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A U S T R A L I A

Planning, Policy and Performance: An Evaluation of the Effectiveness of the Social Housing Policy of Oman

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Abstract

Housing low income households is a major concern of governments across the world. To address this issue and help raise the living standards of low income Omani citizens, the Omani Government established a social housing policy in 1973. The outcomes of this policy and the effectiveness of its implementation have not been formally examined, so the main focus of this study is to evaluate the effectiveness of the social housing policy in achieving its objectives. As the objectives of the social housing policy are to provide social housing that is adequate for its purpose and to provide a sufficient number of social housing units, this project assesses these two aspects: 1. 'housing adequacy' (physically and qualitatively adequate housing) and 2. 'housing demand' (sufficient quantity of housing, now and into the foreseeable future). The Omani social housing policy is composed of three programs, each with different purposes. The social housing units provided by the Residential Units Program were chosen for the adequacy aspect of the evaluation while the number of households which benefited from this program and the other two programs, the Housing Assistance Program and the Housing Loans Program, were examined to identify the current and future demand for social housing in Oman.

A mixed methods approach, including both primary and secondary data with qualitative and quantitative methods, was employed in this research. The primary data included survey questionnaires, interviews with policy makers, and site visits. A total of 330 face to face questionnaires were conducted with randomly selected household heads living in social housing. These houses were provided during the period 2001 to 2010 in five wilayats (cities): Al Rostaq, Nizwa, Sur, Ibri, and Al Buraimi. Six (6) face to face interviews were carried out with purposively selected officials of the Ministry of Housing. Site visits for the observation and documentation of the quality of houses were also conducted. The secondary data included policy documents, executive regulations, and official population statistics and projections. In regard to the social housing demand evaluation, the social housing waiting lists were examined to identify the current demand (till the end of 2014) and an assessment based on population projections and the official budget allocations was applied to estimate the demand and supply of future social housing in Oman (to 2020 and to 2030).

The concept of housing adequacy, in this study, encompasses seven components namely: legal security of tenure, affordability, the services provided, habitability, accessibility, location, and cultural adequacy. These components are based on UN-HABITAT indicators but were modified to

suit the Omani social, economic, and cultural context. The modifications have resulted in a model that includes twelve indicators that were assessed objectively by using quantifiable standards as well as subjectively by gaining household heads' perceptions and views. The new modified model contributes to the body of knowledge with its potential transferability to additional locations in Oman and other housing tenures as well as other locations in the Middle East. The application of this model has produced a base-line data set of social housing adequacy for the Omani Government. This study argued that objective assessment cannot stand alone without being compared to the householders' views. For example, whereas the social housing was found objectively to be affordable, it was not affordable according to the residents who benefited from these free units because of additional costs such as maintenance. Correlation of objective and perceptual housing adequacy measurement indicates that perceptual assessment by residents is an effective complement to using objective standards. Both measures showed that housing adequacy is not a dichotomy between 'adequate' and 'not adequate'; there is a continuum or scale of adequacy. The study found that more social housing units were classified as less adequate than were seen to be more adequate. Indicators of accessibility, living space, and the structural condition of the house contributed negatively to both assessments of adequacy, whereas indicators of location and services contributed positively to both the objective and subjective adequacy ratings. Therefore, greater attention needs to be given in the programs to the physical features of the units themselves.

The research reveals that, while there has been noticeable progress in the social housing supply especially in the current Eighth Five-Year Plan (2011-2015) due to an increase in the budget allocations from the government, the demand for social housing in Oman has not yet been met. Into the future, the social housing policy may not be effective in providing enough supply, and thus meeting the demand by the years 2020 and 2030. This research finds that the funds allocated for social housing in Oman need to be enhanced. This study concludes by arguing that more attention should be given to housing adequacy and housing supply in order to achieve a more effective social housing policy.

Declaration by Author

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

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Publications during candidature

No publications.

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No contributions by others.

Statement of parts of the thesis submitted to qualify for the award of another degree

None.

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Keywords

Australian and New Zealand Standard Research Classifications (ANZSRC)

Fields of Research (FoR) Classification

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List of Abbreviations Used in the Thesis

BSTL   Brotherhood of St Laurence

BTI   Bertelsmann Stiftung

CMHC   Canada Mortgage and Housing Corporation

CBO   Central Bank of Oman

CEDA   Committee for Economic Development of Australia

IOAS   Individuals' overall objective adequacy score

OHA   Overall housing adequacy

OHCHR   Office of the United Nations High Commissioner for Human Rights

OMR   Omani Rial (currency)

OIS   Objective indicator score

OSHR   Overall subjective housing rate

SIS   Subjective indicator score

UNCHS   United Nations Centre for Human Settlements

UN-HABITAT   United Nations Human Settlement Programme

UNHRP   United Nations Human Rights Programme

Glossary of Arabic and non-English Terms

Council of Ministers: Cabinet

Governorate: State

Governorate's centre: The capital of the state

His Majesty the Sultan: The leader, and the president of Oman, H M Sultan Qaboos

Majlis al-Shura: Consultative Council

Majlis: Room or place for visitors in a house or a unit

Wali: Governor of a state or Chairman

Wilayat: City

Chapter 1: Study Introduction

1.1 Introduction

Housing has been historically seen as a fundamental need for human life. It affects peoples' health, education, and quality of life (Erguden 2001; Isa & Jusan 2012). Although the fact that housing is a basic need, many people today have difficulties in getting access to it. Housing cost has increased dramatically in the last four decades. Hence, housing within the literature is described as a problematic economic issue facing developed as well as developing countries (Alaghbari et al. 2011; Groenhart 2010; Stepanyan, Poghosyan & Bibolov 2010), but poor and disadvantaged people seem to be far more affected. Different strategies, policies and regulations have been established to help those people to rent or purchase a house. Generally, there are two approaches in regard to housing delivery (Groenhart 2010). The supply side approach, in which the number of dwellings constructed and the land required to build them are provided, is the first one. The second approach is the demand side approach, which focuses on improving the capacity of households to rent or purchase housing through, for example, rental subsidies.

Public housing, low income housing, and community housing, which sometimes together are referred to as social housing, have been reviewed in the literature as a important examples of the housing supply side approach. Social housing policy focusing on the supply of accommodation in the 1970s and 1980s in developing countries, for example, was seen as part of poverty reduction policies. Some studies have shown that more poor people in developing countries are living in urban areas. Social housing has been used as the main approach to help those poor people to get access to housing and, through this, to reduce poverty (Buckley & Kalarickal 2005). Generally, although many policies have been formulated and various programs and projects have been implemented around the world to deliver social housing, most are still far from achieving their aims, especially in developing countries (Erguden 2001; Omar 2003). Erguden (2001) has stated that the low-cost housing delivery system is insufficient and has many constraints in most of these countries. The condition of the housing that is delivered is also often inadequate.

Currently, there is a wide gap between social policy formulation and policy implementation in most of the developing countries. This fragmentation has a direct effect on low-cost housing delivery so that the supply of low-cost housing is insufficient and the condition of such units has become inadequate and "far beyond being satisfactory" (Erguden 2001, p.1). According to the United Nations Centre for Human Settlements (UNCHS), "adequate shelter means more than a roof over

one's head" (UNCHS 2006, p. 60). Various studies have investigated the level of satisfaction of residents to assess the adequacy, the physical condition, and the quality of social housing. For example, Mubarak (2010) evaluated the quality of the public housing in Saudi Arabia by using this satisfaction approach and he has claimed that those units are not satisfactory to the residents "due to the lack of cultural considerations such as the extended family structure, the relatively large number of persons per household and the stigma attached to living in public housing. The units did not accommodate for the large families and people felt these homes were not socially acceptable" (Mubarak, 2010, p. 8). On the other hand, not much research has been done to assess whether sufficient social housing units are being built to cover current and future demand, especially in developing countries.

This research uses the single case study of social housing provision in Oman. Oman provides a useful case example to explore questions about adequacy and supply of and demand for social housing. Section 1.4 provides more detail of the significance and value of Oman as a case study of social housing. Chapter Five explains the methodology used.

1.2 Study Background

> The Sultanate of Oman has made extraordinary advances since His Majesty the Sultan Qaboos bin Said came to power in 1970. At that time there was little infrastructure to speak of, few roads to link the country's main towns and cities and only limited numbers of schools or hospitals to serve its people (Ministry of Information 2013, p. 1).

Oman since that time (it is called the renaissance) has witnessed a significant development in almost all aspects of the public as well as the private sector. Many policies have been issued and implemented in all Governorates (equivalent to States) of Oman. Social housing policy is one of these policies. It aims to provide a *sufficient* supply of housing as well as housing that is *adequate* for Omani households which are classified as low income. Low income households represent households with a monthly income of 300 Omani Rial (OMR) ($AUD 1053) (Ministry of Housing 2011) (Where one OMR equals 3.5 AUD (The Money Converter 2015)). Those households can get access to social housing as grants of a housing unit or for housing purchase, construction and/or alterations. Households which earn 301 OMR ($AUD 1056) to 600 OMR ($AUD 2105) per month can also get access to social housing as interest-free loans (Ministry of Housing 2011).

In the Basic Statute of the State, it is affirmed that "the State guarantees aid for the citizen and his family in cases of emergency, sickness, disability, and old age according to the social security scheme. The State shall work for the solidarity of the society in bearing the burdens resulting from national disasters and catastrophes" (The Ministry of Legal Affairs, 2011, article 12). In other words, the Omani Government is responsible for raising the living standards of disadvantaged people through their social security schemes. Social housing is considered a chief service among others (e.g. monthly allowance and higher education scholarships) provided by the Omani Government to help those who are in need.

Oman, similar to many other developed and developing countries, has made continuous efforts to help disadvantaged people to get access to housing. In 1973, the Omani Government formulated the social housing policy in Oman. Although the aim of this policy is not specified in its documentation, it generally aims to deliver qualitatively adequate and numerically sufficient housing (Ministry of Housing 2011; Ministry of Legal Affairs 2010). In fact, this policy delivers social housing for home ownership through three different programs to eligible disadvantaged people: Residential Units Program, Housing Assistance Program, and Housing Loans Program. Until 2014, around 43,795 households benefited from these programs (Planning and Statistics Department 2011b; 2014a). Eligible Omani low and middle income people such as divorced and widowed women can get access to social housing assistance.

Critically, few studies have been conducted to evaluate the real achievements, and impacts of this policy. Navigating the literature, only three studies were done in regard to social housing in Oman. Rahman, Al-Harthy and Al-Arifi's study (2002) is the first one. It is a conference paper aimed to identify problems associated with social housing in some locations in Oman. The Master's thesis done by Alndabi (2010) is the second study. It intended to examine the suitability of the location and design of some of this social housing. The third study was done by Alnasiri (2011). It was also a conference paper but it discussed the affordability of the social housing in Oman. The results of these studies are discussed in the Literature Review in Chapter Two. Although the fact that these studies have made a contribution regarding the implementation of the social housing policy in Oman, none of them have outlined the objectives of this policy and whether they have been achieved.

1.3 Research Questions

Good planning is not just establishing policies but also evaluating these policies in terms of their effectiveness, efficiency, and appropriateness (Head 2008; Milligan et al. 2007). Milligan et al. (2007, p.8) have stated that "evaluation is a form of research that systematically investigates how well a policy, program or project is meeting its objectives". Hence, effective policy means policy that is able to achieve its planned objectives. As social housing policy in Oman aims to deliver housing that is adequate to the poor people as well as supplying sufficient housing, evaluating the effectiveness of this policy means investigating whether this policy has been able to deliver both physically and qualitatively adequate housing and whether sufficient housing has been supplied.

The foregoing discussion led to a decision that to evaluate the effectiveness of the social housing policy in Oman, there should be two main aspects of evaluation. The first aspect is evaluating adequacy of the social housing. In this aspect, seven components of housing adequacy were applied to measure adequacy namely: legal security of tenure, affordability, availability of services, habitability, accessibility, location, and cultural adequacy. These components were assessed by using twelve indicators. Most of these indicators were established by the UNHRP and UN-HABITAT while other indicators which have been used in the literature were also selected and applied in this study. These indicators were evaluated objectively by using quantified standards and subjectively by applying the participants' views.

Evaluating the housing need is the second aspect of this evaluation. To make it clear, this aspect of evaluation aims to identify the number of social housing units that are needed to cover the gap between the supply and the demand for these houses in Oman. The numbers of those needing these houses were evaluated in terms of the current demand (end of 2014) and future demand (for the years 2020 and 2030). The waiting list of social housing and the population projection methods were used in this study to find the current and future social housing demand in Oman. After doing such evaluation, in which the strengths and weaknesses are identified, there should be some recommendations that may enhance the effectiveness of the policy.

In fact, the discussion above helped formulate the objective of this research, which is to answer the following questions:

1. To what extent has the social housing policy in Oman been able to deliver adequate housing?

a. What does housing adequacy mean?

b. How is housing adequacy measured?

c. What influence does the current policy and its implementation have on housing adequacy?

2. Does the social housing policy in Oman deliver a sufficient quantity of housing?

a. What is the current real unmet demand for social housing?

b. Can the social housing policy in Oman meet likely future demand?

c. What influence does the current policy and its implementation have on meeting housing demand?

3. How can the social housing policy and its implementation be improved?

1.4 Significance of the Study

Conducting this study of Oman is significant for the following reasons. First, it has been around 40 years since the social housing policy in Oman was first implemented (Ministry of Housing 2011). Critically, the Omani Government has not evaluated if its policy has been able to achieve its objectives. It is known that it aims to deliver adequate and sufficient housing. But has that been achieved? Hence, this research is important to answer this question and it is not too late to do it.

Second, the financial support provided by the Omani Government to social housing programs has been improved during the current years of the Eighth Five-Year Plan (2011-2015) which is not the case in many other developed and developing countries (see Olotuah & Bobadoye 2009). For example, the total funds approved for the Housing Assistance Program during the Eighth Five-Year Plan is 372.2 million OMR for the entire period (Planning and Statistics Department 2013). In the Seventh Five-Year Plan (2006-2010), the funds approved were only 25.7 million OMR for the entire period (Planning and Statistics Department 2012). In addition, a total of 95.3 million OMR was approved for the Housing Loans Program during in the Eighth Five-Year Plan (2011-2015) (Planning and Statistics Department 2013). To compare, this fund was only 17.2 million OMR for this program for the Seventh Five-Year Plan (2006-2010) (Planning and Statistics Department

2011a). As the government subsidy to these projects increases, it is important to evaluate the outcomes of such activities.

In addition, assessing the housing adequacy and supply/demand seems to be essential in examining the success or failure of housing projects in Oman. The results of this research will potentially be a valuable resource for the Omani Government as well as private investors in housing in Oman. Finally, this study contributes to the body of knowledge on social housing and its provision. It will help to fill the gap in the literature regarding social housing policy in developing countries generally and in Oman specifically. The fact that such a study is needed was identified by Alndabi (2010, p. 88) where he has recommended the need for more "studies involving low-income residents in order to develop housing patterns that meet needs of low-income population in the community".

1.5 Thesis Structure

This thesis comprises eight chapters:

- Chapter One (the current chapter) introduces the research background and the thesis structure. It gives a brief introduction to the topic and identifies the significance of the study. The aims of this study as well as the study area are also outlined in this chapter. The research questions are stated and the thesis structure is presented.

- Chapter Two shows the context of the study including Oman's location, population, economy, and administrative divisions. It also describes the social housing policy in Oman, outlining the programs offered by this policy. The financing source for this policy is clarified.

- Chapter Three reviews the social housing term and social housing evaluation generally. The synthesis of this literature is aimed to reinforce the significance of the study. The result of this discussion concludes with a workable definition for the concept of social housing that will be used in this study. This chapter also outlines the principal debate in social housing delivery as expressed in the international literature. The chapter then reviews the term 'housing adequacy' with its seven components. The literature on Omani social housing is also shown.

- Chapter Four shows the argument for selecting twelve housing adequacy indicators which are used in this research to evaluate the adequacy of the social housing units in Oman. These indicators were developed originally by the UN-HABITAT. This chapter ends up with a model that is contextualised and modified to suit the Omani case, fitting the Omani social, economic, religious, and cultural context.

- Chapter Five discusses the data and methodology used in this research. The first part shows how the social housing programs have been selected to fit the aim of this study. The following part identifies the study area in which five Governorates' centres in Oman have been selected: Al Rostaq, Nizwa, Sur, Ibri, and Al Buraimi. After that, the sample size of 330 housing units is justified. The following part shows data sources including primary sources such as questionnaires with households, interviews with policy makers, and site visits as well as secondary sources of data. Data analysis and limitations are discussed in the last part of this chapter.

- Chapter Six presents, analyses, and discusses the findings with regard to the adequacy of social housing units provided by the Residential Units Program. The modified UN-HABITAT model is applied objectively and subjectively to evaluate the social housing units. This chapter is targeted to answer the first question of this study.

- Chapter Seven presents the current and future demand of social housing in Oman. The waiting list method is utilised to show the current needs of the Housing Assistance Program and Housing Loans Program.The 'social security households' method is also applied to ensure the accuracy of the current demand for the Housing Assistance Program. For the future, the study uses the population projection method, providing an estimation of the future demand. This chapter answers question two of the study.

- Chapter Eight is the conclusion in which the research questions of the study are answered briefly and directly. . The chapter ends by identifying the study recommendations and areas that need further research.

Chapter 2: Context of the Study

2.1 Introduction

The previous chapter identified the study background, research aims, and significance. This chapter is intended to give general information about Oman. It shows the location, administrative divisions, population, and the economy of Oman. As this study focuses on social housing in Oman, this chapter will illustrate the rationale, development, and the beneficiaries of the social housing in Oman. The three different programs that are offered by the social housing policy will be described; the Residential Units Program, the Housing Assistance Program, and the Housing Loans Program. This will be the basis for understanding the context of the study.

2.2 Background of Oman

The official name of Oman is the Sultanate of Oman. It is a monarchy led by His Majesty the Sultan Qaboos since 1970. It is mentioned that,

> Sultan Qaboos has been the architect of Oman's growth and progress. It is His Majesty's vision that has seen the country blossom and develop into the vibrant 21st century hub we know today. By setting out and adhering to a selection of national goals, achieved over a series of five year plans, Sultan Qaboos has spearheaded a comprehensive program that has transformed Oman, bringing it to total modernity while remaining faithful to its traditions, heritage and historical identity (Ministry of Information 2013, p. 44).

Since that renaissance year, the Sultanate has undergone significant changes motivated by the leadership of His Majesty the Sultan and the economic development resulting from the oil exports. Because it is a Sultanate, His Majesty the Sultan is the top policy maker in the State. He has the legitimate right and authority in allocating funds for different sectors as stated by the Basic Statute of the State (Ministry of Legal Affairs 2011).

2.2.1 Geography and Administrative Division

Oman occupies the south-eastern part of the Arabian Peninsula with a total area of 309,500 square kilometres. It is the second largest country in size in that area. Oman shares borders with the

Kingdom of Saudi Arabia to the west, Yemen to the south-west, and the United Arab Emirates to the north. It overlooks the Arabian Sea, the Sea of Oman, and the Arabian Gulf (see Figure 2.1).

Figure 2.1: The location and the administrative divisions of Oman

Source: Modified from Daniel 2013

The Sultanate of Oman is divided into eleven administrative divisions called Governorates: Muscat, Al Batinah South, Al Batinah North, Ash Sharqiyah South, Ash Sharqiyah North, Al Dakhiliya, Al Buraimi, Musandam, Adh Dhahirah, Al Wusta, and Dhofar (Ministry of Information 2013). Each of these Governorates is divided into districts or provinces called wilayats (cities) and the capital of each Governorate is called the Governorate's centre or Governorate's capital, which are themselves wilayats. Figure 2.1 shows the location of the eleven Governorates while Table 2.1 shows the name of the Governorates' Centres as well as the number of wilayats in each of these Governorates.

Table 2.1: The name of the Governorates and their capitals in Oman

The names of the Governorates	The names of Governorates' capitals 'wilayat'	The number of wilayats in each Governorate
Muscat	Muscat	6
Al Batinah North	Sohar	6
Al Batinah South	Al Rostaq	6
Al Dakhiliya	Nizwa	8
Ash Sharqiyah North	Ibra	6
Ash Sharqiyah South	Sur	5
Adh Dhahirah	Ibri	3
Al Buraimi	Al Buraimi	3
Musandam	Khasab	4
Al Wusta	Haima	4
Dhofar	Salalah	10
Total number	11 capitals	61 wilayats (that includes the 11 Governorates' capitals)

Source: Ministry of Information 2013

2.2.2 Population

According to the National Centre for Statistics and Information (NCSI 2014b), the total population of Oman by mid-2014 reached 3.9 million. Since the first census in Oman in 1993, the official statistics have shown a remarkable increase in the population. As can be seen from Table 2.2, the population increased from 2 million in 1993 to around 2.3 million in 2003, with an annual growth rate of 1.6 per cent. Between 2003 and 2014, the average annual growth rate was 2.4 per cent and the total population jumped to around four million. Overall, in twenty years, the population number went from two million in 1993 to around four million in 2014. Table 2.2 below shows the population in Oman, while Table 2.3 shows how these numbers are distributed between the eleven Governorates in Oman.

In general, the distributions between the Omani and non-Omani populations are different (see Table 2.4 below). As the economy of Oman has witnessed a significant development during the last three decades, resulting from oil, the migration to Oman has increased. Those people come to work in different sectors such as industry, construction, and many other sectors. Here it is relevant to point out that this study focused only on the Omani people. That is because social housing in Oman is only provided to Omani citizens.

