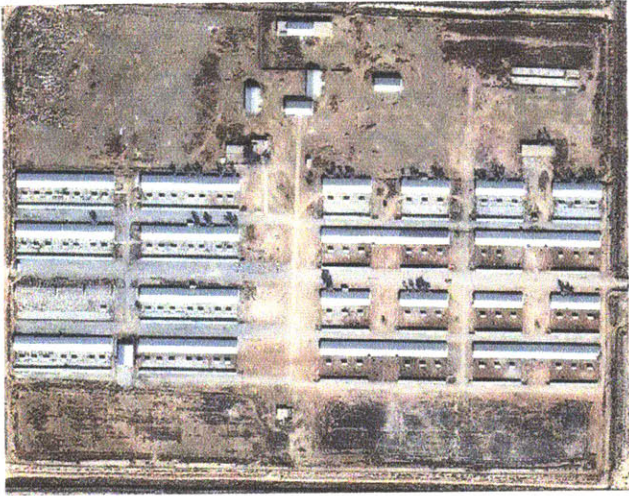
Informal houses have been constructed incrementally over time. Al-Sadeq has 432 housing units that vary in durability.

#### 4.3.1 HOUSING, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

The case study at Al-Sadeq shows signs of incremental development and community action in housing in order to reach its semi-durable state from a non-durable state. Aerial views of Al-Sadeq in 2003, 2006, and 2012 compare the settlement to show that user-initiated incremental development has taken place. This indicates viability of a user-initiated process to reach a semi-durable state. In 2003, the aerial photo displayed shows a space for cattle and agriculture. With the war, these structures were pillaged and the site had been abandoned for Al-Sadeq to develop. The images indicate that construction developed over time, as shown in the aerial image taken in 2012. With the plots, Al-Sadeq residents have implemented their own housing provisions at varying levels of durability.

Families at Al-Sadeq have built and expanded their own housing provisions. This responds to the existing social infrastructure of the Iraqi family, primarily within tribal contexts, where up to three generations can commonly live in one dwelling. Families also expand units based on other needs, such as generating livelihoods.

Overall, units are expanded over time, as families grow, and for the purpose of developing a microenterprise in a dwelling.



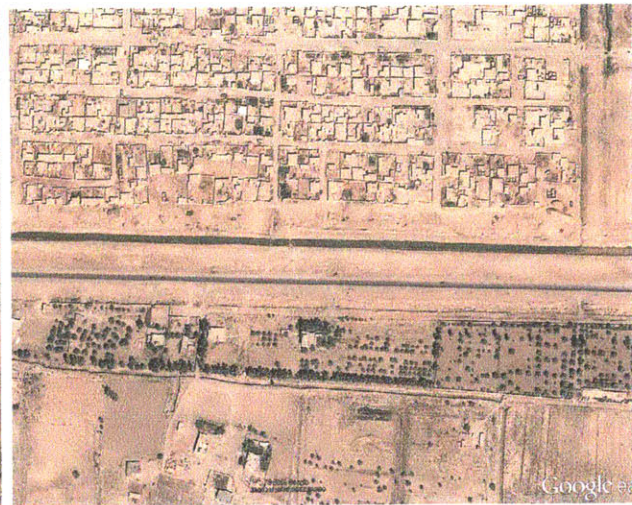
SITE IN 2003



SITE IN 2006



SITE IN 2012



CLOSE UP TO SITE IN 2012

SOURCE: GOOGLE AND MINISTRY OF AGRICULTURE

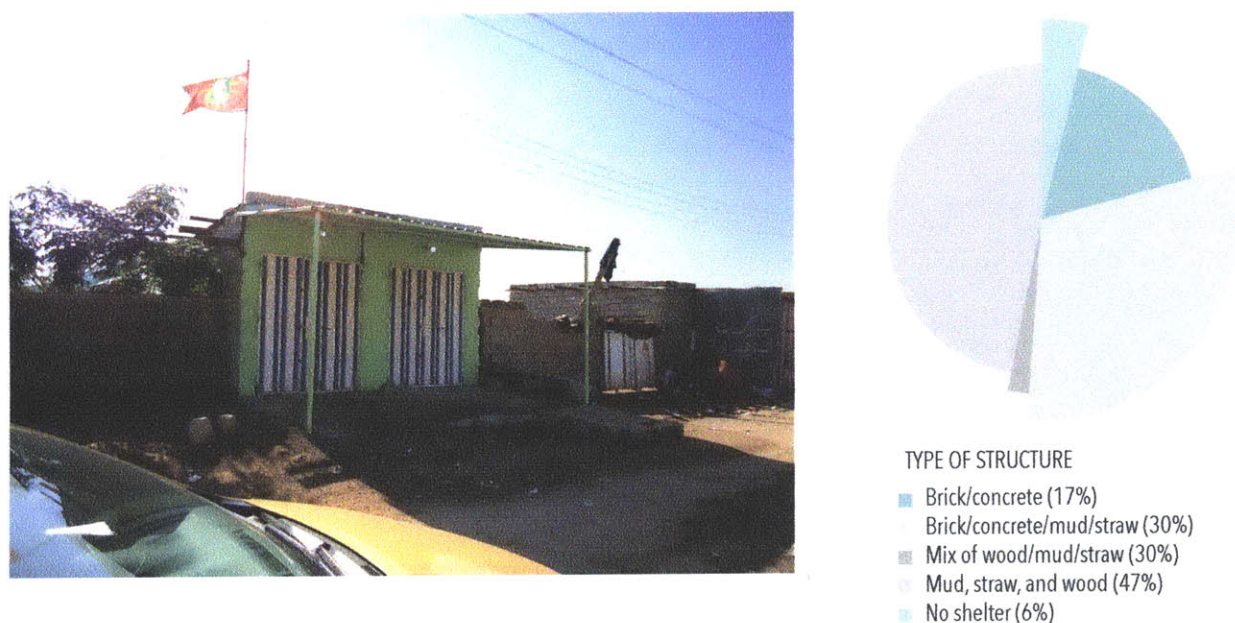


FIGURE 4.12 CONSTRUCTION AT AL-SADEQ

#### 4.3.2 CONSTRUCTION MATERIAL, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

Units begin in a minimal state. With minimal funds, mud units were primarily constructed. The most prevalent form of structures at Al-Sadeq are a mixture of mud, straw, and wood, with 203 units of that nature. Units constructed of brick, concrete, mud, and straw are the second most common type of structure, with 127 dwellings in that form. Durable brick and concrete units are the third most dominant, with 75 structures made of brick and concrete. Nine units are made of tent materials or plastic sheeting and 18 families do not have homes. As funds accumulate, Al-Sadeq residents are willing to invest in their structures.<sup>82</sup>

Without regulations on incremental housing provisions or consideration given to building code, the housing lacks standards and faces safety risks. Houses do not respond to climate and are particularly vulnerable during the rain, as mud construction dominates.

However, with time and resources, many semi-durable units have become durable with expansion and better materials. Some mud structures are upgraded with more durable materials as households are able to access funds.

If users are given the tools to build safely, incremental housing processes are more likely to be durable. Also, allowing IDPs to supply their own housing mitigates the IDP crisis in a timely manner, directly responding to Iraq's housing demands stated in the policy.

<sup>82</sup> Norwegian Refugee, 2012.

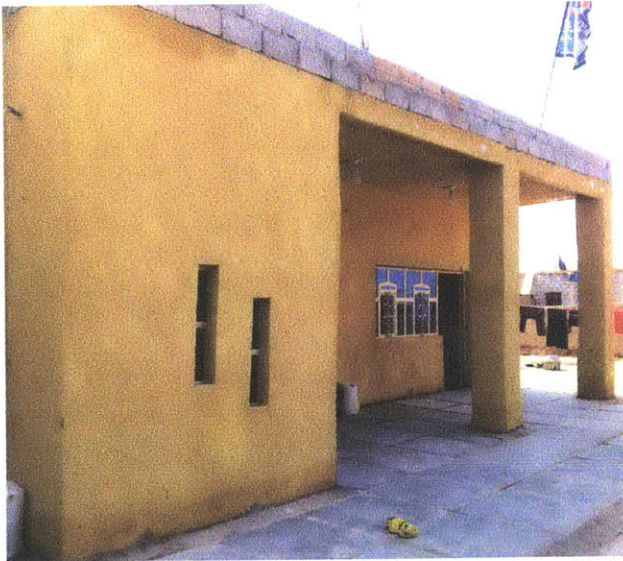




NON-DURABLE MUD STRUCTURE



SEMI-DURABLE MUD AND BRICK STRUCTURE



DURABLE FULLY BRICK AND CONCRETE STRUCTURE



ALTERNATE CONSTRUCTION TECHNIQUES



TYPICAL ROOF INTERIOR



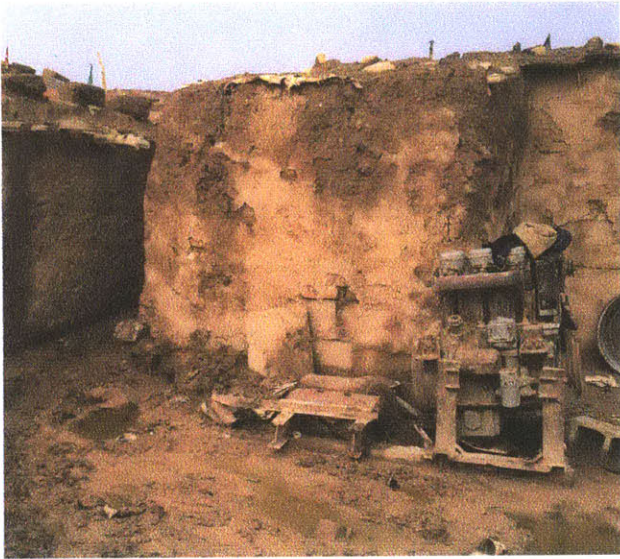
TYPICAL ROOF EXTERIOR

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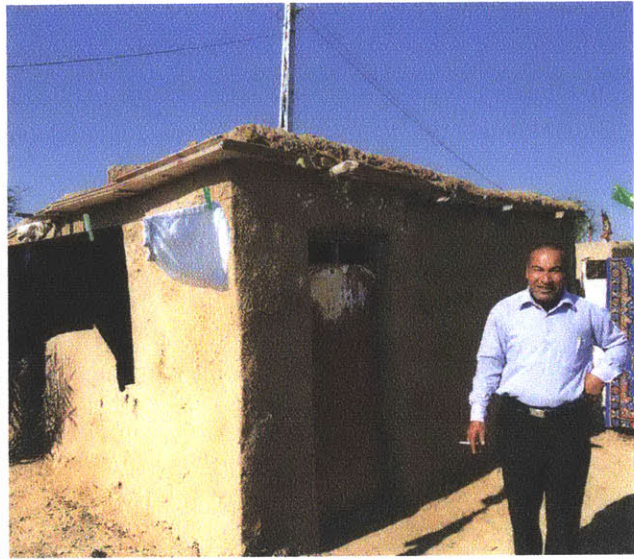
#### 4.3.3 ROOFING, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

There are three roofing typologies at Al-Sadeq. The first is made of plastic sheets, husks, or boards – this is most common form of roofing at Al-Sadeq. The second is made of a concrete slab or sandwich panel. The third is made of a steel roof plate. A majority of the roofing at Al-Sadeq is made of husk mat, which is vulnerable to rain and detrimental climate conditions.

Roofing materials vary in durability and do not always contribute toward the safety of inhabitants. However, with time and resources, Al-Sadeq's IDPs are able to provide more durable roofing provision. Though many residents do not have experience in construction methods and techniques, the community pools skills together to construct roofing systems.