Table 2.2: Population development in Oman between 1993 and 2014

Year	Population in thousand
1993	2,000
2003	2,341
2010	2,773
2011	3,295
2012	3,623
2013	3,855
2014	3,992

Source: NCSI 2014b

Table 2.3: Number and percentage distribution of population by Governorates in Oman in mid-2014

The names of the Governorates	Total population	Percentage
Muscat	1,210,480	30.3
Al Batinah North	655,873	16.4
Al Batinah South	360,521	9.0
Al Dakhiliya	403,012	10.1
Ash Sharqiyah North	242,131	6.1
Ash Sharqiyah South	267,322	6.7
Adh Dhahirah	185,596	4.6
Al Buraimi	99,836	2.5
Musandam	39,813	1.0
Al Wusta	40,936	1.0
Dhofar	377,506	9.5
Total number	2,992,893	100.0

Source: NCSI 2014b

Table 2.4: The population in the Sultanate of Oman from 1993 to 2014 by nationality (Omani and non-Omani)

Year	Population in thousands			The relative distribution of the population (%)	
	Omani	Non-Omani	Total	Omani	Non-Omani
1993	1,465	535	2,000	73.3	26.8
2003	1,782	559	2,341	76.1	23.9
2010	1,957	816	2,773	70.6	29.4
2014	2,261	1,732	3,992	56.6	43.4

Source: NCSI 2014b

Figure 2.2 shows the structure of the Omani population, exhibiting a relatively young community. In 2014, 22 per cent of the population were 15 years old or under, 47 per cent were between 15 and 34 years old, 28 per cent were between 35 and 64 years old, and only three per cent were at age 65 or more (NCSI 2014c). It is clear that those who were under the age of 35 represented around 69 per cent of the population, making the Sultanate youthful. The Omani population structure is relatively complex possibly as a result of government policy in the 1990s. This complexity could not be investigated here but it may impact on future household demand. This complexity needs further investigation which is one of the recommendations made in Chapter Eight.

Households consume housing not individual persons. A discussion relating the population numbers to household numbers is available in detail in section 7.4 which deals with housing supply.

Figure 2.2: The structure of the Omani population by age and sex
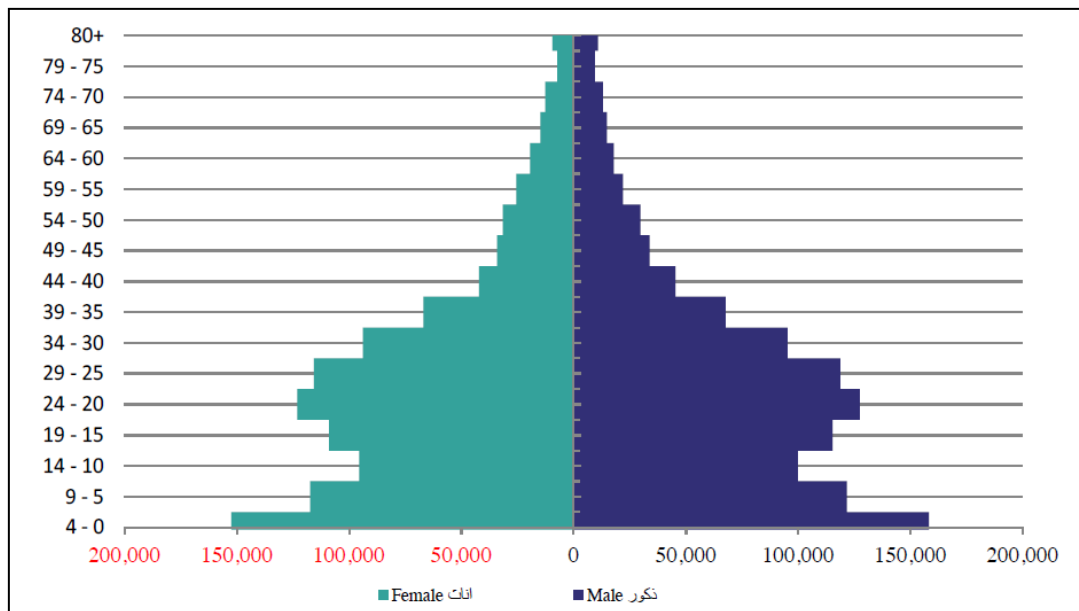
Source: NCSI 2014c

2.2.3 Economy

Oman is considered as a middle income economy in the region when compared to other neighbouring Arab Gulf States. It is an oil-dependent country in which oil contributed around 75 per cent of government revenue in 2013 (CBO 2014). Moreover, Oman uses natural gas as another important source of government revenue; contributing around 10.7 per cent. Other sources such as mining, fisheries, farming, and industry are minor providers in the Omani economy. As seen, Oman depends heavily on the hydrocarbon sector in its economy. This issue has been recognised by the

Omani Government as a challenge with oil depletion projected in the coming two decades (Ministry of National Economy 1996).

Indeed, this has led the Omani Government to implement policies that can overcome the instability of its oil-dependent economy. To exemplify, *The Oman Vision 2020* is a long term strategy introduced in 1996 to decrease dependency on oil revenues by diversifying the economy, promoting the role of the private sector, encouraging foreign investment and producing skilled national human resources (Ministry of National Economy 1996). It is very important to mention here that Oman is totally funding the services sectors such as education, health, transport, and others. Most importantly to this study, social housing is among these services that are provided by the Omani Government using the oil revenues.

In all services and sectors, the Omani Government initiated plans called National Development Plans, aimed at setting the guidelines for national, comprehensive development. These plans cover five year periods of time since 1976. The First Five-Year Plan includes the years 1976-1980. Forty years on, Oman now follows the Eighth Five-Year Plan (2011-2015). Each ministry has to accomplish these plans' aims in its responsible service. With regard to this study, the social housing service is located within the responsibility of the Ministry of Housing in which it is planned financially and administratively following the Five-Year Plan. In each plan, there is a certain budget allocated to the Ministry of Housing to provide social housing through its different programs that will be detailed later.

2.3 Social Housing Policy in Oman

Social housing policy has been applied in Oman to raise the standard of low income Omani people since 1973 under Alshabia Housing Law (Ministry of Information 2013). That Alshabia housing, generally, means social housing units where many attached one-storey houses were built on governmental land and offered to low income Omani citizens. Nowadays, Alshabia Housing Law is called social housing policy and units offered by this policy are called social housing. Since 1973 until 2014, many changes were made to this policy and its executive regulations. These are discussed in more detail in Chapter Seven. This section, will present a brief description of the programs provided by this policy.

Social housing in Oman is officially provided either physically or through financing by the Omani Government through the Ministry of Housing, which is the agency that takes the responsibility for

providing the country's social housing. That is due to a failure of the private housing market to provide suitable housing to accommodate the most vulnerable residents and also as a result of the national goals set in the National Development Plans which intend to improve the overall standard of living of Omani citizens (see section 3.2.1 for more details).

Social housing policy in Oman provides three different programs: Residential Units Program, Housing Assistance Program, and Housing Loans Program. While the first program aims to build and provide new housing, the second and the third offer financial support to low income Omani people to purchase or build new housing or even to renew or expand their old residential units. The following paragraphs explain each of these programs.

2.3.1 The Residential Units Program

 The Residential Units Program is the first program that has been implemented under the social housing policy in Oman. It has been applied since 1973. It is a governmental grant that provides free housing units to Omani households with monthly income of 400 OMR or less (Ministry of Housing 2011). Provision of these dwellings is an order from His Majesty the Sultan, through his yearly tours around the various Governorates and cities in the Sultanate. Although these units are provided at the behest of His Majesty, the Ministry of Housing is the housing agency which takes the responsibility for choosing locations, designs, constructors, number of storeys, as well as number of rooms for each housing unit. Generally, this social housing is built together as attached housing in one location as a project or as one detached house. All cities in the Sultanate have various locations of this housing. Although the total numbers of the houses in each project are different from one location to another, most of those projects include from ten to one hundred units.

These houses are provided, normally, with bedrooms, living room, majlis (place for visitors), kitchen, toilets and yard. Although they mostly have one basic design, not all units have the same numbers of bedrooms and toilets. The family size is sometimes taken into consideration. Families that have one or two persons are provided with a one bedroom unit (see Appendix 1), while families that have three to seven people are provided with a two bedroom unit (see Appendices 2 and 3). On the other hand, families with eight people or more are provided with a unit that has three or four bedrooms (see Appendices 4 and 5). Here it is worth clarifying that many houses which were provided before 2010 have two bedrooms. This issue is discussed in more detail in Chapter Six.

General services are provided to these social housing projects such as water, electricity, and a sanitation system. In large projects, other services are also constructed such as a place to pray which is called a mosque (see Appendix 6) and a public hall (see Appendix 7). These services as well as the units are offered by the Omani Government free of charge for eligible people. Despite this fact, the social housing remains under the ownership of the Ministry of Housing for around ten years (Ministry of Legal Affairs 2010). Beneficiaries are prohibited during this period from selling or renting these units. After ten years, the Ministry of Housing gives householders the ownership of the house.

A number of housing projects have been built in Oman in different cities between 1973 and today. Here are some examples of these projects. In Hamra Aldoroe (Adh Dhahirah Governorate, Wilayat Ibri), 90 housing units were built in 2008 (see Figure 2.3). A mosque, public hall, centre for traditional crafts, and shops were also provided in that area. The cost of this project was 1.831 million OMR.

Figure 2.3: Hamra Aldoroe residential housing project in Adh Dhahirah Governorate

Source: Ministry of Housing 2012b

Another project was built in Niabat AlJabal Alakdar (in Al Dakhiliya Governorate, Wilayat Nizwa) in 2009. Sixty nine units were built in four different locations with a cost of 2.706 million OMR (see Figure 2.4).

Figure 2.4: Residential housing project with 69 social units in Al Dakhiliya Governorate

Source: Ministry of Housing 2012b

Alajaez residential housing project in Wilayat Haima (Al Wusta Governorate) is another example of social housing that was offered by the Omani Government (see Figure 2.5). It was built in 2008 with a budget of 1.831 million OMR. A mosque, public hall, and 55 houses were provided in this project. Wilayat Dima Wa a'tayeen in Ash Sharqiyah Governorate was also provided with 12 residential units in 2006 (see Figure 2.6).

Figure 2.5: Alajaez's residential housing project in Al Wusta Governorate

Source: Ministry of Housing 2012b

Figure 2.6: Residential housing project in Ash Sharqiyah Governorate

Source: Ministry of Housing 2012b

2.3.2 The Housing Assistance Program

The Housing Assistance Program is the second program that is offered through the social housing policy in Oman. It has been implemented since 1981. It aims to provide financial support to low income households with a monthly income of 300 OMR or less (Ministry of Housing 2011). This support is a grant from the Omani Government and people do not repay. The grant is limited to 25 thousand OMR in the case of building three bedroom units and up to 20 thousand OMR to build two bedroom units. The assistance is also awarded to restore, maintain, or extend a unit that is already owned by the applicant. From 2011 to 2014, 14,000 households have benefited from this program in the Sultanate (see Table 2.5). The overall supply provided by this program, the relationship of the program numbers to the total in terms of the percentage of the relevant households (since 1981 till 2014), as well as the general conditions to be eligible' from this program are shown in Chapter Seven.

Table 2.5: Number of households which benefited from the Housing Assistance Program in (2011-2014) in Oman

Governorate	2011	2012	2013	2014	Total
Muscat	45	225	313	199	782
Al Batinah North	244	538	810	594	2,186
Al Batinah South	222	378	419	376	1,395
Musandam	432	32	0	0	464
Adh Dhahirah	169	318	366	259	1,112
Al Buraimi	18	183	237	116	554
Al Dhakiliya	223	469	338	402	1,432
Ash Sharqiyah North	481	682	724	573	2,460
Ash Sharqiyah South	377	449	440	693	1,959
Al Wusta	12	20	20	65	117
Dhofar	351	485	445	384	1,665
Total*	2574	3779	4112	3661	14,126

* These are the numbers of new households which benefited in each year

Source: Planning and Statistics Department 2014a

2.3.3 The Housing Loans Program

In 1991, a new program was launched under the social housing policy in Oman. It is called the Housing Loans Program. It offers loans of up to 30 thousand OMR without interest. It is conditional that the applicant's monthly income would not be less than 301 OMR and not more than 400 OMR at the time of registering the application. The total monthly income should also not be more than 600 OMR when the application is eventually processed (Ministry of Housing 2011). In general, this money is repayable without any interest rate in monthly instalments but not exceeding 20 per cent of the total income of the borrower. Many households have benefited from this program in the

various governorates in the Sultanate (see Table 2.6). The overall supply of this program (since 1991 till 2014) is shown in Chapter Seven.

Table 2.6: Number of households which benefited from the Housing Loans Program in (2011-2014) in Oman

Governorate	2011	2012**	2013	2014	Total
Muscat	89	259	68	54	470
Al Batinah North	34	322	27	50	433
Al Batinah South	38	315	43	79	475
Musandam	245	14	52	25	336
Adh Dhahirah	27	199	52	12	290
Al Buraimi	7	50	14	0	71
Al Dhakiliya	63	377	144	70	654
Ash Sharqiyah North	27	145	52	27	251
Ash Sharqiyah South	58	92	29	46	225
Al Wusta	4	10	0	5	19
Dhofar	71	208	40	48	367
Total*	663	1991	521	416	3,591

* These are the numbers of new households which benefited in each year

** The financial support provided by the Omani Government to this program was increased (see section 7.2 for more details)

Source: Planning and Statistics Department 2014a

Many people living in different cities in Oman have benefited from the three social housing programs. Here, it is worth mentioning that the Residential Units Program provides housing units. In contrast, the two other programs provide financial support but not a specific social housing unit. Thus, the recipients of these two programs are called household beneficiaries as the outcomes can be housing units and support for construction or alteration of existing units. Between 1973 and

2010, 12961 social housing units were built and offered in the Sultanate through the Residential Units Program (Planning and Statistics Department 2011b). In addition, 8115 households and 4252 households benefited from the Housing Assistance Program and the Housing Loans Program respectively (Planning and Statistics Department 2011b). Table 2.7 below shows the number of beneficiary households who benefited from the social housing policy until 2010. Here, it is good to point out that, this study chose the units provided through the Residential Units Program in evaluating the housing adequacy. This was explained in more detail in the methodology Chapter.

Table 2.7: The number of households which benefited from the three programs in Oman until 2010

Governorates	The name of the program			Total
	Residential Units Program (from 1973 till 2010)*	Housing Assistance Program (from 1981 till 2010)**	Housing Loans Program (form 1991 till 2010)**	
Muscat	2,716	1,164	254	4,134
Al Batina North and Al Batina South	1,535	1,914	1,178	4,627
Musandam	519	368	174	1,061
Adh Dhahirah and Al Buraimi	1,492	643	448	2,583
Al Dhakiliya	1,509	1,348	583	3,440
Ash Sharqiyah North and Ash Sharqiyah South	2,533	1,910	982	5,425
Al Wusta	1,192	112	103	1,407
Dhofar	1,465	656	530	2,651
Total	12,961	8,115	4,252	25,328

* These are the actual numbers of units provided through this program
** These numbers represent the households which benefited from this program
Source: Planning and Statistics Department 2011b

2.4 Financing Social Housing in Oman

Many researchers have agreed that finance is one of the significant factors that affect housing provision (e.g. Lawson et al. 2009; Newhaven Research 2010). Mukhtar (1997, p. 29) has stated that "finance is a major constraint of housing supply". Some researchers have argued that the provision of housing, as it is one of the basic needs, is a fundamental responsibility of government (e.g. Mukhtar 1997; Olotuah & Bobadoye 2009). In regard to Oman, although there are some

Islamic charity groups and societies that assist low income people to get access to housing, the main source of funding for social housing units is the Omani Government. Such funding is clearly articulated in each Five-Year Development Plan by a council called the Supreme Council for Planning. This council approves funds for all sectors as well as the social housing programs. As the funds allocation is a major factor that has affected the supply of social housing, these funds provided by the Omani Government for the social housing programs are discussed in more detail in Chapter Seven.

The following table (Table 2.8) summarises the characteristics of the social housing in Oman as was discussed above.

Table 2.8: Characteristics of Oman social housing

Size	Total beneficiary households from 1973 till 2014 were around 43,795. That represents around 15.7 per cent of the total Omani households.
Objectives	Raising the living standard of the low income Omani citizens.
Organisational structures	The Ministry of Housing is the housing agency that is responsible in providing social housing.
Housing type	For homeownership only (not for rent)) and mainly two-bedroom detached homes.
Funding	Social housing is provided by the Omani Government through the Ministry of Housing as grants or loans without interest.

2.5 Summary

This chapter presented some general information about Oman. The general political regimes, economic status, and demographic trends were discussed and outlined. These issues were selected to be explained in the chapter because they all together formulate the Omani context. A brief overview was given of the three social housing programs funded by the Omani Government to support low income Omani households.

Chapter 3: Literature Review

3.1 Introduction

The aim of this chapter is to discuss the state of current knowledge, and review related literature on social housing and social housing evaluation generally. The chapter reviews the following topics: social housing and public housing terms, international social housing debates, and housing adequacy components. Common forms of policy evaluation and literature on social housing evaluation in Oman are also illustrated in this chapter. Covering these subjects is important to better understand the main concepts involved, to identify the important areas of current research, and to identify the gaps in literature which this study attempts to fill.

3.2 Social Housing and Public housing – the Use of Terms

A significant study by Whitehead and Scanlon (2007) which overviewed the social housing approach in nine different European countries (Austria, Denmark, England, France, Germany, Hungary, Ireland, the Netherlands and Sweden) found that there is "no single formal definition of social housing" (Whitehead & Scanlon 2007, p. 8). The reason for this conclusion derives from many factors. Firstly, social housing in these countries sometimes denotes home ownership like in Sweden and Netherlands but sometimes refers to rented units. Secondly, social housing sometimes is rented below the market level as in England and Ireland, but that is not the case in all other remaining countries. Thirdly, although the target groups in most of these nine countries are low income households, in Sweden and Austria all households are eligible to get access to social housing. Hence, it is obvious that each of these countries has its own criteria for defining 'social housing'. These facts have supported the argument that no one specific definition could be used to describe the social housing concept.

In the Australian context, the term 'social housing' has been used to mean rental housing that is owned and managed by the State governments, by not-for-profit organisations, by community housing organisations, and by religion-based organisations and allocated to disadvantaged people (especially those on low incomes) with specific eligibility criteria. In each State there is a waiting list of people waiting for social housing (Groenhart 2010; Milligan et al. 2009). Reviewing the literature confirms the fact that public housing, community housing and indigenous housing are considered as types of social housing in Australia. Public and some indigenous housing is managed

by the State, but community housing is owned and managed by community-based organisations (Groenhart 2010; Jones et al. 2007).

Some studies, in defining social housing in Australia, have gone beyond this common usage to involve other services and outcomes, not just the residential units offered to people on low incomes or shelters provided by government, the private sector, or other organisations (Jones et al. 2007). A good example of such a study that has used this approach is Jones et al. (2007). Social housing approaches are defined in that paper as "those policies, organisations and services designed to provide long-term, not-for-profit, rental housing in order to achieve a diversity of social purposes encompassing both shelter and beyond shelter outcomes" (Jones et al. 2007, p. 6). Here, it seems that social impacts that resulted from social housing delivery have also been considered as an important concern within the social housing concept. Therefore, social housing is not just about the physical construction of units but also about the impacts and outcomes of these dwellings.

On the other hand, reviewing the literature in Arabic countries resulted in an important theme. Both the concepts 'social housing' and 'public housing' refer to services in which the government supports vulnerable and low income people in getting access to housing. Whenever there is a house offered with assistance from government it will be called social housing or public housing. So there are no clear cut boundaries between the two terms. Although some researchers used the term public housing when referring to housing delivered by government to poor, disadvantaged and mentally ill people and sole parents (e.g. Baeissa & Hassan 2011; Djebarni & Al-Abed 2000), the term 'social housing' is in the Arab Gulf States commonly used to refer to this type of housing. These countries are Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Kuwait, and Oman. In other words, policies that take the responsibility of helping eligible disadvantaged households in getting access to housing in these countries are called social housing policies.

Some research in Saudi Arabia, United Arab Emirates, and Yemen has used the term 'public housing', 'low income housing', or 'low income public housing' instead of social housing, and that refers to a government subsidy in building and distributing residential units to their low income citizens. Good examples of these studies are Abdellatif and Othman (2006), Alaghbari et al. (2011), Mustapha, Al-Abed and Wild (1995), Djebarni and Al-Abed (2000), and Mubarak (2010). Regarding housing design, social housing in these studies has represented a single or double storey house, high rise multi-storey or low rise, detached or semi-detached houses and other types of residential unit stock.

Many other studies that were done in Malaysia, Nigeria, Maldives, and Brunei have used different definitions in discussing social housing and public housing (Ibem, Aduwo & Uwakonye 2012; Leong 2011; Mohit & Azim 2012; Salleh et al. 2011). A study done in Malaysia has stated that social housing is "low-cost housing which has an amount of subsidy involved in its construction" (Mohit & Nazyddah 2011, p. 143). On the other hand, public housing has been defined in Isa and Jusan's (2012, p. 184) paper in the same country as "housing that is built and owned by government, typically provided at nominal rent to the needy or publicly funded and administered for low income families". What is clear is that there is considerable similarity between the two terms.

From the foregoing literature, although there is not agreement on the definition of social housing, the concept has generally been used to refer to housing that is provided to low income people with different types of assistance from public sector, private sector, or any non-profit organisation. It can apply to either rented or purchased housing. Social housing is a very widely used term with a broad definition which includes different types of housing. In some developed countries, social housing has been described as public housing or community housing. Reviewing the literature also shows that the three terms 'social housing', 'public housing', and 'low income housing' have been used interchangeably in some studies in referring to the government's support of poor people in getting accesses to housing. The usage of these terms in Ibem, Aduwo & Uwakonye's (2012) paper is evidence to support this argument.

In reviewing the literature regarding the usage of the terms 'social housing' and 'public housing' in Oman, which is the study area of this current research, it is important to mention that until now there were only three relevant works identified that have researched on the social housing in Oman. In Alnasiri's (2011, p. 12) study, social housing has been defined as "governmental programs that aim to help low income Omani households (those with monthly income of 300 OMR or less) to get access to housing". Alndabi's (2010) paper, however, has stated that social housing is a program that aims to deliver adequate housing for low income households through the implementation of integrated projects. Alndabi (2010) claims these programs should be connected to public services to create appropriate development and a stable life for citizens. On the other hand, social housing in Rahman, Al-Harthy, and Al-Arifi's paper (2002, p. 475) means "providing houses with basic services to low income people through the social housing program, contributing in improving their situation". Thus, it is clear that while the first definition was concerned about the economic criteria that are required to get access to such housing, the second and the third definition have gone beyond

that to include the connection between services and the residential units. In fact, although these studies have used different definitions of social housing, they generally refer to the social housing units which are delivered through the social housing policy in Oman.

Here, it is worthwhile saying that social housing policy in Oman uses 'social housing' rather than 'public housing' in its documents. In addition, the term 'low income housing' has also been used generally in everyday life in referring to housing units offered through the social housing policy in Oman. This study, thus, will use social housing and low income housing as synonymous. The working definition of 'social housing' in this study is: housing that is delivered by the government to low income people to give them access to home ownership. The rationale for using this definition reflects the common usage of the expression 'social housing' in Oman as well as relating to the social housing policy in that country. Using this definition will also fit with the widespread usage of this term in other Arab Gulf States specifically, and in the developing world in general.

3.3 The Principal Debate in Social Housing Delivery

This section will outline the principal debate in social housing delivery as expressed in the international literature. Exploration of the debate is used to acknowledge the points of difference and similarities between the Oman context and the broader international setting.

The debate centres around two different approaches that have been used by governments around the world to ensure the provision of affordable and low cost social and public housing for low income earners: supply-side and demand-side subsidies. The supply-side subsidies are also called the "object or production subsidies" (Milligan 2003, p. 63) or a "bricks-and-mortar" (Gruis & Nieboer 2007, p. 49) approach. One such approach is where the price of the new housing is reduced by reducing the cost to the investors through providing land or finance or reduced development times. Other methods of supply-side subsidies include incentives to developers to provide social housing such as increased height and density limits where some percentage of that development bonus is for social housing. Inclusionary zoning is also used to ensure social housing is provided as part of the housing developed in a particular area. This can include targets for social housing delivery within a single development or a precinct (Kraatz et al. 2015). Previously, a common supply-side approach was the actual supply of built social housing stock by government, although most governments have now moved away from this approach because of the cost implications of the provision and maintenance of the stock (Milligan 2003). The demand-side subsidies can take, on the other hand, the form of housing vouchers, rental subsidies, housing loans, first home owners' grants and tax

benefits which can assist low income households to afford market-priced housing for rental or ownership (Gruis & Nieboer 2007; Milligan 2003). Here, it is worth mentioning that many governments around the world started with the supply-side subsidies but more recently they have shifted to the demand-side subsidies (Randolph and Judd 2001).

Reviewing the literature shows that each of the two social housing approaches has advantages as well as disadvantages. For example, Gruis & Nieboer (2007) have shown that the direct production of public housing through supply-side subsidies may lead to an inefficient allocation of such houses and spatial stigmatisation and segregation may result. Milligan (2003, p. 63) has argued that "supply-side interventions may not result in price benefits, if industry is not competitive or if work practices or government regulations hinder efficiency". Other scholars (e.g. Arthurson 2002; Hafazalla 2006; Hulse et. al 2010) have added that public housing estates where many low income and vulnerable people live together in one community may result in social and economic impacts such as limited access to the opportunities offered in the broader society, including job networks. On the other hand, Gruis & Nieboer (2007) have shown that the demand-side subsidies also have drawbacks. They showed that subsidisation of individual households through housing allowances or tax benefits can also be (mis)used as an implicit subsidy to the landlords, who can increase their rents while the dwellings remain affordable to the tenants (the increase is paid out of the housing allowance).

Kraatz et al. (2015) in their report discussed the benefits and costs of the above two forms of subsidies: demand-side and supply-side. They stated that demand-side subsidies, such as the rent assistance and first home owners grant in Australia, are less costly per unit for the government compared with supply-side subsidies or the direct provision of social housing. On the other hand, although supply-side subsidies seem to be more expensive for the government they offer guaranteed long term supply. They also declared that although the demand-side subsidies seems to be more attractive to the government because of the direct cost efficiency, these subsidies "typically do little to remedy the systemic issues that make housing increasingly unaffordable, and should therefore be considered only complementary measures in addition to effective supply-targeted policies" Kraatz et al. (2015, p. 38). This view is supported by Milligan (2003) who argued that where there are structural or institutional reasons for a market not being able to produce sufficient housing (such as land, materials or labour shortages), demand-side subsidies may contribute to price inflation, rather than improve affordability.

During the rise of neoliberalism in the 1980s and 1990s (Peck & Tickell 2002) many Western countries saw public housing shift away from government provision and control towards a reliance on market-based provision. This was often coupled with reduced levels of government support, a growth of the owner-occupied sector, and greater independence of social landlords from the government (Gruis & Nieboer 2007).

3.3.1 The Debate outside the Global North

Social housing is delivered in a multitude of ways depending on the cultural, political and economic norms within each country. In addition, the policy, legal and financial frameworks differ significantly between countries, creating different options for the delivery of social housing depending on what is legally and financially possible (Kraatz et al. 2015). This has implications for the wider application of the demand-side and supply-side approaches.

There are particular problems in developing countries that are clearly identified by Muktar (1997, p. 28) who has argued that "subsidy which is used by many countries as a tool of public policy to provide affordable housing for poor households, is seen as less effective in many developing countries because their resources are too limited". The Arab Gulf States such as Saudi Arabia, United Arab Emirates, Oman, Kuwait, Qatar and Bahrain are considered to be developing countries. While the challenges associated with a low level of resourcing for social housing are not a key problem in the Arab Gulf States because of the wealth generated by oil and gas, there are other issues for social housing provision in these countries. For example, Mubarak's (2010) research of the Saudi Arabian public housing program found that overcrowding was common.

Social and public housing is generally the policy response by government to a failure of the private housing market to accommodate the most vulnerable residents. Social housing in Oman is generally consistent with this approach, though it is also the result of the National Development Plans. The plans intend to improve the overall standard of living of Omani citizens. For housing, this includes the need to improve the quality of existing homes and to provide more physical housing for the poorest citizens. In Oman, the government directly provides or funds the majority of social housing. This is consistent with the direct supply-side subsidy approach. The demand-side subsidies are implemented through loans and grants to eligible citizens. There is currently no social housing rental program in Oman and there is no rental subsidy for private rentals.

Policy makers interviewed in the research, stated that the reason behind the social housing policy is to raise the standard of living of the poorest Omani citizens. Government investment in social

housing in Oman commenced in the 1970s and coincided with government investment in education, infrastructure, health and the economy through the National Development Plans (see Chapter Two for more detail). Unlike the general approach in the global north, in Oman, the poorest residents may not be Omani citizens and are therefore not eligible for social housing. This is consistent with the policies in other Arab Gulf States such as Saudi Arabia and United Arab Emirates (Mubarak 2010).

In Oman and many other countries governments directly supply social housing. In Oman, the government develops housing for ownership for the lowest income Omani residents. There is an explicit objective in Oman to increase the level of home ownership for Omani citizens. In Oman, as stated earlier, there is no social housing or subsidies for rental accommodation. There are demand-side subsidies, however, in the form of grants through the Housing Assistance Program and loans through the Housing Loans Program. The grants are not repaid and the loans are interest free.

3.4 Housing Adequacy Components and Approaches

To what extent has the social housing policy in Oman been able to deliver adequate housing? As answering this question is one of the main objectives of this study, the concept of housing adequacy or adequate housing needs to be explored through the extant literature. In addition, there should be a clear vision of what adequate housing, in this study, means. Therefore, the following part of this document will review the literature on housing adequacy and then a workable definition of adequate housing for this research will be given.

Generally, there are many components that have been used in the literature to assess the adequacy of housing. These aspects vary from one country to another so that there is no international agreement on specific components that could be applied to measure housing adequacy. The Canada Mortgage and Housing Corporation (CMHC 2010), for example, considers housing as adequate if residents stated that their housing does not need any major maintenance or repairs. On the other hand, housing adequacy used in Westfall's (2010) study which was conducted in Canada has applied the follows components: affordability (shelter cost to household income ratio), the space (number of rooms and average family size), dwelling services (such as availability of facilities and maintenance requirements), support (if the house required any structural maintenance), and some social issues related to housing (such as noise, violence, and safety issues).

Although studies carried out in the developing world are not widespread, they have used various components to assess the adequacy of housing. Mukhtar's (1997) paper, which was done in Libya, assessed the adequacy of the public housing by using components that have related to the density of housing, the availability of basic utilities and services provided to residents, and the extent of residents' satisfaction with the level of such services and infrastructure. Other research carried out in Yemen by Djebarni & Al-Abed (1998) and Mustapha, Al-Abed & Wild (1995), on the other hand, used another set of components to assess housing adequacy. Housing adequacy in these studies is related to the quality of the housing environment which combined three aspects: the dwelling interior, the dwelling exterior, and the environmental schedule. Moreover, housing adequacy was measured in Ibem and Amole (2011) and Ibem, Aduwo & Uwakonye (2012) (studies that were done in Nigeria) by using four components: housing unit attributes, housing services and infrastructure, neighbourhood facilities, and the management of the housing estate.

Table 3.1 below summarises the main housing adequacy components and approaches used in the literature as well as examples of some studies that have applied these approaches in evaluating the adequacy of housing.

Table 3.1: Housing adequacy components and approaches used in the literature

Adequacy components	Approaches used	Examples of studies
Housing space or occupancy rate (number of bedrooms)	- Comparison with occupancy rate that is set out in the housing policies standards (no more than two persons in one bedroom)	- CMHC (2010) - UNHRP (2003) - Mukhtar (1997) - Westfall (2010)
	- Household satisfaction	- Westfall (2010) - Ibem & Amole (2011) - Ibem, Aduwo & Uwakonye (2012)
Housing affordability	- Affordability benchmark (no more than 30 per cent of the household's income spent on housing)	- UNHRP (2003) - Westfall (2010)
Physical condition of housing	- Satisfaction approach	- Westfall (2010)
	- Housing quality index	- Djebarni & Al-Abed (1998) - Mustapha, Al-

Adequacy components	Approaches used	Examples of studies
		- Abed & Wild (1995)
	- Durability (percentage living in permanent structures in compliance with building codes and by-laws)	- UN-HABITAT & OHCHR (2003)
Services provided to the units, neighbourhood, and community	- Household satisfaction	- Mukhtar (1997) - Ibem & Amole (2011) - Ibem, Aduwo & Uwakonye (2012)
	- Proportion of households with access to potable water - Proportion of households with access to adequate sanitation	- UN-HABITAT & OHCHR (2003)
	- Housing quality index	- Djebarni & Al-Abed (1998) - Mustapha, Al-Abed & Wild (1995)
Location	- Housing quality index	- Djebarni & Al-Abed (1998) - Mustapha, Al-Abed & Wild (1995)
Security of tenure	- Proportion of households with legally enforceable contractual, statutory or other protection	- UN-HABITAT & OHCHR (2003)
Social issues (such as privacy, safety, violence, and noise)	- Household satisfaction	- Westfall (2010) - Ibem and Amole (2011) - Ibem, Aduwo & Uwakonye (2012)
Maintenance facilities	- Satisfaction approach	- Ibem and Amole (2011) - Ibem, Aduwo & Uwakonye (2012) - Westfall (2010)

From Table 3.1, it seems that housing adequacy in the literature has been assessed by using different approaches. The approach known as " the objective approach" is one of them. In this specific policy standards are used as a benchmark against which to measure the adequacy of housing. It is widely used in assessing the space and the cost of the dwellings. Different studies from developed as well as developing countries have considered the housing as adequate if the average occupancy rate was two persons per bedroom or less. CMHC (2010) and Mukhtar (1997)'s paper are some examples that have implemented this standard. Other studies such as Djebarni & Al-Abed (1998) and Mustapha, Al-Abed & Wild (1995), on the other hand, have considered the space of the housing as inadequate if the average number of people in each bedroom is three persons or more. Regarding the cost of the housing, housing units have been considered to be adequate if the cost of housing does not exceed the affordability benchmark: 30 per cent of the household's income spent on housing cost or rent (e.g. UNHRP 2003; Westfall 2010).

The satisfaction approach is a second approach which has been applied in the literature in assessing the housing adequacy. This approach is used to assess different housing adequacy components (such as the housing location, housing affordability, and housing space), but many studies have also used the level of satisfaction of the household in evaluating the level of services connected to dwellings (e.g. Ibem & Amole 2011; Ibem, Aduwo & Uwakonye 2012). Mohit and Azim (2012, p. 759) have stated that this residential approach has been used in many empirical studies 'as a criterion of housing quality'.

There are other studies which have combined the two approaches, such as those by Mukhtar (1997) and Westfall (2010). In both studies, specific standards were applied to determine the space of the housing while the household's satisfaction approach has been implemented to assess the remaining housing adequacy components such as the construction quality of the housing stock, the services available, and the maintenance requirements. To make it clear, some components in these two studies have been measured subjectively (by taking into consideration the participants' views) while other housing components have been measured objectively (using benchmarks as standards). Although both approaches have been applied, there was no specific component that was assessed both subjectively and objectively. In other words, none of these studies combined both approaches in measuring any one specific aspect of housing adequacy. This represents a major gap in the housing adequacy research landscape. Without such dual measurement there is no way of judging whether residents' satisfaction is related to objective standards or whether the objective standards

represent adequacy on the part of the residents. This research project, therefore, uses the objective as well as the subjective approach in assessing identified components of housing adequacy.

This paper, to evaluate the adequacy of social housing in Oman, uses the definition outlined by the United Nations Committee on Economic, Social and Cultural Rights and used by the UN-HABITAT and different United Nations human rights treaties such as the Office of the United Nations High Commissioner for Human Rights (OHCHR) and the United Nations Housing Rights Program (UNHRP). This definition has seven components in defining adequate housing: namely legal security of tenure, affordability, availability of services, habitability, accessibility, location, and cultural adequacy (see Figure 3.1).

 The reason for choosing this definition is based on two main factors. The first factor is that this international committee has seven different components in determining the breadth of the concept of 'adequate housing'. These components are comprehensive in addressing most of the housing adequacy aspects used in the literature (see Table 3.1). Secondly, these components are adopted by the UN-HABITAT to evaluate the adequacy of housing in developing countries. Consequently, using such a definition with its seven components is logical and reasonable as Oman, the focus area of this study, is a developing country. Therefore, adequate housing in this study means housing should have legal security of tenure and be connected with services. Adequate housing should also be accessible, habitable, and culturally adequate, as well as provided in an adequate location with affordable cost.

Figure 3.1: Housing adequacy components used in this research
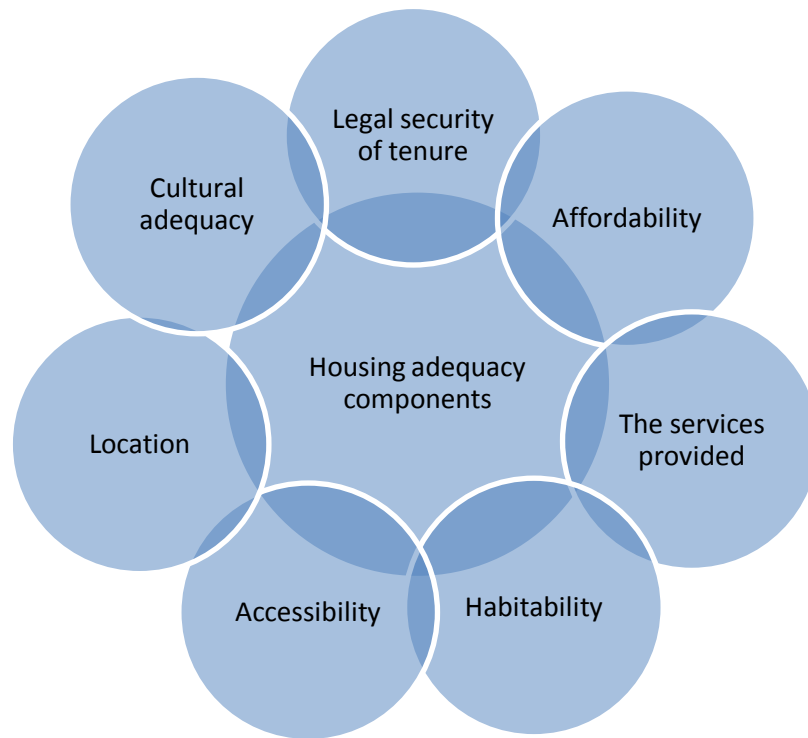
Source: UN-HABITAT & OHCHR (2003)

To support the above argument, there are a number of studies which have been carried out in the Arab Gulf States which have already used some of the components that are adopted by the UN-HABITAT to evaluate the adequacy of low income housing. Regarding the 'habitable' component, (which assesses the structural integrity, the age of housing, and overcrowding) Mubarak (2010) and Baeissa and Hassan's (2011) papers are examples that have used this component to evaluate the adequacy of housing. Mubarak's (2010) study in Saudi Arabia has confirmed that public housing in the capital city is overcrowded and social policy has not considered the extended family structure of Saudi families. Low income public housing in Yemen seems also to be below a habitable standard as Baeissa and Hassan (2011) have concluded in their study. Their paper showed that occupants in this housing were not satisfied about their houses because of the limited and narrow space areas.

Regarding Oman, Rahman, Al-Harthy and Al-Arifi (2002) have discussed the problems associated with social housing in Oman while Alndabi (2010) has focused on three issues of the social housing program in Oman, these issues are: the design of social housing, the space surrounded by the wall of the house, and the distance between these houses and commercial and service activities. On the other hand, Alnasiri's (2011) paper has assessed only the affordability of low income housing in

Oman. It seems that these three studies that have been done in Oman have focused on some, but not all, components of housing adequacy: namely the location of such housing and the affordability components. The results of these papers show that social housing in their study area is affordable and has a suitable location in regard to shops. On the other hand, many other components of housing adequacy such as the accessibility to this housing, habitability, and culturally adequacy have not been studied in Oman.

In sum there is a gap in knowledge. Thus, this study attempts to fill this gap and evaluates the adequacy of social housing. Assessing the performance of housing and its adequacy seems to be essential in examining the success and possible problems of housing projects. The result of this research will provide a valuable feedback to the Omani Government as well as project investors (private sector), as the adequacy of social housing is evaluated. Many authors, such as Head (2008) and Milligan et al. (2007), have shown the importance of evaluation research to the policy makers. The importance of this study is that it will also benefit social housing programs, and hence low income people, by identifying ways to improve the effectiveness of the social housing policy in Oman.

3.5 Formative and Summative Evaluation

Literature shows that there are two common forms of policy, program, and project evaluation; formative and summative (Rossi et al. 2004; Patton 2002; Purdon et al. 2001). The formative form of evaluation seeks to assess the process of the program during the implementation. In other words, it aims to answer the question of how the program works. This type of evaluation also tries to answer the question of how the program is able to achieve or not achieve its objectives. Purdon et al. (2001), on the other hand, have shown that this form gathers information to enhance the program performance. The formative evaluation form also examines factors that affect the overall program achievements.

Summative form of evaluation, on the other hand, is used to assess the impacts and outcomes of policies and programs. Bennett (2003) has stated that this form is more concerned with the effectiveness. In fact, the summative form is used after the implementation of the program, not before. That is why this form is concerned with the connection between the objectives, impacts and outcomes of policies.

Generally, studies in housing have used both forms, formative and summative, in assessing social housing polices, projects and schemes in developed as well as developing countries. The first form has been widely implemented in many studies to determine the factors influencing the overall low income housing satisfaction. Works of Mohit and Nazyddah (2009), Mohit and Azim (2012), Mohit and Nazyddah (2011) are examples of these papers. Other studies, on the other hand, have applied the second form of evaluation to evaluate the effectiveness of social housing programs. Mustapha, Al-Abed and Wild's (1995) study is one of these noteworthy papers that used the summative form of evaluation. This paper did not just evaluate the effectiveness of low income public programs as was done in many other papers, but it created a model. This model has shown that to evaluate the overall social housing schemes, the adequacy approach (objective approach) as well as the client's satisfaction approach (subjective approach) should be used.

This current research used the summative form of policy evaluation, because it is evaluating the *effectiveness* of the social housing policy in Oman. In other words, there is a need to connect the objectives of the policy to the outcomes. Milligan et al. (2007) have stated that evaluation research means investigation of the objectives of policies and programs—if they were met or not. Randolph and Judd (2001) have added that evaluation allows assessment of whether the objectives of the project have or are being achieved. As the objective of the social housing policy in Oman is delivering housing that is both qualitatively adequate with numerically sufficient supply, this study attempts by using a summative form of evaluation to investigate the objectives and outcomes, and hence the effectiveness, of the policy. This study, by adopting this form, will add significantly to the literature as it will fill the knowledge gap about the Oman social housing policy's effectiveness. In fact, this study fills a gap identified by Alndabi (2010, p. 88) in his study that shows the need for more "studies involving low-income residences in order to develop housing patterns that meet needs of low-income population in the community".

3.6 Literature about Social Housing in Oman

Generally, studies that relate to social housing, its quality, and problems associated with such units are rare in Oman. This indicates that there is a deficiency in the literature dealing with the Omani context. As was shown before, there are only three papers that discuss some issues related to social housing. These studies were done by Rahman, Al-Harthy & Al-Arifi (2002), Alndabi (2010), and Alnasiri (2011). The three studies discussed different economic, social, and cultural issues connected with social housing in some areas in Oman.

Talking chronologically, the first study was done by Rahman, Al-Harthy, and Al-Arifi in 2002. This was a conference paper based on initial findings of a bigger research project (although the full study appears not to have been published). Rahman, Al-Harthy & Al-Arifi's (2002) study has focused on two main themes: a description of three programs offered by the social housing policy, and identification of the problems associated with the residential units provided by the Residential Units Program. Two social housing projects located in Al-Khoud (in Muscat Governorate) and Jibrin (in Al Dakhiliya Governorate) were examined. From the field study, observation, and interviews with project beneficiaries, the paper has identified some problems associated with social housing in Jibrin as shown in Table 3.2.