NON-DURABLE MUD ROOF



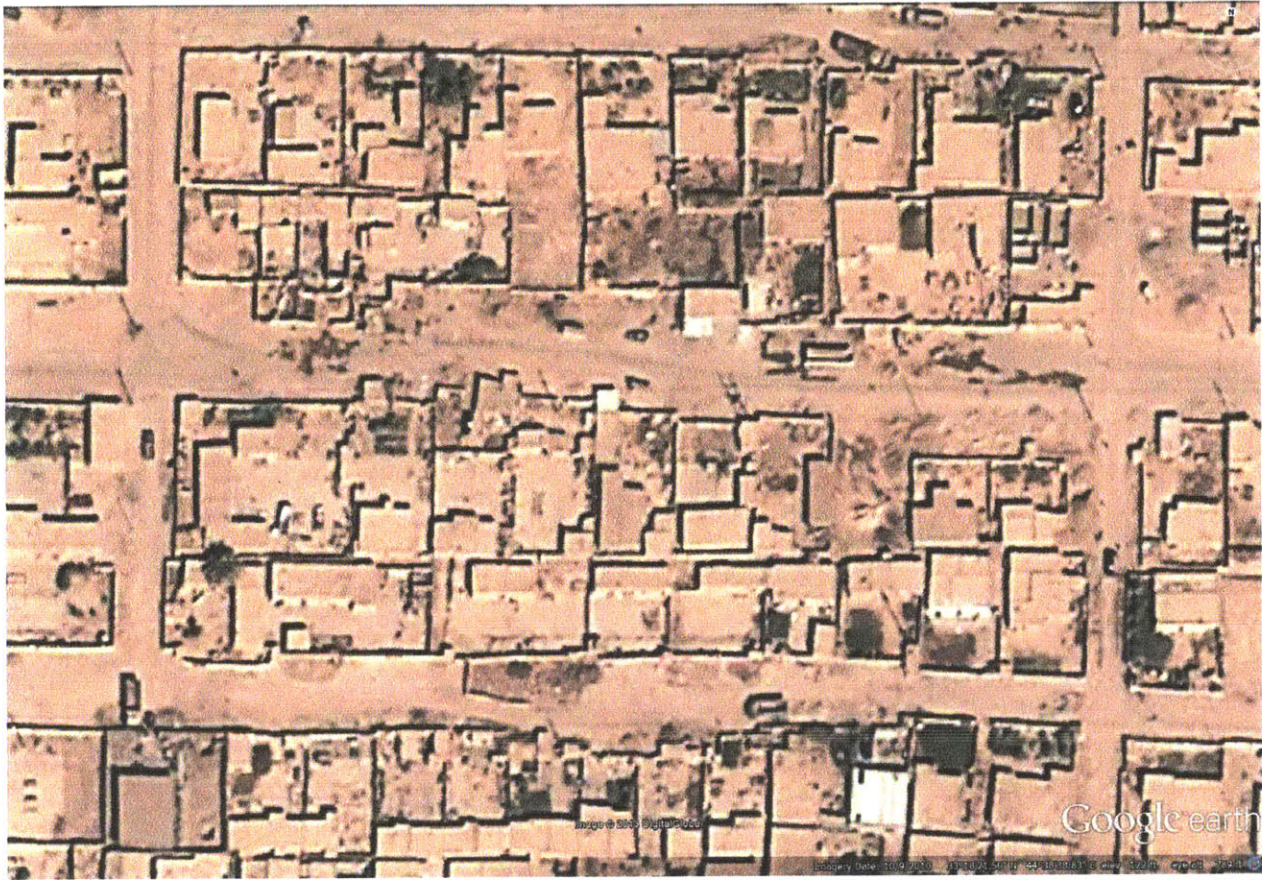
SEMI-DURABLE MUD AND WOOD ROOF



DURABLE CONCRETE ROOF



DURABLE STEEL ROOF INTERIOR



AERIAL VIEW OF HOUSING PLOTS SOURCE: GOOGLE

#### 4.3.4 PLOT SIZE, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

At the settlement scale, Al-Sadeq is planned on the former grid of the agricultural land that preceded it. Al-Sadeq is public land, currently owned by the Ministry of Agriculture. Initially, authorities turned a blind eye toward the illegal squatting at Al-Sadeq. With time and informal development, Baghdad Governor Hussein Tahan gave leadership to the Sheikh to orally allocate and distribute lands to Al-Sadeq's IDPs. The Sheikh verbally distributed 300 m<sup>2</sup> plots, which falls into Iraq's National Housing Standards for the size of a residence. While Al-Sadeq residents lack official land tenure, they have been given oral and temporary tenure of the plots.

4.3.5 SECTION FINDINGS

The following findings serve as indicators for semi-durability and the rubric by which Al-Sadeq was analyzed.

HOUSING DURABILITY STUDY		
Criteria	Applicability to Al-Sadeq	
<b>DURABLE</b>		
Units of durable concrete and brick construction	Only 75 of the 432 units at Al-Sadeq are made of durable concrete and brick construction.	
Units have durable roof constructions	Roofing materials are mainly wood and mud and roofs are vulnerable to poor weather.	
Lot size within policy guidelines	Al-Sadeq families have 300 m <sup>2</sup> of land for construction, which exceeds policy guidelines.	•
<b>SEMI-DURABLE</b>		
Majority of units primarily mud construction	75% of total Al-Sadeq inhabitants live in mud constructions, making it the primary construction typology.	•
Units have semi-durable roof constructions	Majority of roofing is a husk mat, which is vulnerable to rain and detrimental climate conditions. There are three roofing typologies at Al-Sadeq. The first is made of plastic sheets, husks, or boards – this is most common in the husk form as most roofs are husk mats. The second is made of a concrete slab or sandwich panel. The third is made of a steel roof plate.	•
Lot sizes vary	Al-Sadeq families are given the right to sufficient land plots. This may be due to the peri-urban nature of the settlement.	
<b>NON-DURABLE</b>		
Units lack construction materials and are made of just household items or tents	11 of the 432 units at Al-Sadeq fall into this category.	
Units lack roofs	11 of the 432 units at Al-Sadeq fall into this category.	
Plot size less than national standard	Al-Sadeq housing plots are of sufficient size.	

Housing at Al-Sadeq is not entirely safe. There are different construction methods, and construction methods and materials improve in durability over time. Through leveraging incremental development and community action, the housing at Al-Sadeq can potentially be upgraded from semi-durable to durable. Also, the community has displayed a support system to aid in and learn from the construction of others.



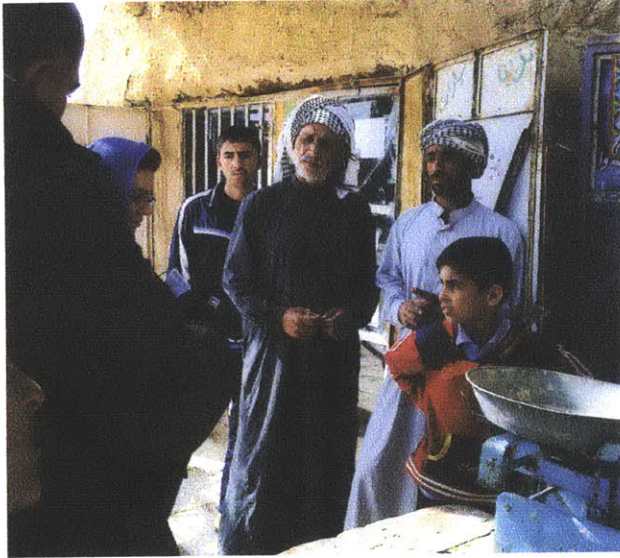
#### 4.4 DURABILITY ANALYSIS OF SOCIAL COHESION AND NETWORKS

Through this study, this thesis finds that social networks are what take a non-durable settlement to a semi-durable state. Social networks are the change agents for upgrade at a settlement, and social networks allow a community to bind together for incremental processes. Among the three categories, the durable category dominates in the social cohesion and durability study. In all of the observations based on incremental analysis and community action, the social action and networks are what encourage forward processes of development. Social cohesion is measured through internal settlement leadership, home based enterprise, education, health, livelihoods, and a religious/cultural space. Durability can be achieved when social action meets spatial action.

With the serious safety concerns that exist in Baghdad today, social network is key in the development of a community.

##### 4.4.1 INTERNAL SETTLEMENT LEADERSHIP, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

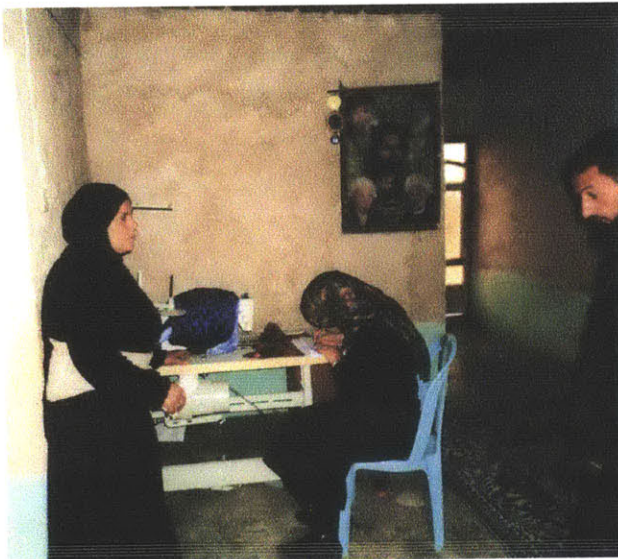
The Sheikh and Sheikha have arbitrated local issues since Al-Sadeq's founding and have become the self-appointed settlement leaders. There is a high feeling of security and safety along with low rates of violence and crime, which is unlike the conditions of greater Baghdad. Al-Sadeq is considered to be a more successful settlement by IDPs. With Al-Sadeq's leadership, many social services have emerged. Without community action, due to a trust formed by social cohesion, the internal settlement leadership would not exist.



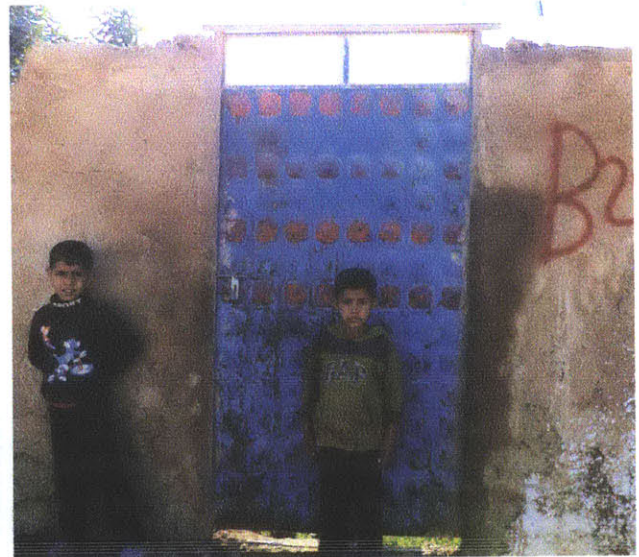
COMMUNITY MEMBERS AND MICROENTERPRISE



FEMALE HEADED HOUSEHOLD AND BUSINESS



COMMUNITY SEWING SPACE



DWELLING EXTERIOR



FIGURE 4.13 HOME BASED ENTERPRISE AT AL-SADEQ

#### 4.4.2 HOME BASED ENTERPRISE, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

Currently, Al-Sadeq has a number of home-based enterprises (HBE). The Sheikha's microenterprise, as a female entrepreneur who took out small loans from neighbors to construct a home based grocery shop, is one example of a strong social network contributing to community development. To date, the small shops inside the settlement include grocers, a barbershop, a photography studio, a small private clinic, a blacksmith, and a female salon.

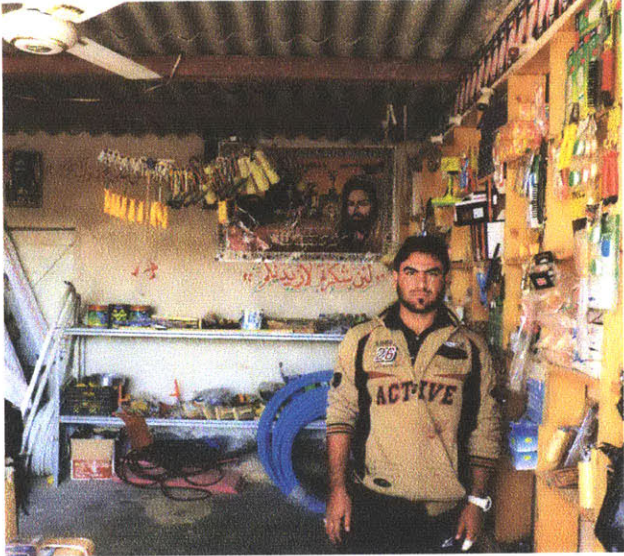
With 62% of households headed by females, IDPs seek safe methods to generate income, which is an option within their houses.<sup>83</sup> One Al-Sadeq widow whose father also died in the violence needed an income and realized a demand for female salon services at the settlement. She trained in cosmetology and opened a salon in her dwelling. She has the only salon for Al-Sadeq's females and has been able to support her family through the business.

With widows as the backbone of the community, females need a method to provide sustenance to support themselves. Considering the existing framework of trust and security in the settlement, females are able to develop their own home based enterprises to generate income. To date, accumulated community based finance helps an aspiring entrepreneur reach a goal. As in the rest of the developed and developing world, women are represented amongst the poorest people in Iraq and empowerment through female employment opportunities is central to minimizing poverty.<sup>84</sup>

<sup>83</sup> Norwegian Refugee, 2012.

<sup>84</sup> *The State of Iraqi Cities Report 2006/2007*, 148.





HARDWARE MICROENTERPRISE



HARDWARE SPACE



HOME BASED BARBER



HOME BASED FEMALE SALON



SCHOOL EXTERIOR



SCHOOL INTERIOR

#### 4.4.3 EDUCATION, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

As Al-Sadeq informally developed, the community was able to lobby for a primary school. When the community approached the Ministry of Education and did not receive support in 2009, the four Al-Sadeq tribes agreed to each build two classrooms of mud. Upon completion, eight mud classrooms served as the settlement's informal primary school. A local resident, widowed by her husband and orphaned by her father due to the violence, served as the school's educator. When the government took notice of the school, the Ministry of Education brought trailers to replace the mud school at Al-Sadeq in 2012. The government also supplied the school with teachers.<sup>85</sup> Though the educational system in Iraq has deteriorated considerably during the Hussein regime, Article 34 of the new constitution guarantees free education as a right and deems primary education as mandatory. However, the demand for schools is greater than the supply, due to deteriorated school buildings. A typical school in Baghdad operates double and triple shifts to cope.<sup>86</sup> Al-Sadeq has satisfied its own government right.