Table 3.2: Issues related to social housing in Jibrin in Al Dakhiliya Governorate (Rahman, Al-Harthy & Al-Arifi 2002)

Issues	Descriptions (N = 50)	Results of the study
Distance to work	Many people have to travel long distances to get to their work (consuming time, energy and putting pressure on the transport)	- Around 48 per cent of the respondents stated they have to travel 100-400 km per day to their work - 22 per cent have shown that the distance to their work is more than 400 km and they cannot travel every day
Services and infrastructures	Services and infrastructures such as roads were delivered some considerable time after the house allocation	- At the time of the study, the provided roads were not paved and did not have streetlights (the time of the field work was not mentioned)
Overcrowded	The numbers of provided rooms did not match with the Omani household size (the occupancy rate was not identified in that	- More rooms are needed as the average Omani household size is large (the average number of rooms was not identified in

Issues	Descriptions (N = 50)	Results of the study
	study)	the study)
Maintenance issues	Maintenance and management issues were absent	- Around 89 per cent of the respondents stated that the maintenance aspect is a major problem facing people living in social housing in Jibrin
Social facilities	No mosque, playground, and shops were provided	- The location of the project was 30 minutes away from the health care facility (the mode of transport used was not clear in the study)

Some issues such as the suitability of the social housing location in relation to commercial and service activities and the design of social housing units, were examined in Alndabi's (2010) paper. The satisfaction approach has been applied in this study. People living in social housing were surveyed to see if they are satisfied with these mentioned issues or services provided to their social dwelling. A'Seeb Wilayat located in the Muscat Governorate was used as a case study and the sample size was 145 units. Although the result of that study has stated that the majority of the respondents in general are satisfied with the units provided to them, there were some issues which did not satisfy many of them. They have pointed out that some issues and services connected to their social housing have not been implemented effectively. Good examples of these issues and services according to Alndabi's (2010) study are parking space, sewerage system, lighting, and the distance to work and shops. Generally, this study has recommended that the beneficiaries should participate in the exterior and interior designs of social housing. Applying this participation approach in social housing projects, according to Alndabi's (2010) study, will increase the satisfaction among Omani residences as their needs are more likely to be achieved.

The economic issues, in contrast, have been examined by Alnasiri (2011). In that paper, social housing was considered to be affordable because residents pay less than 30 per cent of their income to get access to housing. That is because the units provided by the Residential Units Program are

free of charge. In addition, the monthly repayment does not exceed 25 per cent of household income for the Housing Loans Program. No other issues such as the location, the number of bedrooms, and the services provided to these dwelling have been examined in Alnasiri's (2011) paper.

Along with these three studies, there is an article written by Alrahbi (2011) and published by the Oman daily newspaper. This article discussed some problems that face low income people living in social housing in Nizwa in Al Dakhiliya Governorate. These units were provided by the Residential Units Program as an integrated project called the Alrahba Project. The researcher visited and investigated the situation of this housing and did interviews with households. Generally, the unsuitability of the location appears to be a problem according to households living in these residential units (Alrahbi 2011). Many households have stated that the location of the houses is near the waterways and the roads were blocked many times by water coming from the mountains during the rain seasons. Although some people have confirmed that the new location of their housing is good for their children as it is near to schools, those residents have complained that the location of this social housing is not appropriate to their local jobs. Most of those people have sheep and goats and the old locations were suitable for their animals in finding grasses while this new location does not offer this opportunity (Alrahbi 2011). People living in Alrahba social housing have also complained about the construction of their houses. In less than one year after construction, most of these social housing units witnessed cracks on walls. The low quality of some fittings such as lighting and door locks have also been an issue (Alrahbi 2011).

In summary, by reviewing the literature it seems that there are some problems and issues facing people living in social housing in Oman. These issues can be classified as follows: 1) the space available in social housing (e.g. Alndabi 2010; Rahman, Al-Harthy & Al-Arifi 2002), 2) the services connected to the units (e.g. Alndabi 2010; Alrahbi 2011), 3) the services and facilities provided in the neighbourhood (e.g. Rahman, Al-Harthy & Al-Arifi 2002), 4) the location of this housing (e.g. Alndabi 2010; Alrahbi 2011; Rahman, Al-Harthy & Al-Arifi 2002), 5) and the construction quality and maintenance issues (e.g. Alrahbi 2011; Rahman, Al-Harthy & Al-Arifi 2002).

Moreover, it could be seen that most of these studies have applied the resident's satisfaction approach to obtain the results and findings. In other words, they have applied the subjective approach in the evaluation. The only paper which has adopted the objective approach, to evaluate only one component of housing adequacy, is Alnasiri's (2011) paper. In that study an international benchmark has been adopted in examining the affordability of the social housing. In brief, no study

till now has applied both approaches to evaluate the social housing in Oman. This current research, therefore, has adopted both the subjective and the objective approach to examine the adequacy of the social housing units in Oman. Doing such research will fill the gap in the literature and contribute to the research knowledge about the implementation of the social housing policy in such a developing country.

3.7 Summary

This chapter presented the current, related literature in the area of social housing generally and social housing in Oman specifically. The concepts of social housing, and adequate housing, supply and demand of housing were reviewed. In regard to the social housing concept, social housing is houses that are provided by the government for low income people to get access to home ownership. Moreover, the study ends up using the concepts of housing adequacy that have been applied by the UN-HABITAT. Adequate housing in this study is housing that performs adequately on seven components. The following chapter will present the indicators used in this study in measuring these housing adequacy components.

Chapter 4: Housing Adequacy Components and Indicators

4.1 Introduction

As the aim of this study is evaluating the adequacy of the housing there is a need to identify components and indicators used in this research to measure this adequacy. Chapter Three identifies seven fundamental components of housing adequacy and this chapter presents and describes indicators for each of these components.

4.2 The Study Indicators

Generally, this study relies on indicators and measures that were established in the UNHRP's fifth report and used by the UN-HABITAT in evaluating the adequacy of housing (see Figure 4.1). That is because these measures were constructed under the supervision of the UN-HABITAT which is recognised as an international agency that deals with human settlements in developing countries. Oman is a developing country and, thus, using the UN-HABITAT's measures as a basis to assess housing adequacy is logical. The UN-HABITAT indicators have been modified by the researcher so that they are appropriate for the specific conditions of social housing in Oman, to fit its culture, and its customs, as well as the local economic and political conditions. Parallel modifications would have to be made if the indicators were used in other countries, to fit their local conditions.

The UNHRP indicators are illustrated in Figure 4.1. There is a need to clarify the terminology used in this thesis at this stage, particularly in relation to the terms used by other sources. In the UN-HABITAT version, it should be noted that this figure (which illustrates what UN-HABITAT confusingly calls 'Indicators') actually includes a mix of what are called here housing adequacy sub-components and indicators. In general, the UN-HABITAT has used seven components of housing adequacy as was shown in Chapter Three such as 'legal security of tenure', 'services provided', 'habitability', and so on. To measure the 'habitability', the UN-HABITAT has applied two terms 'sufficient living area' and 'durability'. These two terms, as is shown in Figure 4.1 (see indicators five and six) are called indicators but, in practice, these are sub-components of housing adequacy. The indicators used for these two sub-components are 'persons per room' and 'percentage living in permanent structures in compliance with building codes and by-laws' respectively. As has already been established in earlier chapters of this thesis, housing adequacy was to be assessed using seven main 'components' of adequacy, this chapter discusses the derivation of the detailed indicators that were used to determine the level of adequacy of each sub-

component. In this sense, the word 'indicator' is being used in a far more specific sense than it is used by UN-HABITAT.

This chapter now describes and justifies each of the indicators that are used in this research to measure each of the seven components of housing adequacy.

Figure 4.1: 'Indicators' established by the UNHRP as joint activity with UN-HABITAT and OHCHR to assess housing adequacy in developing countries
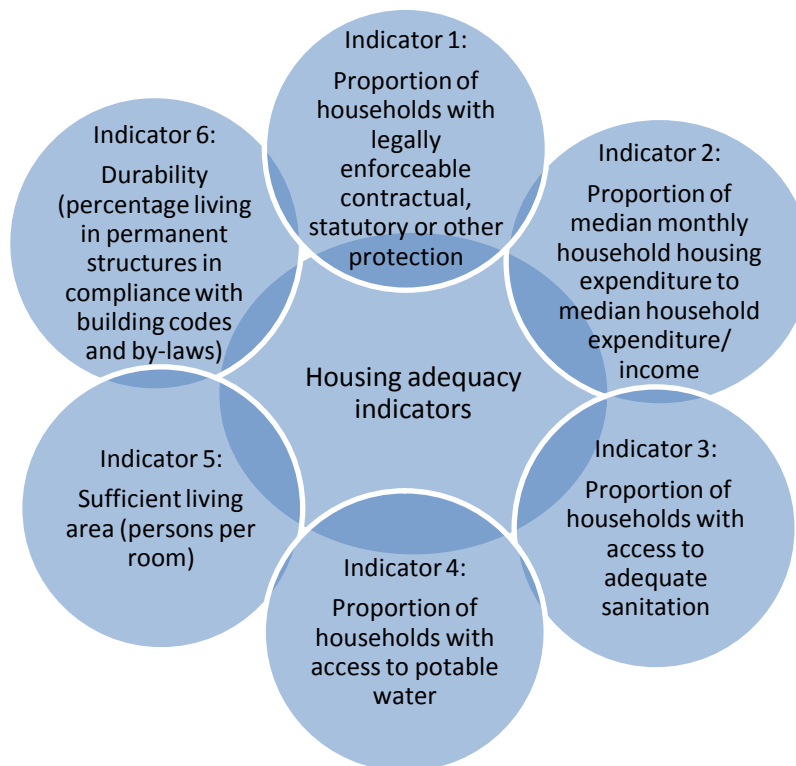
Source: UN-HABITAT & OHCHR (2003)

4.2.1 Legal Security of Tenure

The legal security of tenure component is not commonly used by researchers, though it is an important aspect of housing adequacy in particular locations. Thus, no detailed indicators have been established for assessing the degree of legal security of tenure. The only indicator in regard to this aspect is that established by the UNHRP to be applied at the national level: proportion of households with legally enforceable contractual, statutory or other tenure protection (see indicator 1 in Figure 4.1). Using this indicator directly here is not applicable as this study focuses on a specific type of housing tenure and not all housing, in Oman. Hence, there is a need to modify this indicator.

Generally, the applicant who fulfils the criteria of the social housing policy in Oman has the right to have a title deed of ownership issued by the Ministry of Housing with the same conditions (Ministry of Legal Affairs 2010). The title deed is a type of contract which is legally protected. To modify the above indicator to suit the Omani situation, the objective indicator which is used in this study is as follows: the household has a title deed to their housing. In other words, if the household has a title deed of home ownership that means the housing unit is adequate in regard to the 'legal security of tenure' component.

At first glance (as further explained in the body of the thesis) it seems that social housing in Oman is legally secured and protected and there is really no need to measure this component in assessing the adequacy of housing. There are restrictions on the ownership, however, as households have the right to sell or lease their housing only after being given the title deed and this is given only after ten years. Within that ten year period, residents cannot sell or lease the houses that are provided through certain social housing programs. In other words, households living in social housing in Oman have to wait ten years to have the full 'ownership' of their housing. That provides a limitation on the usual concept of security of tenure. That is why this project recognises the provision of legal tenure but also assesses whether households living in social housing in Oman are satisfied with this component.

4.2.2 Affordability

Affordability is the second component of housing adequacy which was used in this research. The affordability concept is ambiguous because it connects with many issues, not just the cost of the house and the household's income but also the location, the travel cost, as well as the accessibility of the house (Disney 2007). As most of these issues in this study were evaluated separately in different components of housing adequacy, there was no need to select indicators that address all of them within the 'affordability' component. In addition, this study applied the definition of housing affordability that is used by the UN-HABITAT, which is "the average cost of housing per month should, in most cases, consume no more than approximately one-third of total monthly income" of the household (UNHRP 2003, p. 13). Thus, the affordability for the purpose of this research is assessed from consideration of the cost or the rent of the house in relation to income.

'Proportion of median monthly household housing payment to median household monthly income' is an indicator used by the UN-HABITAT to evaluate the adequacy of housing in regard to the 'affordability' component at a national level. It seems that the UN-HABITAT has a definition of

affordable housing that includes a specific benchmark of 30 per cent of income spent on housing costs but there is no specific justification for this figure in their discussion. Moreover, this indicator used the ratio of the median national monthly household payment and the median national household monthly income and that is not appropriate for this study because it aims to assess the affordability of each individual house (not all housing in Oman) and, hence, using the national ratio rather than the individual ratio was not suitable.

Thus, the indicator used was the household monthly housing payment as a proportion of the household monthly income. A benchmark of 30 per cent of the household income was used to determine the affordability of the social housing in Oman. The rationale for using this specific standard is that (a) this benchmark is used in the UN-HABITAT's definition of affordable housing: and (b) 30 per cent of the household income is a common affordability benchmark used by many researchers around the world (such as Canadian Housing Observer 2009; Westfall 2010; Disney 2007). Therefore, in this study the social housing units in Oman were considered as adequate if the households pay 30 per cent of their income or less to obtain these housing units.

Here, it is important to mention that the houses that are offered by the Residential Units Program in Oman are free of charge. In other words, they are more than affordable and thus there is no need specifically to measure this component of housing adequacy for the Residential Units Program. Despite this fact, while the cost of the social housing is not an issue or problem that faces social housing in Oman (Alnasiri 2011; Rahman, Al-Harthy & Al-Arifi 2002), this study assessed affordability as a component of adequacy. Including this indicator allowed a comparison with other studies that examined the affordability of the social housing in Oman (e.g. Alnasiri 2011). In addition, people living in social housing in Oman have to pay for furniture, maintenance, and any changes such as renovations or extensions to the housing units. Although housing is free there are other costs that need to be paid by low income residents. Therefore, this issue was also examined by identifying the householders' perceptions of housing affordability. In this research, people living in social housing were asked if they are satisfied with the cost of the housing. Examining the affordability objectively (the 30 per cent benchmark) and subjectively (people's opinion) helped to measure the full implications of this component.

4.2.3 The Services Provided

The services provided to housing are the third component of housing adequacy. Many indicators have been used by researchers to evaluate this aspect. The indicators used represent the availability

of different services. The connection of the house to potable water supply, sanitation facilities, power supply system, road network, and refuse disposal are the most commonly used sub-components in the literature (e.g. Djebarni & Al-Abed 1998; Mukhtar 1997; Mustapha, Al-Abed & Wild 1995; Ibem & Amole 2011; Ibem, Aduwo & Uwakonye 2012). In Oman, most of these services are provided during the construction of the social housing. A senior policy maker interviewed for this research said that currently, most social housing units in Oman are connected with sanitation facilities, electricity, and garbage disposal. Hence, these three services are not of primary concern for the assessment of social housing adequacy in Oman (Rahman, Al-Harthy & Al-Arifi 2002) although there is still the need to assess the veracity of the Ministry's claims as well as the householders' perceptions of the quality of these facilities. For example, as discussed below, although sanitation facilities are provided there may be some difficulties over the quality of the service. On the other hand, there are some services which are not connected to many social housing units in Oman (Rahman, Al-Harthy & Al-Arifi 2002) and, therefore, there is a need to examine those more fully. An example is the provision of drinkable water.

4.2.3.1 Drinkable Water

Oman is a dry country and the availability of water is a significant issue for many residents. Although drinkable water is a basic need it is one of the services that is not available to all social housing in Oman. According to the National Centre for Statistics and Information (NCSI), there are five scenarios in which housing in Oman can get access to water depending on the location of the houses and the availability of the water (NCSI 2012a). The first scenario is that housing is connected to a water network. This system was implemented only after 1970, but not for all houses. These homes receive the water through pipelines (NCSI 2012a) that deliver the water either directly from major water desalination stations or from major water tanks. The water desalination stations desalinate sea water or ground water. The major water tanks, on the other hand, receive the water from the major water desalination stations and then the water is distributed to houses through pipelines. These tanks are called cumulative and distributional tanks. The houses that are connected with pipelines are normally recognised as units that have access to the water network (NCSI 2012a). This water is drinkable so housing that connects to this system does not face a problem in getting access to drinkable water. Although it is a desirable system many areas in Oman have not yet been connected to this system.

The second scenario of getting access to drinkable water in Oman is water collection points. These points could be water tank filling stations or reservoirs. The government has responsibility for providing water to these stations and reservoirs, mostly by connecting them to the ground water supplies or to the water desalination stations. In this approach, there are no pipelines that connect the housing units with the water collection points. The water is delivered to houses by water tanker trucks and the water supply is the responsibility of households not the government (NCSI 2012a).

Falaj's water is another source of water in Oman. A 'falaj' is a small canal in which surface water flows from the mountains to settlements. It is like a very small river and some people use this water source for domestic use as well as for drinking. However, this water is seasonal and does not flow all the time. The fourth scenario is having water from wells. These wells could be inside or outside the houses in which the ground water is delivered by using different tools such as pipes. Buying bottled water is the fifth scenario for having water in Oman. Some people are using this type of water when they do not have any access to the above four drinkable water sources while others prefer to use bottled water for safety and health reasons.

Some of the social housing units in Oman are connected to a water network or water collection points while others are not. The official statistics here are not available. There is a need to examine the availability of drinkable water as it is an important and internationally recognised sub-component of housing adequacy (UN-HABITAT & OHCHR 2003). Although the water network is provided by the government as drinkable water not all households living in social housing in Oman are drinking it. The water does not go directly to the outlets that are constructed inside the house but it is collected in a tank in the roof of each house. Then the water flows from the tank through the pipes inside the house. This can create many problems. Sometimes, the quality of the tanks and pipelines is not good enough to keep the water clean for drinking. Tanks need to be cleaned over time and, usually, people living in social housing face problems in doing so. Thus, some people use electronic devices inside the kitchen to clean the water that comes from the tank. Some residents buy bottled water to drink. However, those who do not have enough financial resources to purchase electronic devices or bottled water, use the tank water to drink. Thus, the ready availability of potable water is a good indicator to evaluate the adequacy of the social housing in Oman. This indicator was also examined subjectively by gauging peoples' satisfaction with the quality of this provision. Many other scholars have also used this indicator in assessing housing adequacy (e.g. Ibem & Amole 2011; Ibem, Aduwo & Uwakonye 2012; Mukhtar 1997).

4.2.3.2 Sanitation

The connecting of the house to sanitation facilities is another sub-component which is commonly used to evaluate the adequacy of housing. The UN-HBITAT has used the proportion of households with access to adequate sanitation as an important indicator for adequacy assessment. In Oman, social housing units do not face difficulties regarding this issue. According to the Ministry of Housing, all social housing in Oman is provided with inside toilets (Ministry of Housing 2011). In addition, the culture in Oman requires a separate toilet for visitors especially if they are men. Hence, the minimum number of toilets that are provided in each social housing unit in Oman is two although some of them have one bedroom only.

Despite the availability of these sanitation facilities within the social housing in Oman, these facilities are sometimes not connected to a sewerage network system. A septic tank may be provided for a house to collect the sewage waste. These tanks are built under the ground. Households have the responsibility of taking that waste by using sewage trucks. These trucks draw the water and waste from the septic tanks and dispose of it in specified places. Sometimes the septic tank system does not work well especially if the tanks become full. In addition, people who live in social housing are low income people and this system may not fit their economic situation as they have to pay money to dispose of the sewage. Therefore, the above indicator used by the UN-HABITAT (see indicator two Figure 4.1) was modified to fit the Omani situation. As some housing units in Oman are already connected with a sewerage network, using the indicator of 'housing connected to sewerage network system' was more suitable and applicable to Oman. Thus, housing having access to a sewerage network was used as an objective indicator of housing adequacy in this research project. As a subjective indicator, households were asked if this service is adequate or not. Djebarni and Al-Abed (1998) and Mustapha, Al-Abed and Wild (1995) and others have applied this indicator to assess the adequacy of the public housing in the Arab Gulf States.

4.2.3.3 Paved Roads

The connection of the social housing units to paved roads is also used in this research as an indicator that addresses the 'services provided' component. Despite the fact that there is no international agreement on the type or the quality of relevant roads, some researchers have used the availability of a paved road to assess the adequacy of service provision and hence the adequacy of the housing. Good examples of these studies are Muoghalu (1991), Ibem and Amole (2011), and Ibem, Aduwo and Uwakonye (2012). This indicator has also been suggested by the UNHRP in

2003 as a possible additional measure to evaluate the 'services provided' component of housing adequacy. Moreover, Rahman, Al-Harthy and Al-Arifi (2002) have found that having paved roads is an issue facing many households living in social housing units in Oman. Therefore, housing having access to paved roads is a suitable indicator. So, in the objective approach the connection of the house to a paved road was applied to assess the adequacy of this service, while for the subjective evaluation people's opinion about this service was also used as an indicator.

4.2.3.4 Other Services

A senior policy maker interviewed for this study said that other services, such as waste disposal facilities and electricity are provided for all social housing in Oman. Hence, no indicators were used to examine these services. Many other indicators could also be used to assess the remaining housing adequacy component such as accessibility, habitability, location, and cultural adequacy. Applying too many indicators in the 'services provided' component may unduly weight it and make this aspect of housing appear more important than others (UN-HABITAT & OHCHR 2003; UNHRP 2003). All the seven components of housing adequacy need to be examined and their weighting should be equal unless there are cogent reasons for weighting them. As will be clear from earlier chapters and sections there is considerable debate about ways of assessing housing adequacy; and UN-HABITAT takes an implied stance of treating each of the components equally. In order to avoid the difficulties of finding a widely agreed system of weighting, and in order to further parallel the UN-HABITAT measures, the stance of equally weighting the adequacy indicators is adopted in this study.

In sum, to address the 'services provided' component, this study used three indicators: that the house is connected with piped drinkable water, a network sewerage system, and that the house is connected to paved roads. To support using three different indicators in measuring one component, the UN-HABITAT and the OHCHR have shown that "in many cases it is desirable to have more than one indicator used to measure any given element, especially if that element is particularly complex and multi-faceted, as is the case with the concept of housing adequacy" (UNHRP 2003, p. 9).

4.2.4 Habitability

The 'habitability' component, according to the UN-HABITAT, means sufficient area for living as well as a durable structure of the house (UN-HABITAT & OHCHR 2003). In fact, these two sub-

components have often been applied separately in the literature in evaluating adequacy. Thus, there is a need to select indicators for this study that address both sub-components. Three indicators were chosen in this research project to measure the 'habitability' component (see Table 4.1).