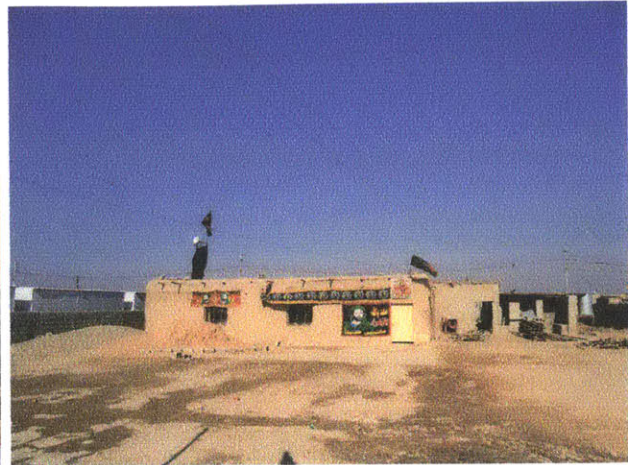
Over a course of three years, the social network took the primary education system from a non-durable to a durable state. This is a process that resulted from community will. Social networks with initiative drive city action at Al-Sadeq. These networks are founded on trust.

<sup>85</sup> Norwegian Refugee, 2012.

<sup>86</sup> *The State of Iraqi Cities Report 2006/2007*, 145.



COMMUNITY LIVESTOCK



COMMUNITY RELIGIOUS CENTER

#### 4.4.4 HEALTH, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

Healthcare is still in a non-durable state at Al-Sadeq, as education once was. A mobile facility, via community mobilization, visits on a weekly basis. A small private clinic has also been set up as a business within the settlement. The nearest healthcare facility is five kilometers in distance. This is similar to the first step that was taken in implementing a primary school at Al-Sadeq – all first steps require initiative and collective action from the community.

#### 4.4.5 LIVELIHOODS, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

With 66% of Al-Sadeq as daily laborers and 22% as drivers, and the majority of households being female-headed, most of Al-Sadeq has unstable incomes. Seven percent of the settlement has a consistent income as a civil servant. One percent operates with a home based enterprise. Four percent of Al-Sadeq is unemployed.<sup>87</sup>

The proximity to employment is one of the most important factors for IDPs.<sup>88</sup> Females on the settlement request a sewing facility to generate livelihood. The community has also constructed an area for livestock.

In their current state, IDPs are often feared and disliked by host communities. However, IDPs can be seen as a resource rather than a threat and can provide labor for the rapid reconstruction occurring in the nation. With time, IDPs may be accepted by host communities and can provide cost effective services to a larger population.

#### 4.4.6 RELIGIOUS, COMMUNITY ACTION, AND INCREMENTAL PROCESSES

In 2012, six years after the settlement was founded, Al-Sadeq residents developed a religious institution. After infrastructure was satisfied at an acceptable level, Al-Sadeq IDPs built cultural and religious structures to satisfy social needs.

<sup>87</sup> Norwegian Refugee, 2012.

<sup>88</sup> Goethert, 11.

## 4.4.7 SECTION FINDINGS

The following findings serve as indicators for social durability and the rubric by which Al-Sadeq was analyzed.

SOCIAL COHESION AND DURABILITY STUDY		
Criteria	Applicability to Al-Sadeq	
<b>DURABLE</b>		
Internal settlement leadership	Sheikh and his wife arbitrate the settlement as Al-Sadeq's centralized leadership.	•
Home based enterprise	There is successful home-based enterprise at Al-Sadeq.	•
Education	A primary education facility exists due to the support of the people.	•
Health	Al-Sadeq has a mobile health clinic that visits sporadically and a small private clinic within the settlement.	
Livelihoods	50% of Al-Sadeq works as daily laborers and 30% are unemployed.	
Religious/cultural	Al-Sadeq inhabitants have built a religious center for worship and community gatherings.	•
<b>SEMI-DURABLE</b>		
Internal settlement leadership	Al-Sadeq has successful internal leadership.	
Home based enterprise	Al-Sadeq has successful home based enterprise	
Education	Al-Sadeq has mobilized to provide education for its children.	
Health	Al-Sadeq has a small private clinic in the form of a business.	•
Livelihoods	50% of Al-Sadeq work as daily laborers and 30% are unemployed.	•
Religious/cultural	Al-Sadeq inhabitants have a fully functioning religious center for worship and community gatherings.	
<b>NON-DURABLE</b>		
Internal settlement leadership	Leadership is durable at Al-Sadeq.	
Home Based Enterprise	Home based enterprise is durable at Al-Sadeq.	
Education	Social action has mobilized education at Al-Sadeq.	
Health	Al-Sadeq has a small private clinic to serve some medical needs.	
Livelihoods	More than half of Al-Sadeq has livelihoods.	
Religious/cultural	Al-Sadeq has established a religious/cultural center.	

In all of these areas, the social network is the key component that achieved a semi-durable state from a non-durable state. Safety, perpetuated by the strong social networks, allows for IDPs to feel secure. Al-Sadeq, being comprised of four tribes from the same province and of the same sect, is socially cohesive. The social cohesion is what catalyzed the informal settlement to go from a non-durable state to a semi-durable state. The Al-Sadeq community is self-sufficient, and a majority of activities – domestic, recreational, cultural, leisure, and livestock – occur within the settlement, which is opposite to the lack of security that currently exists in Iraq.

## CHAPTER 5: FINDINGS AND IMPLICATIONS

This chapter looks at the initial thesis question and answers it with the evidence drawn from the case study. It draws lessons from the findings of the research and the case study.

### 5.1 THESIS FINDINGS

This thesis sought answers to the following questions: Under what conditions can user-initiated participation be a solution for Iraq's overwhelming and sub-standard proliferation of IDP settlements? Is upgrading via incremental housing a viable solution for semi-durable IDP settlements in Baghdad? Through the Al-Sadeq case study, upgrading via incremental housing methods appears to be a viable approach within the semi-durable Baghdad context. Social action and user-initiated incremental processes catalyze development, and the Al-Sadeq IDP settlement was able to upgrade its status from an initial non-durable state to a semi-durable settlement through those elements.

IDPs prefer upgrade to relocation. The Baghdad Provincial Council had 56,000 plots of land available for 56,000 IDP families, and the IDPs rejected the land. The land is peri-urban and disconnected from infrastructure. Squatters would not accept these conditions and rejected the plots for current settlements. With squatters choosing to stay in their own informal settlements, it is clear that the social networks and conditions that IDPs have created should be upgraded rather than reshuffled when possible. IDP priorities, when surveyed, were safety and housing. At Al-Sadeq, 70% of IDPs identified safety as their primary priority. IDP settlements that exhibit social cohesion provide a safe environment that allows for incremental development.

### 5.2 LESSONS FROM AND FOR IDP COMMUNITIES

In order for citizens to be committed to the future of their neighborhoods, they must feel ownership. What this thesis finds is that upgrading semi-durable settlements via incremental housing methods is a viable approach when social cohesion and networks are durable. As seen in the case study, it is clear that social networks are very powerful and critical for user-initiated development and ownership. The trust of people and community networks are imperative in reaching durability for a user-initiated process. Trust does not exist in every IDP settlement. Such techniques elevate an IDP settlement, which emerge from a non-durable state to a semi-durable state. They are a method to gain government support.

At Al-Sadeq, community cohesion is a large factor in the success of the framework, and is closely related to personal security. The community has a strong general sense of security – and personal security is the reason behind initial internal displacement and the primary reason why IDPs do not return to their locations of origin. Al-Sadeq is very insular, but also very safe. Personal security is a major issue in Iraq, especially since 2006. There is a constant fear that a family's children will not return home from school and kidnapping is an ever present threat, both encouraging the insularity of Al-Sadeq. Sixty percent of households in Baghdad feel that their neighborhood is not safe enough for their children.<sup>89</sup> Concerns of security are not central within Al-Sadeq, and therefore the community has been able to develop itself.

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<sup>89</sup> *The State of Iraqi Cities Report 2006/2007*, 140.

Due to feelings of safety, people at Al-Sadeq are investing in their neighborhood without tenure. Likewise, home based enterprise and services have emerged to serve the internal population, also bolstered by the social network. The durable social network provides informal methods of microfinance to encourage businesses to develop and thrive.

While social processes can define success or failure, only certain infrastructural elements are in the control of the community. Various infrastructural elements require government support – though government initiative is decreased when a community is able to organize and build itself.

### 5.3 LESSONS FOR LOCAL AND NATIONAL GOVERNMENT

As hypothesized, semi-durability has been achieved at Al-Sadeq through incremental processes and community action. Using that key finding at the governmental policy level implies the following: Incremental housing can be a strategy to formally promote and plan in Baghdad for communities that display elements of social cohesion and community action. Community action can serve as the operational strategy implemented to reach durability from semi-durability. It is of critical importance to preserve local social systems and safety nets.

While community action is not a leveraged solution in Iraq, there is a significant willingness among low-income homeowners to take part in improvements and extension activity. An Iraq-wide IDP survey found that 93% of homeowners are willing to undertake repairs and improvements of their own dwellings, and 88% are willing to take out a soft loan to do so. Three-quarters are interested in adding extra rooms or constructing an additional floor, and 64% are willing to take out a soft loan to do so.<sup>90</sup> This exhibits an overwhelming desire for IDPs to improve and expand existing housing and to take control of their own circumstances.

Therefore, a change in attitude among decision makers to accept contributions from IDPs is imperative. With this shift in attitude, the larger burden on the formal sector is reduced.<sup>91</sup> If the reductive logic of incremental housing is replaced by a logic of synthesis at the governmental level, dwellings can flex and grow with the needs of families. Furthermore, if money can only provide twenty square meters of a constructed house, providing forty square meters of an unfinished dwelling allows for a family to expand a unit. Through framing the solution as one of incremental housing, reducing the initial cost and size of the unit allows for user-initiated construction to be part of the unit. The enormous capacity of the population is taken advantage of to construct itself.<sup>92</sup>

Iraq lacks a formerly established tradition of community action in public sector projects, and therefore faces challenges with community action. Often, project details are perceived as too complex and technical for IDPs to understand, and may be seen as too time consuming in the planning phase with little outcome. Likewise, IDPs are not plugged into resources. In a survey of 263 IDPs, only one resident was aware of an active community development organization in the area. However, community based approaches, as seen by the case study, can have positive impacts. Such approaches can accommodate a greater variety and range of options, while using IDPs as resources for building and organizing their own housing provisions.

90 Ministry of Municipality and Public Works, Ministry of Housing. 2005.

91 *The State of Iraqi Cities Report 2006/2007*, 100.

92 Aravena, A. (2012). *Elemental Incremental housing and Participatory Design Manual*. Ostfildern : Hatje/Cantz. Pp 18.

Community action may be a slower process, but it trains the community in self-governance, which encourages ownership and requires less government support after the execution of a project. With increased control for inhabitants, control for authorities is decreased. Inhabitants also have the opportunity to maintain their own land. Likewise, transparency is increased due to engagement in decision-making. Community action leads to higher acceptance due to improved community understanding.

With community action, the community can rely on itself and its users to implement projects. Community action reduces risk due to community involvement, engagement, and awareness.

With community action and implementation, authorities can potentially implement applied town and engineering standards as well as the phased development of essential infrastructure. Building codes can be made flexible to accommodate future additions and flexibility of space.

Through the success of the Sheikh, it is clear that governmentally supported participatory processes can be organized through community leaders. This step involves the support of government organizations and relevant Ministries. Via these processes, dialogue can commence on planning upgrade techniques. Community action, especially with the eroded trust in Iraq currently, could serve as a way to allow community decision making through already trusted community leaders.

The choice to train and endorse community participation has economic implications, as there is potential in capacity building through community. There is great potential in livelihoods through the servicing of areas in which occupants have no or little income. A neighborhood can be serviced by its own inhabitants. This is especially valuable considering the lack of training in slum upgrading for most of the municipal staff in Iraq.<sup>93</sup> Training IDPs in infrastructure and construction can also allow for a semi-durable settlement to upgrade its status to a durable settlement as a fully internal process.

#### 5.4 LESSONS FOR RESEARCH AND GOVERNMENT POLICY

Iraq's current housing crisis is the continuation of an existing housing crisis. With only 15% of social housing demands ever met in Iraq, social housing in the nation has never been addressed in an effective manner.

The following characteristics affect the outcome of reconstruction: lack of conceptual clarity on what reconstruction should achieve, the complexity of multiple transitions for post-war Iraq from an authoritarian to a democratic process, the length of displacement (longer displacement implies less chance of return and greater negative impact if not alleviated), relief culture that is not suited for transition, loss of political will and fluctuating levels of support, the lack of capacity after a large national conflict, and the liberal implementation in the name of urgency. With all of those factors, Iraq has to find a solution for housing IDPs.<sup>94</sup>

<sup>93</sup> *The State of Iraqi Cities Report 2006/2007*, 182.

<sup>94</sup> *Summary Proceedings of Workshop Addressing IDP Camps and Informal Settlements in Baghdad, 2011*, 7.

The Ministry of Construction and Housing identifies two solutions for the IDP problem. The first government led option allows for space to be allocated within the master plan toward housing. With low land supply and high housing demand, this is typically addressed through multi-story, high-density construction. This solution has high budgetary requirements and is not always sustainable. It falls within federal government objectives, the state is responsible for design, and the citizen is limited in community action. It is similar to the solution that Iraq implemented in the sixties and seventies that was unable to fulfil the housing demand.