4.2.4.1 Durability of Housing Structure

Regarding the durability of the housing structure, 'housing that is built in compliance with building codes' was used as the indicator in this study. This indicator is also used by the UN-HABITAT (see indicator 5, Figure 4.1). All social housing units in Oman have been built under the supervision of consultants who make sure that housing units are built in compliance with building codes. At first glance, it seems that social housing in Oman is adequate regarding the 'durability of the housing structure' but the situation is complex. For example, Alrahbi (2011) has shown that most social housing in Alrahba (Al Dakhiliya Governorate) had cracks in the walls (see Figure 4.2). In addition, Rahman, Al-Harthy and Al-Arifi (2002) found that around 89 per cent of households living in social housing in Jibrin (Al Dakhiliya Governorate) considered adequate maintenance as a major problem facing them in their units. To investigate this issue in more detail the 'housing that is built in compliance with building codes' was used as the indicator in this research to assess this sub-component.

Figure 4.2: Cracks on social housing units' walls

Source: Alrahbi 2011

4.2.4.2 Sufficient Living Area

The occupancy rate, where the maximum number of people in each bedroom is two, has been used by many scholars to address the sufficiency of the house's area (e.g. CMHC 2010; Mukhtar 1997; Muoghalu 1991; Westfall 2010), although the UN-HABITAT has used the criterion of two people in each room, not just the bedrooms. The UN-HABITAT has a specific definition for a room:

> a room may be defined as a space in a housing unit or other living quarters enclosed by walls reaching from the floor to the ceiling or roof covering, or at least to a height of 2 meters, of a size large enough to hold a bed for an adult, that is, at least 4 square meters. Rooms, therefore, may include bedrooms, dining rooms, living rooms, studies, habitable attics, servants' rooms, kitchens, rooms used for professional or business purposes and other separate spaces used or intended for dwelling purposes, so long as they meet the criteria of walls and floor space. Passageways, verandas, lobbies, bathrooms and toilet rooms are not expected to be counted as rooms, even if they meet the criteria (UNHRP 2003, p. 63).

The UN-HABITAT used the above criterion for living space to reflect the circumstances of many slum dwellings. Applying the indicator of two persons in a room rather than in a bedroom to Oman is not logical as there are no slums in Oman. In addition, the measure is being applied in this study specifically to government-provided social housing. Therefore, this study, measures the adequacy of the social housing space by using the indicator of no more than two persons per bedroom.

4.2.4.3 Maintenance

The house maintenance issues, on the other hand, have not been used by the UN-HABITAT as an indicator to address the 'habitability component'. Yet this indicator has widely been applied among researchers as an important aspect of housing adequacy (e.g. Ibem and Amole 2011; Ibem, Aduwo & Uwakonye 2012; Westfall 2010). The national housing agency in Canada considers the housing is structurally adequate if the household stated that their unit does not need any major maintenance or repairs. Mukhtar (1997) has also shown that the maintenance is an important attribute of housing as it determines the expected life of dwellings. He has stated that, "in the study projects, many difficulties and problems were noticed and remarked upon. When the units were constructed they were bright and clean and the area was tidy, but after several years the situation was changed. This is due to the lack of maintenance" (Mukhtar 1997, p. 242). Moreover, "the high cost of maintenance

on existing older stock may be a major factor contributing to housing adequacy" (Morton, Allen & Li 2004, p. 476). From the above discussion, the need for major housing repair or maintenance was used in this research project as an indicator to assess the maintenance sub-component, the habitability, and hence the adequacy of such housing.

4.2.5 Accessibility

Whether or not there was national legislation ensuring accessibility for persons with disabilities to multi-unit residential buildings was established by the UNHRP and used as an indicator in this research (UNHRP 2003), although this was modified for local conditions. This indicator addresses the accessibility component of housing adequacy. According to the UN-HABITAT, "adequate housing must be accessible, or readily attainable, to those entitled to it" (UN-HABITAT & OHCHR 2003, p. 13). That means vulnerable groups such as the physically disabled should be provided with a suitable design that allows them to live comfortably in the house. Having stairs or edges at the entrance of the house are examples of housing design that impede wheelchair-bound or other mobility-impaired people from accessing a house easily (Church & Marston 2003). Although there are many different types of disabilities, such as persons with persistent medical problems and mentally ill persons, this study focused on the accessibility for the physically disabled and especially for people who use a wheelchair to access their housing. That is because the accessibility of wheelchair-bound people to the house is a classic measure that is used in many countries to evaluate the accessibility of buildings (Church & Marston 2003). Wheelchair accessible units, for the Canadian Housing Corporation, have been defined as units that "are equipped with exterior wheelchair ramps" (Hanson, Lloyd & Lorimer 2004, p. 28). Many other agencies around the world use wheelchair ramps as a main aspect of units in assessing the accessibility. This study used 'the entrance of the house provided with wheelchair ramp' as an indicator to evaluate the accessibility of the social housing units in Oman.

4.2.6 Location

The location of the house is the sixth component of housing adequacy. In the fifth report by the UNHRP during the establishment of the housing adequacy standards, different indicators were suggested to address this component (UNHRP 2003). The number of households with access to public transportation is one of those indicators. This indicator is not applicable to Oman as there is no active public transport service available. Most people use their private cars for transportation. Therefore, this indicator was not used in this research. The second indicator which was suggested in

the UNHRP report was the average distance from home to the nearest school. This is also not an issue in Oman because a universal school bus system is implemented. In that system, students use free buses to go to school. Thus, the location of the house in relation to the school is not an issue in Oman, so using this indicator is not reasonable. In regards to the distance to the work indicator, this was not used in this study. That is because most of the people in social housing are not working.

4.2.6.1 Distance to Health Facility

The average distance from the house to the nearest health facility was used in this research to evaluate the locational adequacy of the social housing units in Oman. This indicator was suggested by the UNHRP to assess the adequacy of the location, but no standards are promoted. Other researchers have also applied this indicator without a measurable distance (e.g. Mukhtar 1997; Ibem & Amole 2011; Ibem, Aduwo & Uwakonye 2012). Muoghalu (1991), for instance, has used the indicator of the availability of a health centre in the neighbourhood. This study used, on the other hand, 'the house is located within two kilometres of the nearest hospital or health centre' as a standard. That it is because this standard is used by some researchers as a guide to accessible health care facilities (e.g. Chowa, Masa, & Osei-Akoto 2012).

4.2.6.2 Distance to Mosque

Location in relation to culturally significant services is important in assessing housing adequacy. Almost all Omani people are Muslim. Muslims should pray five times a day and it is preferred to pray in a mosque. Implementing the indicator of 'average distance from the house to the nearest mosque' is an important indicator although it is not widely used in the literature. In addition, Oman is a very hot country and walking during the day is difficult in summer time. Religion, as well as the weather conditions of Oman, strengthen the importance of housing location in relation to mosques as an adequacy indicator. Some researchers in other Arab Gulf States have used the distance between the nearest place of worship and the house as an indicator of housing adequacy (e.g. Mukhtar 1997; Ibem & Amole 2011; Ibem, Aduwo & Uwakonye 2012). In these studies the 'satisfaction' approach has been applied to evaluate the adequacy of the location. Although households gave their opinion and level of satisfaction regarding the location, no specific objective distance has been applied to evaluate this adequacy. As this study aims to measure the adequacy objectively, there is a need to set an indicator that is measurable. Logically, the location of the mosque should be close enough to allow people to walk five times a day. As 400 metres distance or five minutes walking is an accepted standard for walking to relevant services in many countries

(Azmi et al. 2013; Vestergaard et al. 2009, Urbis 2011), this study used this standard to assess the location adequacy of the houses in relation to the nearest mosque.

4.2.7 Cultural Adequacy

Cultural adequacy is the last component or aspect of housing adequacy which was measured in this research. Cultural adequacy means housing units are constructed and designed in a way that reflects the cultural identity of the residents (UNHRP 2003). According to the UNHRP (2003, p. 32), "cultural adequacy may be the most difficult component of housing adequacy to measure using quantitative methodologies". This is because this aspect measures people's feelings about the place which is difficult to quantify. That is why this component of housing adequacy has not been applied by many scholars in assessing the adequacy of housing units. Nevertheless, the UNHRP suggests that the involvement of the household in the housing policies may be a good surrogate measure for the cultural identity indicator. Household involvement may, in one way or another, let the resident express their values and attitudes and hence their cultural identity may be addressed in the housing. The UNHRP has suggested "the presence of national legislation ensuring local community involvement in the development of housing policies, especially as related to minority racial and ethnic groups, including indigenous groups" as an indicator that addresses the 'cultural adequacy' component.

Here it is worth saying that social housing units in Oman are provided only for Omani citizens, a community that is relatively ethnically homogeneous. The UNHRP indicator was modified to assess whether the Omani household was involved in the development of social housing policy. In practice, as the involvement of each household in the housing policies is complicated and difficult to assess, this research modified this indicator. Cultural adequacy was assessed as 'whether the household was offered a choice of housing to live in'. Offering many housing choices to households and letting them choose one of them, logically, offers them a chance to select a house that suits the values and culture of the resident, even though they were not involved in the development of the housing policy.

4.3 Indicators of Housing Adequacy

A summary of the indicators used in this research to assess the adequacy of social housing in Oman is given in Table 4.1 and Figure 4.3.

Table 4.1: The selected housing adequacy components and indicators

Housing adequacy components	Selected indicators	Indicator as applied to social housing in Oman
Legal security of tenure	- Households with legally enforceable contractual, statutory or other protection	1- Household has a title deed to housing
Affordability	- Household monthly housing payment / household monthly income	2- Household pays no more than 30 per cent of their income to get access to housing
The services provided	- Housing provided with potable water - Housing having access to sanitation facilities - Housing having access to paved roads	3- Housing is connected with piped drinkable water 4- Housing is connected to a sewerage network system 5- Housing is connected with paved roads
Habitability	- Sufficient living area - Durability of housing structure - Maintenance	6- Housing with no more than two persons per bedroom 7- Housing was built in compliance with building codes 8- Housing does not require major maintenance or repairs
Accessibility	- Housing design is accessible for disabled people	9- Housing entrance provided with wheelchair ramp

Housing adequacy components	Selected indicators	Indicator as applied to social housing in Oman
Location	- Average distance from home to nearest hospital or health centre	10- House is located within two kilometres of the nearest hospital or health centre
	- Average distance from home to nearest mosque	11- House is located within 400 metres distance or five minute walk to the nearest mosque
Cultural adequacy	- Household involvement in development of housing policies	12- Household offered a choice of housing to live in

Figure 4.3: The selected housing adequacy components and indicators

Housing adequacy						
Legal security of tenure	Affordability	The services provided	Habitability	Accessibility	Location	Cultural adequacy
1- Household has a title deed to housing	2- Household pays no more than 30% of their income to get access to housing	3- Housing is connected with piped drinkable water	6- Housing with no more than 2 persons per bedroom	9- Housing entrance provided with wheelchair ramp	10- House is located within 2 kilometres or less of the nearest hospital or health centre	12- Household offered a choice of housing to live in
		4- Housing is connected to a sewerage network system	7- Housing was built in compliance with building codes		11- House is located within 400 metres distance or 5-minute walk to the nearest mosque	
		5- Housing is connected with paved roads	8- Housing does not require major maintenance or repairs			

4.4 Summary

In summary, the seven components of housing adequacy were measured by using twelve indicators. These indicators were measured, as far as possible, both objectively and subjectively. Table 4.1 shows how the indicators were measured. Most of these indicators were established by the UNHRP and UN-HABITAT. Some other indicators which have been used in the literature were also selected and applied in this research. As Oman has its own political, social, economic, and cultural context, most of these indicators have been modified to be applicable to Oman and particularly to social housing in Oman. Although not all the indicators established by the international agencies and in

the research literature were used, the selected indicators include those most widely used to measure housing adequacy.

Chapter 5: Data and Methodology

5.1 Introduction

This thesis utilises a single nested case study research approach. Yin (2014) outlines a number of advantages of a single case study approach including the comprehensive understanding of a case in depth. Where there has been no previous evaluation of the case, such as the Oman social housing policy, a single case study approach is able to fill a major knowledge gap. In this research, multiple methods are used to triangulate the single case (Woodside 2010). Embedded cases are an example of this triangulation where a selection of different locations within Oman were chosen for in-depth review. These embedded cases serve to reinforce the investigation of social housing in Oman.

This chapter explains the connection between the research objectives, data sources, and data analysis in six main parts. The first part shows how the three social housing programs offered by the social housing policy in Oman were selected as a basis to explore the two aspects of evaluation used in the research: housing adequacy and housing supply. Then, the case study area of this research is illustrated in the second part while the sample size and selection are discussed in the third part. The fourth part focuses on data sources by which the primary data as well as the secondary data for this study are described. This part also shows the general structure of the questionnaires and interviews. The fifth part discusses how the data were analysed to answer the research questions. A final section briefly mentions some of the limitations that faced the research and how they were addressed.

5.2 Connecting the Social Housing Programs with the Aims of the Study

The aim of this study is to evaluate the effectiveness of Oman's social housing policy by assessing the perceived individual units of social housing as well as the sufficient number of the overall supply. In fact, the three social housing programs within the overall social housing policy have quite different approaches and outcomes. Assessing the adequacy of the social housing units provided by the social housing policy is the first aim of this study. Evaluating the adequacy, in this research means evaluating the seven components of adequacy which were derived in Chapter Four (legal security of tenure, affordability, the services provided, habitability, accessibility, location, and cultural adequacy), using the 12 indicators (see Table 4.1). In the Housing Assistance Program and Housing Loans Program, housing units can be built by the applicants themselves or by the Ministry of Housing. The most important thing here is that applicants have the freedom to choose

the location, the number of rooms, and the design of the house as long as the cost of these units does not exceed the limits determined by the Ministry of Housing as assistance or loan (Ministry of Housing 2011). They can also add their own money to make such changes. Therefore, evaluating the adequacy of these houses does not reflect the outcomes of the social housing policy.

In contrast, the social housing units delivered through the Residential Units Program can only be built through the Ministry of Housing. The Ministry, here, determines the size and number of rooms, chooses the location, chooses the builder, and distributes the final housing units to households. Thus, this study chooses only the social housing units that are offered through the Residential Units Program and examines their adequacy, as this program most clearly involves the specific implementation of the government's social housing policy.

Practically, to be able to examine whether the supply of current and future housing is sufficient or not (the second aspect of the evaluation), there is a need to investigate the demand and the supply for each program. Social housing units offered by the Residential Units Program are provided when His Majesty gives orders to build a certain number of these houses in a particular city. There is no specific application form which households can fill in to get access to these units. There is also no waiting list. When there is such an order from His Majesty, the priority of having these housing units will be allocated to those households which have applied for the Housing Assistance Program. Thus, the demand can be assessed using the Housing Assistance Program waiting list. This overlap in demand between the two programs is explained in more detail in Chapter Seven.

On the other hand, applicants can apply to get access to the Housing Assistance Program and the Housing Loans Program by filling in application forms and waiting for their turn. Hence, the demand for these two programs can be evaluated by examining the waiting lists. The supply is also clear as the Ministry of Housing has the responsibility for setting plans to benefit households and provide an adequate supply of housing assistance or housing loans. For this reason, this research focused on the three programs in evaluating the effective supply and hence the core government provision aspects of the social housing policy in Oman.

In summary, the housing provided by the Residential Units Program is the subject of this research to evaluate the adequacy of the housing provided as social housing in Oman. On the other hand, all three programs were used to assess the supply aspect of the evaluation which represents the second research question of this study (see Figure 5.1).

Figure 5.1: Connecting the social housing programs with the aims of this study
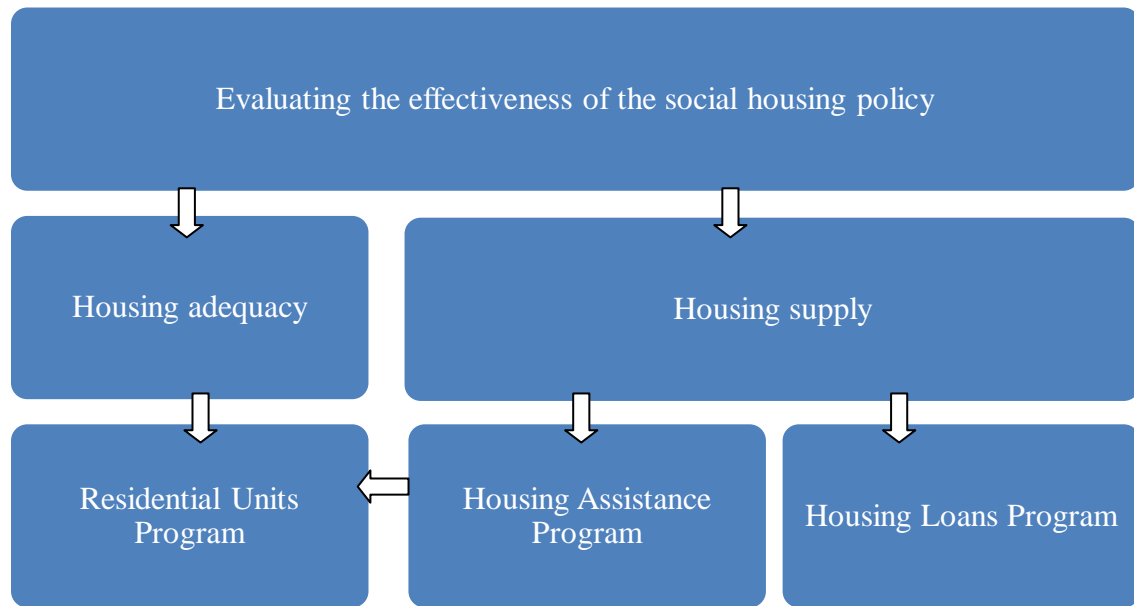
5.3 The Case Study Areas

There is no available data that shows the number of the social housing units offered through the Residential Units Program in each wilayat (city) in the Sultanate before 2000. Thus, to do the adequacy evaluation aspect, this study focuses on the housing units that have been offered from 2001 till 2010, as the relevant data is available. No housing units offered after 2010 were evaluated, in regard to adequacy, in this project. That is because this research started in 2012 and at that time the available published data were only till 2010. Some data became available after 2010. That data is used to inform the housing supply analysis.

The total number of the social housing units offered by the Residential Units Program from 2001 till 2010 in Oman is 5,471 (Planning and Statistics Department 2011b). Conducting 5,471 questionnaires in all these wilayats is difficult in terms of time as well as other resources. Thus, this research focused only on the Governorate's centres, which are wilayats, and used a representative sample of dwellings from the total. The reason for choosing the Governorate's centres relies on the fact that districts located in one Governorate mostly share similar characteristics such as the geographical location, climate, culture, and values (Ministry of Information 2013). Moreover, Oman is a centralised monarchy so that these social housing units are offered by one agency (Ministry of Housing) as projects in all the various Governorates. Therefore, the general characteristics of these projects such as the design, building materials, land, and construction cost are similar.

5.3.1 Case Study Selection Process

Table 5.1 shows the number of the social housing units that were built in the Governorate's centres in the period 2001 to 2010. It is clear that no residential units were built in Muscat, Sohar, and Salalah between 2001 and 2010. Hence, these Governorate's centres were not included in this research. Moreover, only 20 social housing units were built in Ibra, the capital of Ash Sharqiyah North Governorate. This number represents only 1.5 per cent of the social housing that was built in this period through the Residential Units Program. The cost of administering only 20 questionnaires for such a small number of units is high, so the capital of Ash Sharqiyah North Governorate was excluded from this study.

Table 5.1: The total number of the social housing units built and offered in the Governorate's centres from 2001 to 2010 through the Residential Units Program

The Governorate's centre	The number of social housing units in the eleven Governorate's centres
Muscat	0
Sohar	0
Al Rostaq	118
Nizwa	181
Ibra	20
Sur	391
Ibri	232
Al Buraimi	175
Khasab	54
Haima	196
Salalah	0
Total	1367

Source: Planning and Statistics Department 2011b

The capitals of Musandam (Wilayat Khasab) and Al Wusta Governorates (Wilayat Haima) were also excluded from this research for other reasons. Wilayat Khasab is located in the extreme north of Oman around 500 km from Muscat. It requires passing through the United Arab Emirates and it takes around six hours driving from Muscat by car. In addition, the social housing units that are

offered in this wilayat represent only four per cent of the total units distributed in the eleven capitals from 2001 to 2010. Wilayat Haima, on the other hand, was not included in the study for security reasons. It is located in the desert far from any other Governorates (Ministry of Information 2013). Getting to this wilayat is dangerous as there are only two roads connecting Al Wusta Governorate with the other governorates in the Sultanate. The quality of these roads is poor and driving in that area is insecure especially at night as there is no lighting.

Thus, the 'population' of this study was composed of 1,097 houses offered by the Residential Units Program in the period 2001 to 2010 in Governorate centres of Al Rostaq, Nizwa, Sur, Ibri, and Al Buraimi. Figure 5.2 shows the location of these wilayats.

Figure 5.2: The five case study sites: Al Rostaq, Nizwa, Sur, Ibri, and Al Buraimi
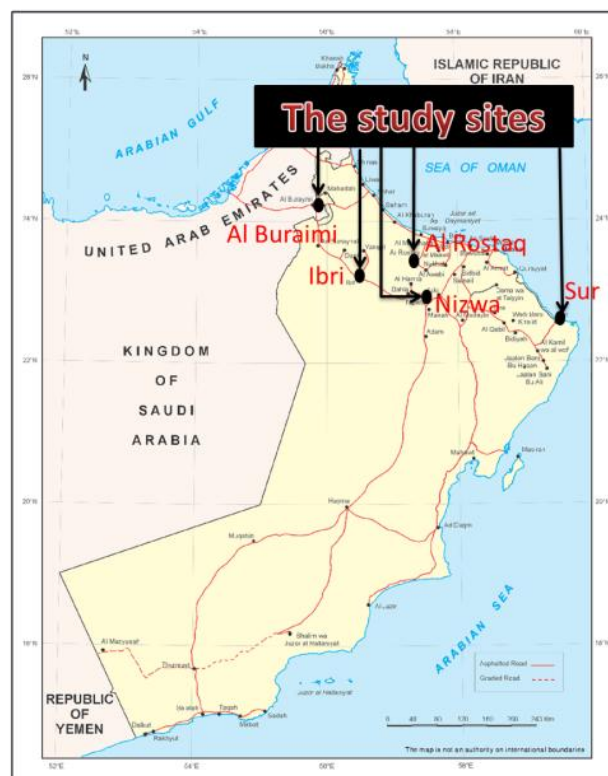
Source: Modified from Ministry of Information 2013

5.4 The Sample Size of the Housing Units

Conducting 1,097 questionnaire surveys was beyond the time and resources available. Thus, sampling was used to collect data. To calculate the sample size, this study relied on a formula provided by the MaCorr Research web page (MaCorr Research 2013). First the researcher determined the confidence level and the confidence interval for the sample. The confidence level

represents how often the true percentage of the sample population would pick an answer that lies within the confidence interval (MaCorr Research 2013). For instance, a 90 per cent confidence level means that if the survey has been conducted 100 times, 90 times out of 100 the survey would have yielded the same result. Although using the confidence level of 99 per cent (probability value or p value of 0.01) is more accurate, that increases the budget required. Tranter (2009, p. 130) has stated that "most social science research uses a confidence level of 95 per cent". Hence, this study applied the confidence level of 95 per cent (probability value or p value of 0.05) and confidence interval of five per cent. Using these two measurements with the total population size of 1,097, the sample size that resulted from the sample size formula was 285. This sample size is regarded as adequate for inferences to be made about the entire population.

As the numbers of the housing units vary in the five wilayats (cities), a sample was chosen proportionally to the number of units in each locality. This method is called proportionate sampling. This method was chosen because the population is composed of five different subgroups and the total number of housing units in each subgroup is different. Table 5.2 shows the number of selected social housing units for the questionnaires. The actual units surveyed were chosen randomly from the total population of social housing in each area. This probability sampling method gave each house an equal chance of being selected and, thus, allows the researcher to generalise the result to the entire population. Table 5.2 shows the distribution of the surveyed houses. Although the total required number of questionnaires was 285, the actual completed number of questionnaires was 330.

Only one area did not achieve the target number of completed questionnaires. The other four areas exceeded the target number. Al Buraimi was the only city in which the number of completed questionnaires was fewer than required. That was because finding the people in their social housing units in that city was difficult at the time of the research field work. Most people who are living in these houses are called Bedouin and they normally prefer to be in the desert at that time with their camels. This limitation was covered by increasing the distributed number of the questionnaires in the other four cities. This change was thought to have only minimal impact on the overall results.

Table 5.2: Number of the social housing units for questionnaires

The Government's centre	Units delivered from 2001 to 2010*	Percentage	The required sample (target) (questionnaires)	The completed questionnaires
Al Rostaq	118	11	30	60
Nizwa	181	16	46	56
Sur	391	36	103	103
Ibri	232	21	60	72
Al Buraimi	175	16	46	39
Total	1097	100	285	330

*

5.5 Data Sources

This study used a variety of methods in data collection. Methods included face to face questionnaires with household heads living in social housing units, face to face and phone interviews with policy makers, and site visits for the observation and documentation of the quality of houses. In addition to these primary data collection methods, the research also employed secondary data collection such as content analysis of reports and documents, as well as secondary statistical data, especially those data published by the National Canter for Statistics and Information in regard to Oman population projections.

The research involved both qualitative and quantitative approaches to collecting data. This mixed-methods approach has been used in other studies that aim to evaluate policies and programs (Hanson, Lloyd & Lorimer 2004). A number of researchers have stated that applying both quantitative and qualitative approaches is a suitable way to achieve good results in such evaluations (Milligan et al. 2007; Francisco, Butterfoss & Capwell 2001). For example, Milligan et al. (2007, p. 9) have stated that "in evaluation design, using both quantitative and qualitative data and combining different research methods – referred to as triangulation – forms a key element of the validation methodology for program evaluations".

5.5.1 Questionnaires with Heads of Households

5.5.1.1 Questionnaire Purpose and Design

The questionnaire was designed to encompass four main parts (see Appendix 8). Data regarding housing characteristics were collected in the first part of the questionnaire. Number of bedrooms, the source of water supply, distance to the nearest mosque and nearest health centre, and cost of the house are examples of these data. Indeed, this section encompassed the 12 indicators of housing adequacy which were to be evaluated objectively. The answers were coded as (0) inadequate or (1) adequate, depending on the indicators used in this research (see Table 4.1). Some of these variables have been used in other studies such as that of Ibem, Aduwo & Uwakonye (2012). Using this section in the questionnaire helped in answering the research sub-question; what are the characteristics of the housing delivered through the social housing policy? Having the data from this section of the questionnaire also helped to evaluate the adequacy of housing for size, proximity to services, infrastructure and the other indicators of housing adequacy that are tested in the objective assessment.

The second part of the questionnaire collected data on the socio-economic characteristics of households such as household head's age and gender, family size, monthly family income and length of residency. These aspects have been used in the housing studies literature to investigate the socio-economic characteristics of residents (Mohit, Ibrahim & Rashid 2010; Salleh et al. 2011). These selected characteristics were used in the data analysis in this research to determine any correlation between the respondents' characteristics and households' views about the adequacy of their housing. A study done by Galster (1987) has supported this argument by showing that older residents compared to the younger households are more satisfied about their social housing.

In the third part of the questionnaire, the research participants were asked to give their opinions about different issues. These issues represent the 12 indicators of housing adequacy which were evaluated subjectively. Adepoju (1974, p. 189) has stated that 'a dwelling that is adequate from the engineering or from the design point of view may not necessarily be adequate or satisfactory from the inhabitant's point of view'. Five-point Likert scales was used to specify the respondents' views regarding the adequacy of different aspects of their housing such as location, services provided to their home, and number of bedrooms. Francisco, Butterfoss and Capwell (2001, p. 21) have stated that a quantitative method that uses ordinal measures is suitable in answering different research question such as 'how satisfied people are with their program'. Hence, the participants were asked

to give their view on a scale from one to five. The format of this scale was as follows: 1 = very inadequate, 2 = inadequate, 3 = neutral, 4 = adequate and 5 = very adequate. This method has been implemented in a number of other studies (Hanson, Lloyd & Lorimer 2004; Mohit, Ibrahim & Rashid 2010; Salleh et al. 2011). The use of five points of the scale rather than three aspects of adequacy offered multiple choices and hence enhanced the overall result of the study (Abdellatif & Othman 2006).

The last section of the questionnaire had open-ended questions. These types of questions were significant as the questionnaire asked the participants to give their opinions regarding their houses and the social housing policy. Hence, problems with the policy can be identified from the client's point of view. Having this part was important in answering the third research question: How could the policy be improved? The researchers received the completed questionnaires from the interviews at the beginning of December 2013. The raw data was entered into SPSS to do the analysis.

5.5.1.2 Questionnaire Development

To increase the effectiveness of the questionnaire, a draft version was presented to some professional academic experts working at The University of Queensland as well as the researcher's advisers for comments. Then, the researcher translated the English version to Arabic as the native language in Oman is Arabic. Other PhD students translated the Arabic version to English again to ensure the validity of the questions in the questionnaire. This method has been applied by other research such as Mukhtar (1997).

5.5.1.3 Face to Face Survey Method

Conducting the surveys by using the phone would have been difficult as there is no information available about the phone numbers of households living in social housing. In addition, the postal mail system in Oman is not activated well in many wilayats and there is no exact address for each social housing unit available. Thus, there was a need for someone who knows the locations of social housing units in the five wilayats and is able to fill out the questionnaire by asking the household heads in face to face meetings to become involved. The researcher contacted some key informants working at the Ministry of Housing in Oman and they provided some workers who knew the location of the social housing units and identified the social housing.

The questionnaires were distributed, conducted face to face and filled out by trained interviewers. Face to face method was used because around 14 per cent of the Omani people whose age is more

than 15 years old cannot read or write (NCSI 2014c). The phenomenon of illiteracy amongst low income people seems to be worse. The interviewers were selected from Sultan Qaboos University students. The researcher conducted one meeting on 15 of September 2013 with the interviewers in Wilayat Al Rostaq to brief them on the research project and explain the structure of questionnaires. The researcher also participated in distributing and conducting around 30 of the face to face questionnaires in Wilayat Al Rostaq. The remaining surveys were carried out by the interviewers over a period of ten weeks, commencing from 16 September 2013. Each questionnaire took around 20-25 minutes to be completed. If the selected household refused to do the interview, the interviewers chose another household which lived at the right, then at the left side, of the selected house.

5.5.1.4 Households Questionnaire Response Rate

Structured questionnaires were distributed in the five case study wilayats in the Sultanate: Al Rostaq, Nizwa, Sur, Ibri, and Al Buraimi. There was no publicly available listing of the specific housing units or their locations, so the researcher contacted the Ministry of Housing, (the 'gate keeper' for the information) for any information available such as the owner's name for each of these housing units. The researcher used the owners' names as a basis for a sample frame of the 1,097 housing units and then 400 units were selected randomly from the list created. The reason behind selecting more housing units than the required number was to ensure an adequate level of response. In fact, 340 questionnaires were undertaken but ten of them were excluded as they were incomplete. Thus, 330 questionnaires were used in this research, making a response rate of 82.5 per cent.

5.5.2 Interviews with Policy Makers

Milligan et al. (2007) have argued that using qualitative methods, such as interviews with policy makers, is a recommended method in evaluation research. They have stated that by using qualitative methods, the connection between the policy and its outcomes will be understood. Hanson, Lloyd and Lorimer (2004) in evaluating the social housing program in Canada have implemented various qualitative open-ended questions to come up with ideas that may enhance the social housing programs. Francisco, Butterfoss, and Capwell (2001, p. 21) have argued that the strength of using a qualitative method is that it provides "greater depth of understanding about a small number of people". This argument has been supported by the Hanson, Lloyd, and Lorimer's (2004) study and

comprehensive results were revealed. That is because this approach allowed the interviewers to pursue topics in more detail.

Here, it is worth noting that most detailed information in regard to social housing policy in Oman is not available in public. Thus, using interviews with policy makers was critical, especially in answering the housing supply aspect of evaluation which represents the second question of this study. The interviews were conducted by the researcher with six key informants working at the Ministry of Housing in Oman. This method is called expert purposive sampling technique which is used when the researcher aims to gather information from individuals who have particular expertise in the topic. Bryman (2012, p.416) has stated that purposive sampling is "essentially to do with the selection of units (which may be people, organisations, documents, departments and so on), with direct reference to the research questions being asked". Therefore, this study conducted in-depth interviews with informants and key policy players who have a big role in social housing policy and work in delivering social housing units. Those key informants were the Minister of Housing, Director General of Housing Projects, Assistant Director General of Housing Projects, Director of Social Housing, Assistant Director of Social Housing, and Head of Social Studies Department of Social Housing. The Undersecretary of the Ministry of Housing, on the other hand, refused to do the interview with the researcher because he thought that an interview with the Minister of Housing was enough to gather the information required for this study. This limitation was covered by interviewing the Head of Social Studies Department of Social Housing who also plays a role in the social housing policy in Oman.

The interviewees were senior figures in the Omani government. Before the interviews were conducted, an official University of Queensland letter was distributed to them to confirm the purpose of the study. The researcher also got a letter from the Vice-Chancellor of the Sultan Qaboos University (the sponsor of the researcher) to obtain permission for conducting the interviews. That Vice-Chancellor has the position of an undersecretary in the Omani government.

These interviews were conducted by the researcher between September 2013 and December 2013 at the Ministry of Housing (informants' offices). The interviews were conducted face to face for approximately one hour to maximise the quality of the answers. An interview guide was developed in Arabic before the interviews (see Appendix 9 with English version) and the answers were recorded. To increase the quality of the responses, the interview guide was semi-structured, following the approach used by Hanson, Lloyd, and Lorimer (2004). That helped the researcher to

get more detailed ideas, opinions and information from key informants. The following questions are some examples of the questions that were included in the interview guide.

- What is the main aim of the social housing policy in Oman?
- Do you think that there is still a need for more social housing in Oman?
- How many applicants are now in the waiting list?
- Do you plan for the future social housing demand (for the upcoming five and ten years)? And how?
- Do you think that there is enough budget allocation from the Omani Government to support the current and likely the future social housing demand?
- From your opinion, how could the social housing policy be enhanced to deliver more adequate housing? And to be more effective if it is not effective right now?

5.5.3 Ethical Clearance

As this study involved human participation in obtaining primary sources of data, the researcher obtained ethical clearance from The University of Queensland's School of Geography, Planning, and Environmental Management before distributing the questionnaires and conducting the interviews. In addition, participants (householders and policy makers) were provided with a brief background ('participant information sheet') of the nature of this research and its importance to them and the community. They were also informed that their information will be used for research purposes only.

5.5.4 Site Visits

The third primary source of data was site visits. Although this method is not widely used in housing studies, Abdellatif and Othman (2006), Hanson, Lloyd, and Lorimer (2004), and Ibem, Aduwo and Uwakonye (2012) have used such visits. Abdellatif and Othman's (2006) study was done in the United Arab Emirates and it used this technique to show the structural quality of current low income housing in that area. Photos of damaged water tanks and unused gas tanks were taken and used as evidence in their discussion. Therefore, using this method in helping evaluate the adequacy of social housing in Oman may confirm and illustrate the results of the study. The researcher visited some social housing located in two locations in Al Rostaq. These locations were visited on 20 October and 26 December 2013: Al Jao and Hay Al Sarah. Photos and notes were taken to show the general current situation of the buildings and locations.

5.5.5 Secondary Data

This study has not relied only on the primary sources of data to achieve its objectives. Secondary data were also needed. Statistical data from the 2010 General Census of Population, Housing & Establishments is an important example of the secondary data which was used in this study. Materials such as books and reports published by the Omani National Centre for Statistics and Information were also used to identify some demographic characteristics of the population such as the number of the Omani households and the household size. Combining all this information with other data from the primary resources helped to answer the second question of this study about the current and future demand of social housing in Oman.

Existing documents and legislation concerning the social housing policy such as the Royal Decree number 37/2010 (Ministry of Legal Affairs 2010) and the Ministerial Decree number 6/2011 which encompass the executive regulations of this policy (Ministry of Housing 2011) were also used as a secondary source of data in this research project. Data about the social security households published by the Ministry of Social Development were also used to evaluate the current need of social housing.

5.6 Data Analysis

As the section above explained how the data for this research was collected, this section shows how this data was analysed. Descriptive and inferential statistics were used to analyse the quantitative data while the content analysis techniques were used to analyse the qualitative data. Hence, both quantitative and qualitative approaches were implemented in the analysis process.

SPSS (Statistical Package for the Social Sciences) program was used to analyse the quantitative data. Different descriptive and comparative statistics such as frequencies and percentages of respondent's characteristics as well as an adequacy score were derived to help understand the results of the study. The frequencies and percentages of respondents' characteristics were used to understand the socio-economic characteristics of the households living in the social housing in Oman. Percentage scores of adequacy were used to identify how many household heads living in social housing felt that their social housing was adequate. This method is widely used in empirical studies that aim to measure the satisfaction of respondents regarding their public housing (Alndabi 2010; Salleh et al. 2011; Ibem, Aduwo & Uwakonye 2012).

The housing adequacy was evaluated by examining twelve indicators; this evaluation was carried out using both subjective and objective indicators (see Table 5.3). On the objective side, the sum of each individual participant's score on all twelve objective housing adequacy indicators is referred to as individual's overall objective adequacy score (IOAS). This score was used to assess the availability of important services. This method has been used by many researchers in evaluating the adequacy of housing (e.g. Djebarni & Al-Abed 1998; Mustapha, Al-Abed & Wild 1995). Although there is no clear boundary that can be used by which the housing units can be divided into a group which is considered as 'adequate' and a group which is 'inadequate', the higher the score the more adequate the house in terms of the provision of the identified services.

Table 5.3: The objective and subjective indicator scales of housing adequacy

Indicators	Objective scales	Subjective scales
1-Household has a title deed to housing.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from 1-5: very inadequate to very adequate)
2- Household pays no more than 30 per cent of their income to get access to housing.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
3- Housing is connected with piped drinkable water	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
4- Housing is connected to a sewerage network system.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
5- Housing is connected with paved roads.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)

Indicators	Objective scales	Subjective scales
6- Housing with 2 persons or less per bedroom.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
7- Housing was built in compliance with building codes.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
8- Housing does not require major maintenance or repairs.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
9- Housing entrance provided with wheelchair ramp.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
10- House is located within two kilometres of the nearest hospital or health centre.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
11- House is located within 400 metres distance or 5-minute walk to the nearest mosque.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)
12- Household offered a choice of housing to live in.	Yes (objectively adequate) =1 No (objectively not adequate) =0	- 5 point Likert Scale (from1-5: very inadequate to very adequate)

On the subjective adequacy side, the summation of individual respondents' scores on all the twelve subjective housing adequacy indicators was referred to as the individuals' overall subjective adequacy score (ISAS). This score was used in assessing participants' perception about their social housing units. It is also used to identify how many household heads felt that their social housing was adequate. The sum of both scores, IOAS and ISAS, is referred to as overall housing adequacy (OHA). In addition, the total scores of the housing objective indicator are the objective indicator score (OIS) while the total scores given by all the respondents to each of the housing subjective indicators is the subjective indicator score (SIS). These scores were used in assessing the contribution of each of the twelve indicators to overall housing adequacy.

The study used Cronbach's Alpha to measure the internal consistency of the subjective scale. A correlation analysis was carried out to find the correlation between the independent variable and the dependent variable. In fact, a Spearman rho correlation coefficient was applied to examine this correlation. That is because this test is used where both variables (x and y) are classified as ordinal type of data (Bryman 2012) and that is the case in this study. Categorical regression analysis was also used to clarify which factors had the greatest influence on the participants' views.

Regarding the supply evaluation, the informants made available numerical data about waiting lists and the like which were analysed statistically. A summative content analysis technique was used to analyse the interviews with the key informants so as to answer the third question of this research: how could the policy be improved? Determining keywords in the content helped to identify some opinions and general themes (Hsieh & Shannon 2005) in regard to the social housing demand/supply and housing adequacy.

For the future demand of social housing, the researcher asked the policy makers if they have any estimation about the future demand of the social housing units for the next five and ten years. As no estimates had been made and there were no plans to undertake such estimates, the study used population projections for the Sultanate along with the current social housing need to estimate the future need for social housing units in Oman. To be able to project the future demand, this study relied on the data published by the National Centre for Statistics and Information. The study, after determining the current need, calculated future need as a proportion of the expected future population of Oman.

In sum, as the objective of this research was to examine the effectiveness of the social housing policy by answering the three research questions, data collection and analysis have been designed to address the research questions as shown in Table 5.4.

Table 5.4: Research design—data sources and data analysis that address research questions

Questions	Data source	Data analysis
To what extent has the social housing policy in Oman been able to deliver adequate housing?	Questionnaire with household heads Interviews with policy makers. Site visits (taking photos and notes about social housing).	Descriptive statistics (frequency distribution such as percentage) Inferential statistics (correlation analysis) Content analysis (qualitative survey data)
Does the social housing policy in Oman deliver a sufficient quantity of housing?	Interviews with policy makers and access to official waiting list numbers. Secondary statistical data (The 2010 General Census of Population, Housing & Establishments and the book *Population projection for the Sultanate of Oman 2015/2040* (NCSI 2014d).	Content analysis documentation analysis supply and demand equations Statistical analysis using population projections and ratios
How can the social housing policy and its implementation be improved?	Interviews with policy makers Questionnaires with household heads Site visits (taking photos and notes about social housing).	Content analysis Literature

5.7 Method and Data Limitations

This research interrogates a single case study. Yin (2014) and other social science research method theorists (Woodside 2010) acknowledge the limitations of a single case study method relating in particular to accuracy and generality. These limitations are acknowledged by the researcher. To address these methodological limits, the researcher adopts a triangulation of data sources. This ensures that the results are robust and credible. The researcher also places the single case study of social housing in Oman in the context of the international literature on social housing and the experiences in the Arab Gulf States. This provides the researcher with a breadth of understanding of social housing, beyond the single case of Oman. So, while the research focuses on a single case study, there is potential to generalise from this case to similar contexts such as the social housing systems in other Arab Gulf States.

This was a cross-sectional analysis of social housing in Oman. It focused on housing adequacy at a particular point in time. There may have been changes in both the objective and subjective measures of adequacy over time. These changes could have been identified only through a longitudinal study, or, at least, a repeat of the current investigation at a later point in time. Such a longitudinal study would have identified changes in the effects of policies, changes to residents' attitudes and so on. However, time and resources allowed only the single time-constrained case study investigation. This limitation could not be overcome with the time and resources available to the researcher but the study has provided a benchmark against which future studies are possible so that changes over time can be monitored.

The study area of this research is Oman and the research is being completed through an Australian university. The difficulty here is that most information about housing in Oman in general and social housing specifically is not available through the internet or through other public sources (such as libraries). To overcome this limitation, the researcher requested key people in different Ministries in Oman to directly send data electronically. The researcher also received books and reports that include general information about Oman. In addition, after confirmation, the researcher travelled to Oman to collect the remaining secondary data as well as primary data.

In addition to this limitation, literature and studies about social housing in Oman are rare. The researcher relied on other studies done in developed and developing countries, and more specifically the Arab Gulf States such as Saudi Arabia, Yemen, and the United Arab Emirates as they have almost the same culture, language, and religion. Moreover, most of the resources which

are available in Oman or in other Arab Gulf States are not written in English. Even the documents about the social housing policy in Oman are written in Arabic. This limitation was overcome as the researcher was able to translate the information.

5.8 Summary

This chapter has outlined the research methodology adopted in this study. It began by showing how the three social housing programs were chosen to do the two types of evaluation; housing adequacy and housing supply. It also identified the data sources and explained how these data were analysed to answer the research questions. The rationale of the five case study selection was also explained. It ended by showing some limitations in doing this research and how these limitations were overcome.