The second option that has been recently recognized by the government is citizen empowerment. The government has realized that IDPs have settled on many public lands, regardless of tenure or building codes. The government has identified the benefit in offering service provisions to such areas as the most realistic solution to the IDP crisis.<sup>95</sup> Within this key consideration and the findings of this thesis, the recommended option is citizen empowerment for settlements that exhibit a social cohesion. In this option, the government establishes an environment to support citizen empowerment to construct housing and even generate livelihood. This approach supports local employment as well as local construction materials. This allows for community action and is affordable, particularly with “pay-as-you” go methods. The flexibility of the incremental model allows a homeowner to expand and increment a unit with specific familial needs. This thesis also finds that IDPs can be trained to implement infrastructural and housing provisions to service their own communities and others while generating livelihood.

Historically, incremental processes were dropped in the international realm because of the small scale of settlements that were being addressed by the approach. With a targeted search of settlements eligible for incremental upgrade within Baghdad's IDP settlements, problems of scale are alleviated and jobs are potentially created. Upgrading via incremental processes can be one part of the solution to the IDP crisis.

Future research of other settlement typologies can ensure that resources are not spent in vain to service settlements that may continue to deteriorate even after government intervention. Incremental strategies may not be the best option for every settlement.

## 5.5 CONCLUSION

With 70% of Iraqis currently living in cities, Iraq is a highly urbanized country. The population of Iraq is currently at thirty-five million, and sustains a 2.9% growth rate.<sup>96</sup> With 60-70% of a country's GDP coming from cities, housing can contribute to 15% of a nation's economic growth. Through appropriate linkages to transport, cities have the opportunity to provide employment to people. The housing demand in Iraq, if addressed appropriately, can contribute to the stabilization of the nation. With violence as a pressing concern in Iraq, housing is an essential way to get inclusion from all sectors of society. Housing improves livelihoods, absorbs labor, and increases the quality of life for people. The expansion of housing and construction is central to Iraqi economics.

However, community upgrading is not always the most viable option. It is most viable when in-situ upgrading is possible and is suited for small and medium sized semi-durable settlements. It works for complicated geographies and provides an instant solution for settlements. It can provide a fast and effective solution to begin the mitigation of Iraq's IDP crisis. In locations that lack community cohesion, investment in incremental upgrade might not be as effective as a

<sup>95</sup> *The State of Iraqi Cities Report 2006/2007*, 182.

<sup>96</sup> “Population Growth (annual %).” *Data*. World Bank, n.d. Web. 21 May 2013. <<http://data.worldbank.org/indicator/SP.POP.GROW>>.



socially cohesive settlement.

However, incremental processes can be – and have proven to be – successful in certain settlement contexts. At Al-Sadeq, a settlement of 457 families from a similar location of origin, incremental housing and infrastructure processes emerged organically. For land planning, incremental processes at Al-Sadeq proved to be successful because the land's boundaries had been defined by pre-existing agricultural land. The community improvised their own infrastructural provisions as community skills, size, and funds increased. Al-Sadeq's IDPs have been able to upgrade their own materials – many of which started in non-durable forms – as unstable incomes increased.

Internal leadership, with social cohesion, also encouraged development at Al-Sadeq. With leadership, the community provided outlets for personal and social development, including a school, a religious center, businesses, attempts at healthcare, and places to raise livestock. Livelihood is very important. The economic basis of a settlement is critical, and inclusive and safe settlements can provide vulnerable populations – such as widowed females – with opportunities for livelihood. Microloan programs can potentially catalyze more community enterprise.

Security is important in post-conflict Baghdad, and IDPs choose where to settle based on feelings of safety. With time and trust, Al-Sadeq has been able to initiate its own housing and infrastructural provisions and take ownership over its own success.

Ultimately, quality of life and well-being are vital components that are encouraged when neighbors can live together in harmony. How residents feel about their safety and future is key in their willingness to stay and invest in a neighborhood. The case study at Al-Sadeq makes clear what a community can provide autonomously with social cohesion and feelings of personal safety. It also indicates areas of infrastructure that would be best improved with community training, and those limited to government intervention. Ultimately, internal resources and community could be the driver for a semi-durable settlement to reach a durable state.

## BIBLIOGRAPHY

- Abrams, Charles. *The Future of Housing*. New York: Harper & Bros., 1946. Print.
- Abrams, Charles. *Man's Struggle for Shelter in an Urbanizing World*. Cambridge, MA: M.I.T., 1964. Print.
- Alexander, Christopher. *Houses Generated by Patterns*. Berkeley, CA: Center for Environmental Structure, 1969. Print.
- Alexander, Christopher, Howard Davis, Julio Martinez, and Donald Corner. *The Production of Houses*. New York: Oxford UP, 1985. Print.
- Alexander, Christopher, Sara Ishikawa, and Murray Silverstein. *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford UP, 1977. Print.
- Alimam, Isam M. "Tenements: Dwellings for the Urban Poor. Comparative Study Illustrating 28 Cases in Developing Countries." Thesis. Massachusetts Institute of Technology, 1981. Print.
- Al-Musawi, Abdul-Karim S. "IDPs in Baghdad." Personal interview. 15 Dec. 2012.
- Aravena, Alejandro, and Andres Iacobelli. *Elemental: Manual De Vivienda Incremental Y Diseno Participativo = Incremental Housing and Participatory Design Manual*. Ostfildern: Hatje Cantz, 2012. Print.
- Awni, Muhammad H. "Urban Case Studies: Baghdad, Iraq. Low Income Dwelling Surveys and a Site and Services Proposal." Thesis. Massachusetts Institute of Technology, 1979. Print.
- Caminos, Horacio, and John A. Steffian. *Urban Dwelling Environments; an Elementary Survey of Settlements for the Study of Design Determinants*. Cambridge, MA: M.I.T., 1969. Print.
- Caminos, Horacio, and Reinhard Goethert. *Urbanization Primer*. Cambridge: MIT Pr., 1978. Print.
- Caminos, Horacio, and Reinhard Goethert. *Urbanization Primer: Project Assessment, Site Analysis, Design Criteria for Site and Services of Similar Dwelling Environments in Developing Areas*. Cambridge, MA: MIT, 1978. Print.
- Chavez, Roberto. "Incremental Housing: The Past and Future Dwelling Solution for the Poor." (n.d.): 2. Print.
- Davis, Sam. *The Architecture of Affordable Housing*. Berkeley: Univ Of California, 1997. Print.
- Fathy, Hassan. *Architecture for the Poor: An Experiment in Rural Egypt*. Chicago: Univ. of Chicago P., 1973. Print.
- Gattoni, George. "A Case for the Incremental Housing Process in Sites-and-Services Programs and Comments on a New Initiative in Guyana." *Inter-American Development Bank* (n.d.): 7. Print.
- Gilbert, Alan, and Josef Gugler. *Cities, Poverty, and Development: Urbanization in the Third World*. Oxford: Oxford UP, 1982. Print.
- "Global Statistics." *IDMC*. Internal Displacement Monitoring Committee, n.d. Web. 13 Feb. 2013.
- Goethert, Reinhard, and Nabeel Hamdi. *Making Microplans: A Community-based Process in Design and Development*. London: IT, 1988. Print.
- Grimes, Orville F. *Housing for Low-income Urban Families: Economics and Policy in the Developing World*. Baltimore: Published for the World Bank [by] Johns Hopkins UP, 1976. Print.
- Hamdi, Nabeel. *Housing Without Houses: Participation, Flexibility, Enablement*. New York: Van Nostrand Reinhold, 1991. Print.
- "IOM Iraq: Review of Displacement and Return in Iraq." *International Organization for Migration* (2010): 5. Print.
- "Iraq Housing Program." *Doxiadis Archives* 5 (1959): n. pag. Print.
- "Iraq." *UNHCR News*. N.p., n.d. Web. 13 May 2013.
- Koenigsberger, Otto. "Third World Housing Policies since the 1950s." *Habitat International* (1986): 27-31. Print.
- Levine, Neil, and Frank Lloyd Wright. *The Architecture of Frank Lloyd Wright*. Princeton, NJ: Princeton UP, 1996. Print.
- Marefat, Mina. "1950s Baghdad — Modern and International." *TAARII Newsletter: The American Academic Research Institute in Iraq* (2007): 2. Print.