Chapter 6: Social Housing Adequacy

This chapter analyses and discusses the data derived mainly from the quantitative survey of the respondent households (n=330). Data from in-depth interviews and site visits were also used to support and clarify the survey findings. The chapter explores seven main topics. The first section (Section 6.1) investigates the socio-economic and demographic characteristics of the respondents and their households. Knowing about the occupants of the social housing in Oman helps in assessing the adequacy of the dwellings. For example, knowing the number of occupants, their income and other characteristics assists in understanding the adequacy of the dwelling to meet the needs of occupants. The second section (Section 6.2) presents the objective measures of housing adequacy in which the twelve indicators that were derived in Chapter Four (see Figure 4.3), including the cost of the housing, the availability of services, the quality of the structure, and the location of the social housing were evaluated. The next section (Section 6.3) outlines the contributions of each of these indicators to the assessed value of an overall measure of objective adequacy.

The fourth main topic included in this chapter (Section 6.4) covers the results of the subjective evaluation of housing adequacy, based on the participants' opinions. The following section (Section 6.5) assesses the contributions of each of the subjective indicators to the overall value of the measure of subjective adequacy. The sixth section (Section 6.6) then looks at the relationship between the objective and the subjective indicators. It also examines the factors that may affect residents' views in regard to housing satisfaction and adequacy. The final section (Section 6.7) assesses the overall housing adequacy in the social housing areas investigated. Such a comparative examination will help to answer the first question of this research: to what extent has the social housing policy in Oman been able to deliver adequate housing?

6.1 Socio-economic Characteristics of Respondents

The results of the 330 surveys that were undertaken in the study area show that the majority of the respondents (86.7 per cent) were male while 13.3 per cent were female. This represents the dominance of males over females as household heads, as the questionnaire was specifically addressed to household heads. The household size varied from only one person to twenty five persons in a house with an average of 7.1 persons per dwelling; which is slightly less than the average of the Omani household size of eight persons in 2010 (NCSI 2014a). The single most common age group of the household heads was between 31 and 39 years (28 per cent of the

respondents), followed by 22.9 per cent who were 60 years old or above. Some 21.3 per cent were between 40 years and 49 years, 18.3 per cent were between 50 years and 59 years and those of 30 years and less constituted only 9.5 per cent in the sample (Figure 6.1). So although there was a fairly even spread across the major age groups, the majority of respondents were middle-aged or older.

Figure 6.1: Age group of household head respondents
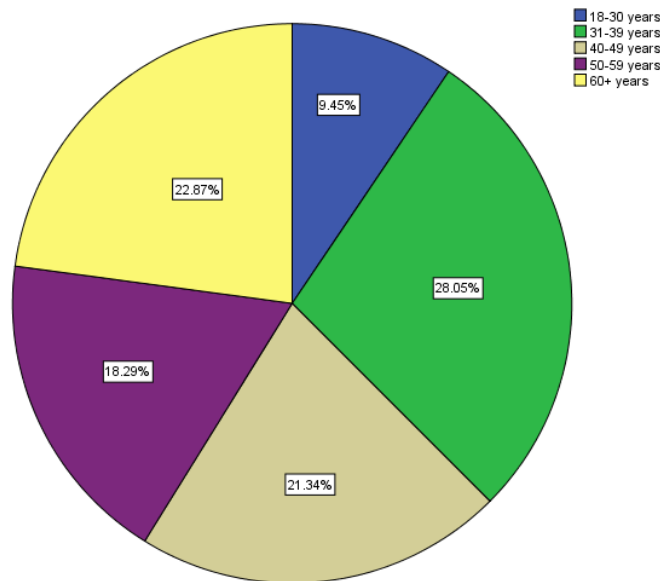
Respondents' duration of residence in the housing area varied. A high percentage (59.7 per cent) have occupied their social housing for between four and six years, 22.1 per cent resided there between one to three years, 12.1 per cent between seven and nine years, and only 6.1 per cent for ten years or more (Figure 6.2). This finding is logical because the study only surveyed the household heads living in social housing that was built between 2001 and 2010. The study also showed that by far the majority (84.2 per cent) of the respondents were married compared to 1.7 per cent who were not married, 3.6 per cent who were divorced while 9.4 per cent were widowed. Uneducated or illiterate household heads represented 38.8 per cent of the total, followed by 23.2 per cent who had finished secondary school and 12.8 per cent who had finished primary school. Only 1.2 per cent of respondents had attained higher education.

Figure 6.2: Respondents' duration of residence
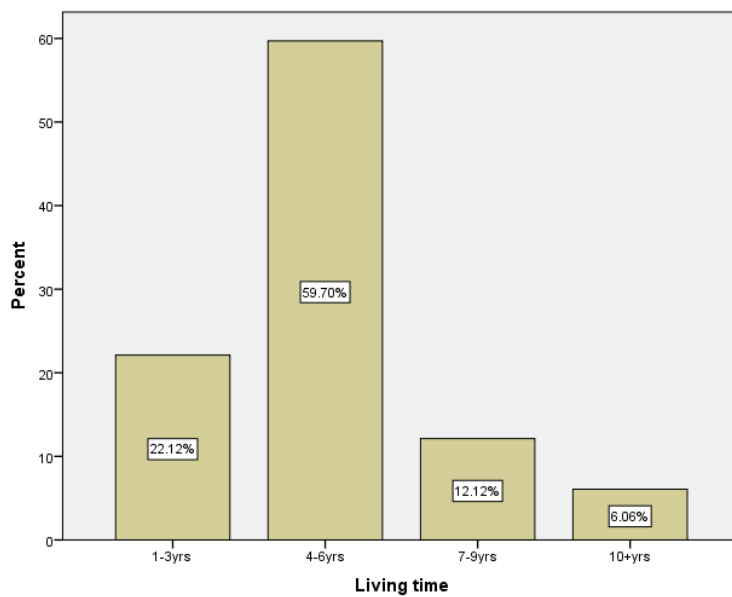
The results also show that a high percentage of the respondents (37.2 per cent) were unemployed, followed by 27.5 per cent working in the public sector, 18.8 per cent working in the private sector, and 16.3 per cent who were retired (Figure 6.3) .

Regarding the household monthly income, the majority (77.9 per cent) of the 325 households which answered this question were earning 300 OMR or less per month, 20.2 per cent were earning between 301 and 600 OMR, and the remaining small percentage (1.9 per cent) were earning more than 600 OMR (Figure 6.4). In contrast, the average household income for the country in 2011 was 1172 OMR (NCSI 2014a). This result is as would be expected, given that the official government policy, as stated in the main social housing policy document, is that "only those households which get 400 OMR or less can get access to the Residential Units Program" (Ministry of Housing Oman 2011, p. 41). However, according to this regulation of the social housing policy, it seems that there is some conflict in the result by which around 1.9 were earning over 600 OMR and they have residential units. That is due to the fact that people's income is only taken in to account during the time of application. One of the policy makers who were interviewed stated that "if the income of the applicants increased after they got the unit they will still have the right to own that house" (Ministry of Housing official, interviews, September 2013). This result also suggests that a good number of the residents who were classified as low income people have experienced improved economic status in the last years.

Figure 6.3: The work status of the household head
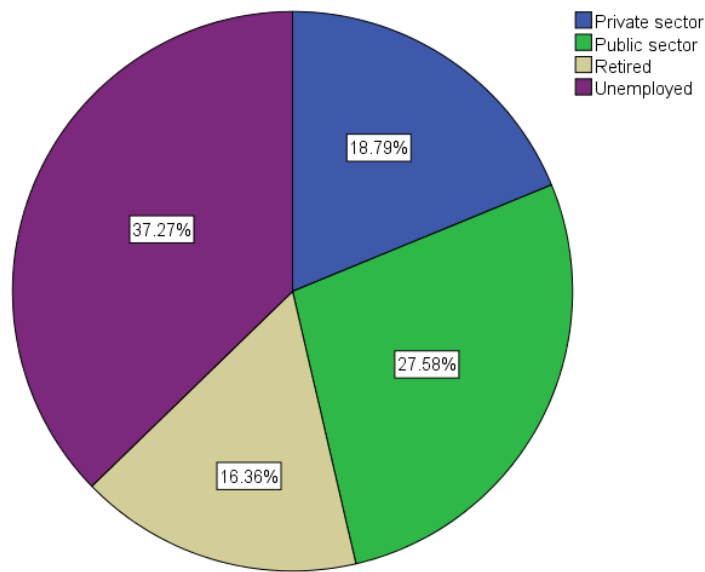
Figure 6.4 Respondent households' monthly income in Omani Rial (OMR)
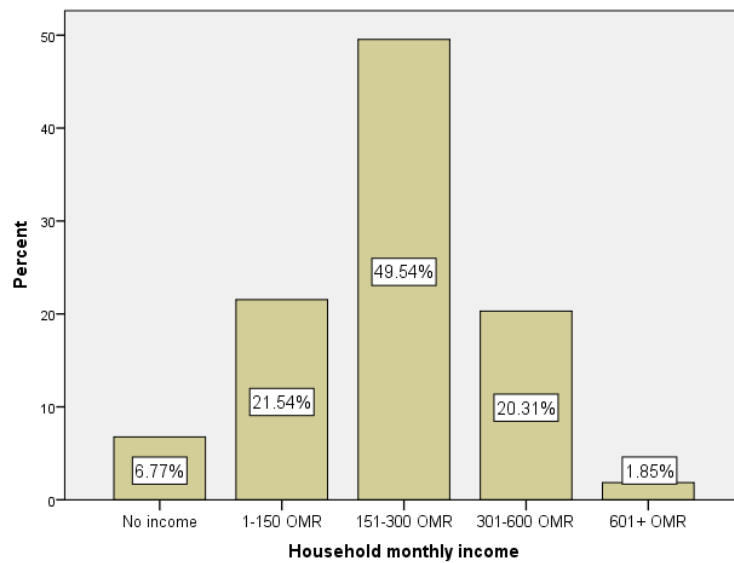
From the results above, it seems that poorly educated, unemployed, and low income people constitute a high percentage of the respondent households. This is consistent with the aim of the social housing policy in Oman which clearly states that such vulnerable people have priority for gaining access to social housing. The finding was reinforced by one of the policy makers interviewed, when he stated that "social housing policy in Oman aims to deliver adequate housing to low income, unemployed, and retired people either from public or private sector as most of those

people cannot afford a housing unit for themselves and for their families in most of the time" (Ministry of Housing official, interviews, September 2013). It was also found that social housing policy, through the Residential Units Program, has provided residential units for applicants of different ages. This finding was consistent with the executive regulations of the social housing policy. According to these regulations, applicants whose age is less than 21 can also get access to residential units if they are the only breadwinner for their family at the application time. The basic conditions to get access to the social housing programs are discussed in more detail in the following chapter (Section 7.3). Nevertheless, these findings imply that social housing policy in Oman is achieving its aim in helping the most vulnerable Omani residents in getting access to housing.

Here, it is worthy of note that these different socio-economic characteristics and aspects of the respondents examined in this section have some implications. Specifically, a significant proportion of the difference in the subjective views on housing adequacy may have its explanation in the variations in residents' characteristics. It is expected that the subjective housing adequacy in the study can be associated to household heads' characteristics. This issue is discussed later in this chapter.

6.2 Objective Housing Adequacy

This section presents information about some of the physical characteristics of the housing units themselves, in terms of defined measures derived and discussed in Chapter Four. The objective adequacy of these units was assessed by using a five point scale for each indicator. Each indicator was given 0 points for being inadequate or five points for being adequate (in many cases, zero represented its absence and five its presence). The sum of the twelve objective housing adequacy indicators was referred to as the 'individuals' overall objective adequacy score' (IOAS), although in this case, 'individual' referred to the individual house rather than to the householder. This means that the lowest possible score for each house will be zero and the highest score will be 60 points. In addition, having more points means being more adequate.

Figure 6.5 represents the individuals' overall objective adequacy score on a scale with values from 10 to 50 rather than from zero to 60, where 10 means less adequate and 50 means more adequate on all measures. No houses in this study got scores of 5, 55, or 60 points. The highest score was 50 points represented by only two per cent of the sample while the lowest score was 10 points represented by around 3.6 per cent of the dwellings. Here it is worth mentioning that none of the surveyed social housing in Oman got the full 60 points for a totally adequate dwelling when all

indicators were measured. In addition, no dwelling achieved zero points for a dwelling that was seen as totally inadequate by all measures. Figure 6.5 also shows that the objective scores are spread across values between 10 and 50 points on the scale. This dispersal means that different housing units get different scores. The spread of the results illustrates that the services provided to social housing, the maintenance provided by the Ministry of Housing, the structural condition, and the location of such units in relation to services and facilities are not distributed equally for all housing. This is a matter that will be explored more fully in the rest of this section.

Figure 6.5: The individuals' overall objective adequacy score (IOAS)
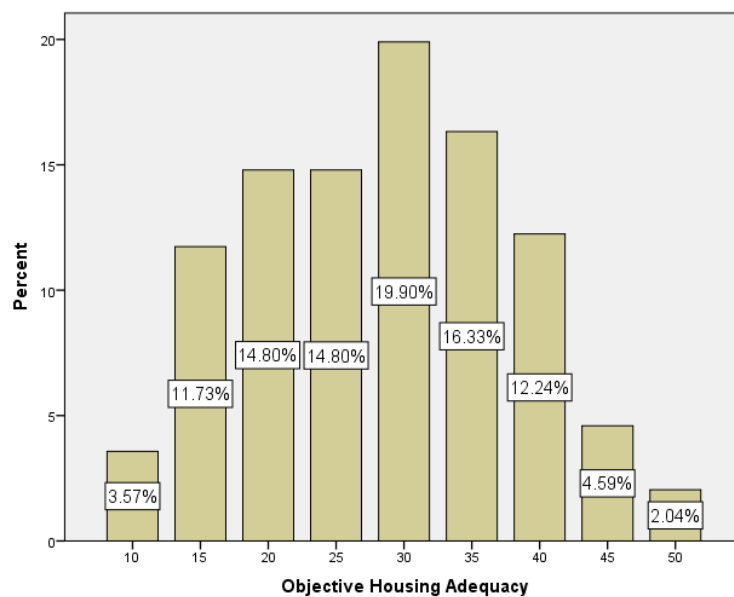
One contextual matter that affects the results is that these houses are located in different cities and hence different services and circumstances may be applied for different clusters of housing units. To confirm this argument, there is a statistically significant association between the individual overall objective adequacy scores (IOAS) and the location of the social housing in the five cities surveyed (x^2= 52.040, df= 4, P≤.000). That means there is less than a two per cent chance that this relationship could be found in the sample when no relationship exists in the population from which the sample is drawn. A Cramer's V test to measure the strength of the associations indicated that there is a strong relationship (Cramer's V= 0.515) between these two variables. This result was also supported by many senior policy makers who were interviewed for this research. One of them, for example, stated that "the house's connection with drinkable water, with the sewerage system, or with paved roads depends on its location. If such a desirable network is available in that area the social housing units will be connected to the system, otherwise it will not be" (Ministry of Housing official, interviews, September 2013).

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The difference between two similar housing forms where one has access to external services and the other does not is shown starkly in Figures 6.6 and 6.7. Figure 6.6 shows that for social housing units that were provided under the Residential Units Program in Wilayat Al Rostaq, no paved roads were provided until 2013. The picture was taken by the researcher on a site visit in 2013. On the other hand, Figure 6.7 shows that social housing units that were provided in Wilayat Al Buraimi by the same program were connected to paved roads. The implication of this finding is that in assessing the adequacy of social housing in Oman the measures used must include access to external services as well as measuring the adequacy of the housing units themselves. Effective policy must include both.

Figure 6.6: Social housing units in Hay Al Sarah Area, Wilayat Al Rostaq

Source: Field survey (2013)

Figure 6.7: Social housing units in Hafeet, Wilayat Al Buraimi

Source: Field survey (2013)

The objective adequacy scores were distributed across a wide range of different values (as was shown in Figure 6.5) but for this study it is critical to be able to compare the housing that has a higher adequacy score with housing that has a lower score. In order to make this kind of comparison, the mid-point score was used as the dividing point between 'more adequate' housing and 'less adequate' housing. The less adequate housing has scores in the lower half while the more adequate housing has values on the higher half of the scale. Since the scale was spread between zero and 60, the mid-point is a value of 30. Using this as the cut-off point immediately creates difficulties in interpretation, however, because this mid-point value has the highest single percentage representation of all the adequacy values. Including these mid-point values in either the lowest half or in the highest half would lead to two quite different interpretations of the results.

To show the influence of the two possible interpretations of these results, two scenarios were created. In the first scenario, the scale was divided into two categories by classifying 30 points in the top half. In other words, the 'less adequate' category represents housing that got zero to 25 points in the individuals' overall objective adequacy scores (IOAS). The higher half or the more adequate housing were those that scored 30 to 60 points. The result of the first scenario is presented in Figure 6.8. In this interpretation of the results, around 45 per cent of surveyed social housing was ranked in the bottom half of the adequacy score while 55 per cent of such housing was rated as more adequate.

Figure 6.8: The objective adequacy categories (First scenario)
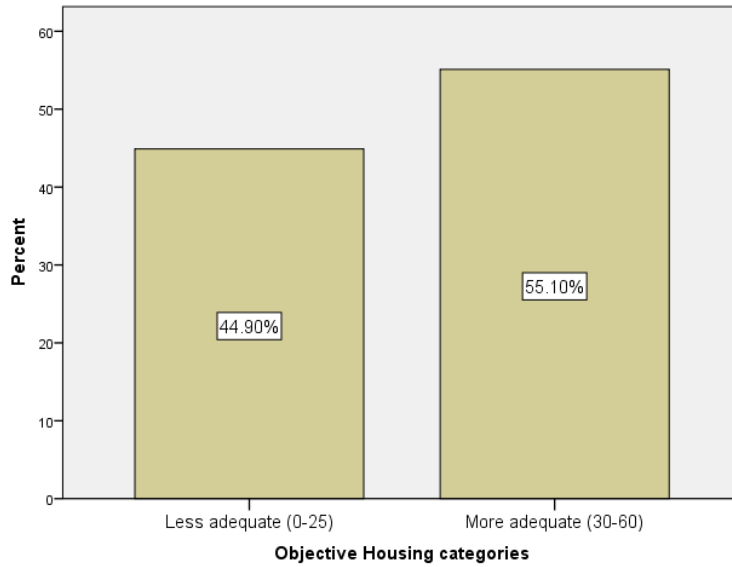
In the second scenario, the less adequate housing represents houses that got zero to 30 points in the individuals' overall objective adequacy scores (IOAS). The more adequate category is the top half that represents houses with 35 to 60 points on the objective scale. The result of this scenario is presented in Figure 6.9. In this interpretation, around 65 per cent of surveyed social housing was rated as less adequate while only 35 per cent of such housing seems to be more adequate.

Figure 6.9: The objective adequacy categories (Second scenario)
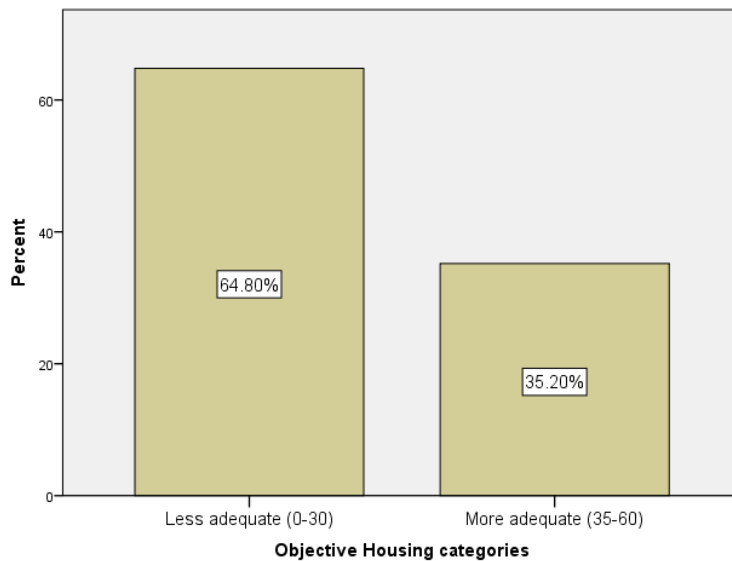
The difference between the interpretation of the results shown in Figures 6.8 and 6.9 was caused by the differential classification of the mid-point value—30 points. Knowing that this point represented

around 20 per cent of the sample size increased the difficulty and potentially led to two quite different interpretations of the results. Therefore, the fairest and safest interpretation would be to put all housing that got 30 points in a different category neither in the bottom half nor in the top half. That will help to present the overall objective adequacy of the surveyed housing without any outside effects or influences. For that reason, a third scenario was created in which the 30 point value was neither a part of the bottom half nor of the top half.

In the third scenario, three categories were created. The first one included that housing that got zero to 25 points and so was classified as the least adequate. The second category represents the housing that obtained 30 points (effectively 26-34 points). On the other hand, the housing that was classified as more adequate was that which got 35 to 60 points on the objective adequacy score. The result of this scenario is presented in Figure 6.10. Figure 6.10 shows that around 45 per cent of the houses were classified as less adequate, 20 per cent got the 30 points which was in the mid-point, and 35 per cent of them were classified as more adequate.