Ministry of Displacement and Migration. "Challenges Facing IDPs - Return and Host Communities." *Summary Proceedings of Workshop Addressing IDP Camps and Informal Settlements in Baghdad*. IDP Camps and Informal Settlements in Baghdad, Amman, Jordan. N.p.: n.p., n.d. 5. Print.

Ministry of Displacement and Migration. "Challenges Facing IDPs - Return and Host Communities." *Summary Proceedings of Workshop Addressing IDP Camps and Informal Settlements in Baghdad*. IDP Camps and Informal Settlements in Baghdad, Amman, Jordan. N.p.: n.p., n.d. N. pag. Print.

Nooraddin, Hoshiair. "Globalization and the Search for Modern Local Architecture: Learning from Baghdad." *Planning Middle Eastern Cities: An Urban Kaleidoscope in a Globalizing World*. By Yasser Elsheshtawy. London: Routledge, 2004. 59-84. Print.

Oliver, Paul. *Shelter and Society*. New York: F.A. Praeger, 1969. Print.

"Population Growth (annual %)." *Data*. World Bank, n.d. Web. 21 May 2013. <<http://data.worldbank.org/indicator/SP.POP.GROW>>.

Pyla, Panayiota. "Rebuilding Iraq 1955-58: Modernist Housing, National Aspirations and Global Ambitions." *Docomomo Journal* 35 (2006): 73. Print.

Rabbat, Nasser O., and Reinhard K. Goethert. "More Than A Pattern: The Contributions of the Courtyard House in the Developing World." *The Courtyard House: From Cultural Reference to Universal Relevance*. Farnham, Surrey, England: Ashgate, 2010. 7. Print.

Rapoport, Amos. *House Form and Culture*. Englewood Cliffs, NJ: Prentice-Hall, 1969. Print.

"Remarks from the Deputy Minister of Migration and Displacement." Proc. of Initiating Durable Shelters Solutions for IDPs and Returnees – Progress Review, General Secretariat for the Council of Ministers - March 27th, 2013, Baghdad. N.p.: n.p., n.d. N. pag. Print.

Republic of Iraq. *Iraq National Housing Policy*. N.p.: n.p., 2010. Print.

Republic of Iraq. Ministry of Construction and Housing. Iraqi Central Office of Statistics and Information Technology; UN-HABITAT; World Bank; IFC. *Iraq Housing Market Study Main Report*. Iraq: n.p., 2006. Print.

Republic of Iraq. Ministry of Construction and Housing. State Commission of Housing Studies Section. *Urban Housing Standards Manual*. Baghdad: n.p., 2010. Print.

Republic of Iraq. Ministry of Migration and Displacement. *Iraq National Policy on Displacement*. Baghdad: Republic of Iraq, 2008. Print.

Republic of Iraq. Ministry of Migration and Displacement. United Nations Human Settlement Programme. *Iraq National Strategy: Longer-Term Shelter Solutions for People Affected by Displacement*. Nairobi: UN-HABITAT, 2011. Print.

Republic of Iraq. Ministry of Municipalities and Public Works. United Nations Human Settlement Programme. *The State of Iraq Cities Report 2006/2007*. Nairobi: UN-HABITAT, 2007. Print.

The Republic of Iraq. The Republic of Iraq and Doxiadis Associates. *Housing Program of Iraq*. N.p.: n.p., 1967. Print.

Rudofsky, Bernard. *Architecture Without Architects: A Short Introduction to Non-Pedigreed Architecture*. New York: Museum of Modern Art, 1965. Print.

Tinker, Irene, Mayra Buvinić, and Aprodicio Laquian. "Whither Site and Services? Habitat International." *The Many Facets of Human Settlements: Science and Society Papers Prepared for AAAS Activities in Connection with HABITAT, the U.N. Conference on Human Settlements*. Oxford: Pergamon, 1977. 291-301. Print.

Turner, John F. C., and Robert Fichtel. *Freedom to Build; Dweller Control of the Housing Process*. New York: Macmillan, 1972. Print.

Turner, John F. C. *Housing By People*. N.p.: Pantheon, 1977. Print.

Turner, John F.C. "Housing Priorities, Settlement Patterns, and Urban Development in Modernizing Countries." *AIP Journal* (Nov 1968): 354-63. Print.

Turner, John. *Squatter Settlement: An Architecture That Works* in Lane, B.M. (2007) *Housing and Dwelling: Perspectives on Modern Domestic Architecture*. London: Routledge, 2007. Print.

United Nations Human Settlement Programme. *State of the World's Cities 2006/2007*. Nairobi: UN-HABITAT, 2007. Print.

Wakely, Patrick, and Elizabeth Riley. "The Case for Incremental Housing." *Cities Alliance Policy Research and Working Papers Series 1* (June 2011): n. pag. Print.

Ward, Peter M. *Self-help Housing: A Critique*. London: Mansell, 1982. Print.

Warren, John, and Ihsan Fethi. *Traditional Houses in Baghdad*. Horsham: Coach Publ. House, 1982. Print.