Figure 6.10: The objective adequacy categories (Third scenario)
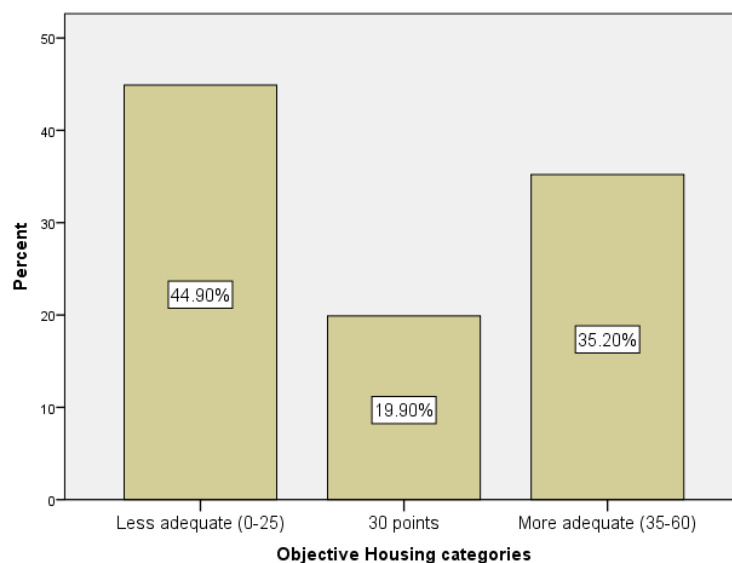
Reviewing the results that were obtained from the three scenarios above, it seems that even by taking the influence of the mid-point values out of the scale, more houses were inadequate than were adequate. Therefore, it could be concluded that more of the surveyed social housing in Oman was objectively less adequate than was classified as more adequate. That is because a high percentage did not achieve the defined measures or the twelve objective indicators adopted by UN-HABITAT.

According to the UN-HABITAT measure of housing adequacy, for housing to be adequate, it must, at a minimum, meet the minimum standard for all of the seven components of their housing adequacy measures (security of tenure, availability of services, affordability, habitability, accessibility, location, and cultural adequacy). These seven measures are assessed using the twelve indicators that are discussed in detail in Chapter Four (see OHCHR & UN-HABITAT 2009, p. 3). Applying this somewhat rigid approach to housing adequacy would lead to the conclusion that none of the social housing units provided through the Residential Units Program in the study area are adequate. That is because none of them accomplished a full score for the twelve indicators and so none got the highest score 60 out of 60 points. The UN-HABITAT definition of housing adequacy seems to be an extreme view where a condition of 'adequacy' is available only to housing units that obtain a perfect score on all indicators. It is clear from the results of the investigation that a range of scores can be obtained in terms of housing adequacy. In other words, classifying some housing as 'adequate' and then calling all other housing 'inadequate' is creating a false dichotomy. In reality housing units are more or less adequate; their measured adequacy will fall somewhere along a continuum rather than falling into either an 'adequate' or an 'inadequate' category. This argument was supported by this research's results in which it was hard to identify a specific and unambiguous boundary between 'adequate' and 'inadequate' housing. The recommendation here is that researchers should consider measuring the houses on a scale of adequacy rather than using a simplistic dichotomy of 'adequate' or 'inadequate'.

6.3 Contributing Indicators to Objective Housing Adequacy

The previous section showed the overall objective adequacy of the entire sample of housing units. This section will explain the contribution of each of the twelve indicators in the overall objective housing adequacy score (see Table 6.1). The level of responses has been standardised to take account of non-responses (e.g. 'Don't know') to questions in the questionnaires (usable responses ranged from 227 to 330). The term used in the research to show such a contribution is called the objective indicator score (OIS). Examining the contribution of the OIS will help us to understand the degree to which each of the twelve indicators contributes to measures of adequacy or inadequacy of the housing and, hence, the policy implications of the application of each indicator.

Examination of Table 6.1 reveals that the availability of a wheelchair ramp at the entrance of the house seems to contribute least to the overall score, earning only 80 points out of a total 8970 points. The possible maximum score for this indicator was 1645 points. The explanation for this

low contribution is that only 4.9 per cent of the houses were provided with a wheelchair ramp although 14.1 per cent of the houses have one or more disabled people living in them. By applying the accessibility indicator used by UN-HABITAT, this study concluded that 95.1 per cent of the houses in the study area had inadequate accessibility. The majority of policy makers who were interviewed confirmed that the Ministry of Housing provides a wheelchair ramp to the entrance of the social housing units only if the head of the household informed the Ministry about the need for one. This implies that the socio-economic characteristics of the beneficiaries and their families should be assessed by the Ministry of Housing before delivering such units, not afterwards.

Table 6.1: The contribution of the OIS in the overall objective housing adequacy

Objective Indicator		Number of houses assessed for that indicator	Objective indicator score (OIS)	Possible maximum indicator score	Percentage from the possible maximum indicator score	Housing adequacy component
1	Wheelchair ramp	329	80	1645	4.8	Accessibility
2	Ministry maintenance	328	165	1640	10	Habitability
3	Housing choice	307	475	1535	30	Cultural adequacy
4	The adequacy of living space	328	600	1640	36.5	Habitability
5	Sewerage system network	325	600	1625	36.9	The services provided
6	Drinkable water network	329	695	1645	42.2	The services provided
7	Health facility location	318	820	1590	51.5	Location
8	Structural condition	227	655	1135	57.7	Habitability
9	Connection to paved road	321	990	1605	61.6	The services provided
10	Title deeds	330	1040	1650	63	Legal security of tenure
11	Mosque location	322	1200	1610	74.5	Location
12	Housing cost	330	1650	1650	100	Affordability

The second indicator that contributed very little to the objective housing adequacy was ministry maintenance. Most of the respondents (90 per cent) claimed that their houses required major repairs or maintenance work while only 10 per cent stated that their house did not require major repairs. The majority of those who felt their houses required major repairs (80 per cent) claimed that the required changes related to structural conditions such as walls, floors, stairs, or ceilings. About 65 per cent related to the plumbing system such as the laundry, while 53 per cent related to the electrical system (such as lighting fixtures and air-conditioning), and 22.7 per cent of them stated that the changes related to other maintenance work. Connecting this result with the habitability housing component used by UN-HABITAT indicated that most of the housing units were inadequate, in regard to this indicator, as many of the housing units required many major repairs. These findings explained why this indicator had a low objective indicator score and thus made only a small contribution to the overall objective housing adequacy score.

The next lowest of the objective indicator scores was that of housing choice; which contributed only 475 points whereas the possible maximum points was 1535. The explanation for such a low contribution lies in the process of delivering social housing units and how the beneficiaries choose their housing. The executive regulation of the social housing policy states that social housing units that are delivered in each city through the Residential Units Program are provided as the result of a decision of a committee. The committee members are chosen by the Minister of Housing. The members are as follows: the Governor of the city (Chairman), a representative from the Ministry of Regional Municipalities and Water Resources, a representative from the Ministry of Social Development, and two or more representatives from the Ministry of Housing (Ministry of Housing 2011). Then the committee in accordance with the provisions of the social housing policy and its regulations submits its recommendations to the Minister for approval. Hence, the beneficiaries who live in social housing units are not represented on the committee and they do not participate in the social housing delivery processes. On the other hand, the majority of the policy makers in the interviews emphasised that social housing through the Residential Units Program is delivered after discussions and agreement between the Ministry of Housing and local authorities such as the Governor of the city. They also stated that the opinions of the beneficiaries are taken into consideration.

From the above, it seems that there is a contradiction between the results obtained from the surveys, the statements in the social housing policy document, and views expressed by policy makers. That may be due to the fact that there is a lack of clarity about how beneficiaries participate in social

housing delivery (and in fact whether they do at all). This argument is supported by the results of this study where a high percentage of the respondents (69.1 per cent) indicated that they were not offered a choice of houses to live in. Hence, the objective indicator score related to housing choice was very low. This result also indicated that the 'cultural adequacy' was not objectively adequate as most of the households did not choose their house. Isa and Jusan (2012, p. 192) have stated that "with users' participation, users will be adequately informed on their project and their opinions and advice will be considered at the appropriate period towards better project successfulness". The implication that arises from this is that, in order to achieve an effective and adequate social housing policy in Oman, there should be a clear system by which the beneficiaries of social housing units can participate in the social housing delivery system.

In assessing the contribution of the living space indicator, which considers the house to be adequate if the number of people in each bedroom is two or less, this indicator contributed by 600 points whereas the maximum possible points was 1640. This result ranked this indicator as the fourth least influential indicator in terms of its contribution to the overall objective housing adequacy scores in the study area (after the housing choice, maintenance, and accessibility indicators). Around 63.5 per cent of the surveyed social housing units had an average of more than two persons in each bedroom while only 36.5 per cent had on average two persons or less in each bedroom. In terms of the UN-HABITAT standard of adequate living space of housing, (see Table 4.2) most social housing units were inadequate in regard to this indicator. This is not surprising because the standard housing policy is that social housing units in Oman which were built before 2013, were provided with only two bedrooms when the household size was eight persons or less. Policy makers confirmed this during the interviews.

Figure 6.11 illustrates this finding by showing that 49.2 per cent of the houses have two bedrooms. The average household size amongst the households interviewed in the study area was 7.1. This indicates that a two bedroom unit may not be adequate for many families. In fact, the average Omani household size (eight in a house) is close to the average household size in the study area (NCSI 2014a). Therefore, the issue of inadequate space available in the social housing units provided in the social housing program should be considered during their design.

Figure 6.11: The percentage of the bedroom numbers in the study area
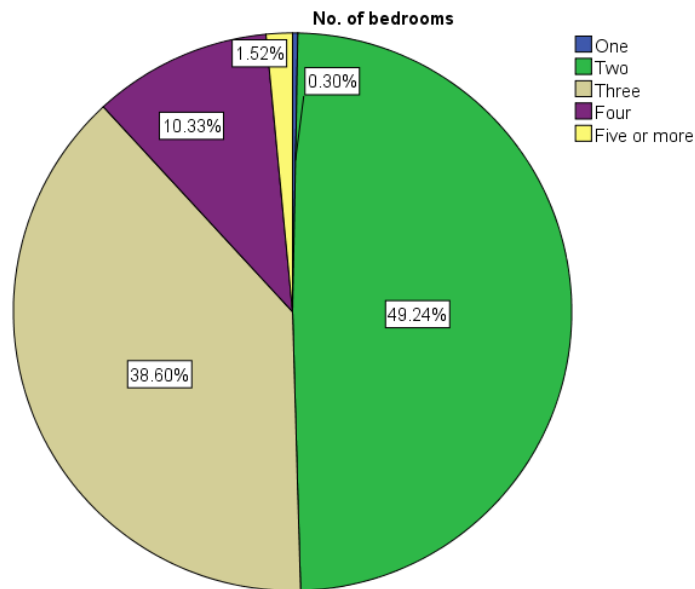
Examining the objective indicator scores on Table 6.1 also indicates that the sewerage system network does not contribute significantly to the overall indicator score: it contributed only 600 points while the possible maximum indicator score was 1625. This result is as would be expected because many housing units in Oman are still using the tanker system rather the sewerage network system as was mentioned in Chapter Four. The result here indicated that 63.1 per cent of the respondents stated that their houses were not connected to a sewerage network system while only 36.9 per cent claimed that their houses were connected to a sewerage network system. Figure 6.12 shows figures for the current sewage removal system and it seems that most of the units (56.95 per cent) are connected to septic tanks. In fact, these tanks are built under the ground and households have the responsibility of paying for the removal of waste water by sewage trucks. The policy makers confirmed this responsibility in the interviews (Ministry of Housing officials, interviews, September 2013).

Figure 6.12: The current sewage removal system in the study area

Current sewage removal system

Legend:
- Network system
- Tanker
- Other

39.70%
56.97%
3.33%
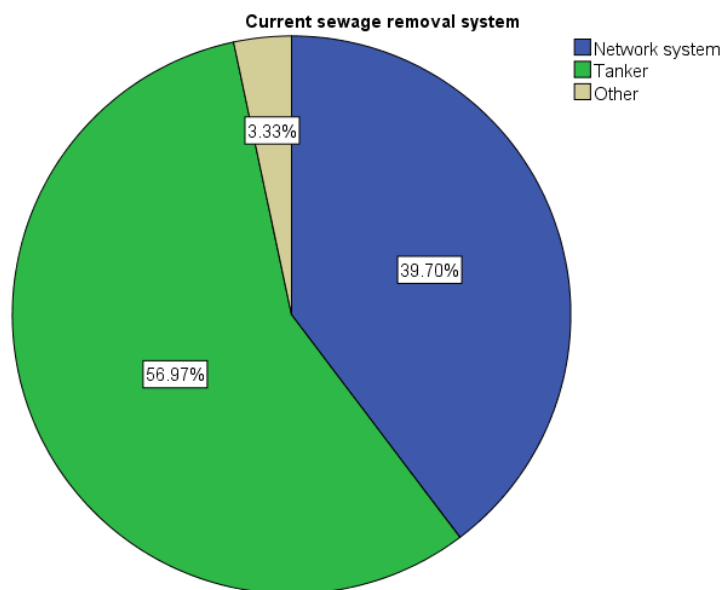
The above result explains why this objective indicator had such a low relative contribution to the objective housing adequacy with only 36.9 per cent from the possible maximum indicator score. Policy makers in the interviews claimed that whether or not the social housing units are connected to a sewerage system depends on the location of the social housing units in the different cities. The majority of them stated that this service is connected in some places in Oman but not in many others and if this service is already available in the location of the proposed project the social housing units will be connected. The implication here is that the external services available in areas should be assessed before building such houses (or even in choosing their location) as that will help to create units connected to a good quality sewerage system.

Next after the sewerage system network indicator score was the drinkable water network indicator; this contributed 695 out of 1645 points. The result shows that around 58 per cent of the respondents stated that their houses were not connected to a drinkable water network when they obtained them and only 42 per cent of them stated that their houses were connected. The current other main sources of drinkable water in the study area, as the result shows, are from water collection points in which the water is delivered to houses by using water tanker trucks, from Falaj water, from a well, and by buying bottled water. In other words, only 42 per cent of households living in social housing units are receiving piped drinkable water. That means a high percentage do not reach the UN-HABITAT standard of housing adequacy in which the availability of a drinkable water network is used as an indicator. That explains why this indicator contributed with only a low score.

The overall score was only 42 per cent of the possible maximum indicator score. This implies that the basic services such as a drinkable water network are required to be connected during the delivery of the social housing units to best achieve adequate housing with adequate services.

The health facility location indicator shown in Table 6.1 contributed some 51.5 per cent of the possible maximum indicator score; it obtained 820 out of 1590 points. Comparing this objective indicator score with the six other indicators explained above, shows that this indicator had the highest score as its contribution was more than the half of the possible points. None of the other six indicators mentioned above scored more than half the possible score. The measure to assess this indicator in this study was that the house should be located within two kilometres of the nearest hospital or health centre. The results showed that a high percentage (51.6 per cent) of the social housing units were located within two kilometres of the nearest hospital or health centre. This result was also supported in the interviews where many policy makers stated that the Ministry of Housing takes into consideration the location of health facilities during the planning for the social housing units' locations (Ministry of Housing officials, interviews, September 2013).

The measure that was used in relation to the durability of the housing structure to assess the habitability housing component in this study was 'housing that is built in compliance with building codes'. The result in Table 6.1 shows that the objective indicator of this score contributed with 57.5 per cent from the possible maximum indicator score. A high percentage (57.7 per cent) of the household heads who were aware of the compliance status of their house confirmed that their house was built in compliance with building codes, but 42.3 per cent of them stated that their house was not built in compliance with building codes. This result ranked the housing structure objective adequacy score as the fifth-best indicator that contributed strongly to the overall objective housing adequacy indicator. Applying the UN-HABITAT indicator of housing structure durability emphasises that 57.7 per cent of the surveyed social housing units were adequate in regard to this indicator.

Following this indicator was the connection of the social housing units to paved roads which was used in this research as an indicator that addressed the 'services provided' component. This indicator contributed with 61.6 per cent from the possible maximum indicator score; it obtained 990 out of 1605. This result ranked this indicator in the fourth-best indicator that contributed to the overall objective housing adequacy indicator. The possible explanation for such a strong contribution is that most social housing units are provided as projects in which the roads are

provided; the majority if the policy makers indicated that this was the case in their interviews (Ministry of Housing officials, interviews, September 2013). This argument was also supported by the result of the study where 61.7 per cent of the surveyed social housing units were served by paved roads.

With regard to the availability of a title deed to the house, this indicator contributed with 1040 points out of a total 8970 points. That ranked this indicator in the third top position in terms of its contribution to the overall objective housing adequacy score after the mosque location and housing cost indicators respectively (see below). The results of the study showed that 37 per cent of the respondents stated that they do not have a title deed and the remaining 63 per cent have a title deed. Generally, only 6.1 per cent of the participants had spent more than 10 years in their housing and the remaining percentage had spent less than 10 years. The interviewed policy makers, on the other hand, stated that beneficiaries of the social housing units are provided with a title deed for their houses only after they have lived in the house for ten years.

Thus, there is a conflict between the two results, (where 63 per cent of the household heads of the social housing units claimed that they do have a title deed). The apparent conflict between the two results can be explained in terms of differential understanding of what is meant by a 'title deed'. According to the policy makers who were interviewed, there are two forms of title deed that are provided by the Ministry of Housing to the residents of social housing units; 'contract' and freehold 'free title deed'. A contract is provided during the time of allocating the house to the residents in which it prevents them from renting out their house or from selling the house. Whereas, the title deed is provided only after ten years and allows them to rent or sell their housing unit (Ministry of Housing officials, interviews, September 2013). As far as both forms secure the residents' right to have the house, some residents interviewed seem to feel that there is no big difference between the two forms and thus they stated that they have a title deed although they have a contract only. The implication here is that having the contracts should enable them to rent or sell the house. The policy implication is that there is a need to clarify the term of title deed and its legal implications for the residents so they have clear knowledge about their rights in selling their houses.

With respect to the location of the mosque or the nearest place of worship, this objective indicator score contributed the most to the overall adequacy score after the housing cost (see below). The result of the study showed that this indicator contributed with 1200 points where the possible maximum points were 1610. In other words, this indicator contributed with 74.5 per cent from the

possible maximum indicator score as was shown in Table 6.1, so that 74.5 per cent of the respondents stated that their housing units are located within 400 metres (or five minutes' walking distance) of the nearest mosque and only 25.5 per cent of them stated that their houses were not located within that distance. A possible explanation for this result is that most social housing units are built as integrated projects in which mosques and public halls are mostly provided too, according to many of the policy makers who were interviewed for this study (Ministry of Housing officials, interviews, September2013).

The indicator that contributed the most to the objective housing adequacy measure for the social housing surveyed was that of housing cost. The objective indicator score for this indicator was the same as the possible maximum score; 1650 points. The reason for this high score is that the social housing units in Oman that are provided under the Residential Units Program are offered by the Omani Government free of charge. The recipients pay nothing for their housing. Therefore, the house units sampled got the full five points on the 5-point scale because of this and hence this indicator achieved the highest score of all the indicators. This result was reinforced by the social housing policy document in Oman (Ministry of Housing 2011) as well as the policy makers in the interviews where they confirmed that the Residential Units Program offers social housing units, for eligible Omani people, free of cost (Ministry of Housing officials, interviews, September 2013). Comparing this result with the UN-HABITAT criterion of affordability (which is that the household monthly housing payment should not exceed 30 per cent of the household monthly income), the sampled social housing units were totally affordable.

In summary, the results presented in this section show that indicators related to presence of a wheelchair ramp (accessibility), the maintenance required, house choice, the adequacy of living space, sewerage system network, and drinkable water network have relatively low objective indicator scores (on the basis of standardised results, where responses of 'Don't know' are excluded) and, hence, contributed least in the overall objective adequacy score. All these six indicators contributed with less than 50 per cent of their possible maximum score. On the other hand, health facility location, structural condition, connection to paved road, title deeds, mosque location, and housing cost indicators have high objective indicator scores and, thus, contributed most to the overall objective adequacy score. These indicators contributed with more than 50 per cent of their possible maximum score.

It is therefore suggested that the socio-economic characteristics of the households (such as whether a household includes people with a disability) and the number of people in each house should be considered during the design of such houses. Moreover, although the social housing units were more than affordable and most of them were built in compliance with building codes, 90 per cent of these houses required maintenance and major repairs. There are two sets of implications here for the Ministry of Housing. One is that the Ministry needs to continue its efforts after delivering the units to include undertaking the required maintenance. Although the Ministry maintains the houses for 12 months after occupation the result of this research indicated that this period it not enough in the provision of adequate housing. Otherwise, the quality of the structure of this housing may suffer over time as low income people do not have the ability to pay for the maintenance or the skills to do it themselves. The second is that the Ministry needs to pay greater attention to the location of proposed housing areas before the housing is built, especially in relation to the networked services such as the sewerage system and piped drinkable water supply.

6.4 Subjective Housing Adequacy

The thesis has already shown the characteristics of the respondents, the objectively assessed adequacy of the social housing in the study area and the contributions of the twelve indicators to assessment of that overall objective housing adequacy. This section shows the subjective adequacy of these units. The main difference between the objective and the subjective measures here is that in the subjective assessment the participants were asked to give their own, subjective opinions of the adequacy of their housing, using a five-point Likert scale from one to five where 1 = very inadequate, 2 = inadequate, 3 = neutral, 4 = adequate, and 5 = very adequate.

In the subjective evaluation of the housing, two measures were used to ensure the accuracy of the results. The first measure is called the individuals' overall subjective adequacy score (ISAS). The ISAS represents the summation of individual respondents' scores on all the twelve subjective housing adequacy indicators. The subjective adequacy here was measured by using the twelve indicators, and each of the indicators was given an equal weighting (see Figure 4.3). The second measure is called the overall subjective housing rate (OSHR). The participants were asked to rank the overall adequacy of their housing using a five-point Likert scale from very inadequate to very adequate. In other words, there was a separate question in the survey to measure the overall subjective adequacy of the housing itself by asking the opinion of the participants. Thus, the difference between the first (ISAS) and the second measure used (OSHR) is that in the first the score was calculated by amalgamating the individual scores from the twelve items that were

assessed, while for the second concept the score was allocated by the participants as a single, overall rating.

Figure 6.13 represents the individuals' overall subjective adequacy scores (ISAS) on a scale with values from 12 (the lowest possible score) to 60 (the highest possible score). To more easily interpret the results obtained from the questionnaires, an adequacy index was adopted as a framework for this study where the scores were grouped into five categories with scores of 12-21 (very inadequate), 22-31 (inadequate), 32-41 (neutral), 42-51 (adequate), and 52-60 (very adequate). These categories were classified based on the possible lowest subjective adequacy score, the possible highest subjective adequacy score, and the range in each category between the two extremes. The results in Figure 6.13 show that 9.5 per cent of the residents rated the housing as very inadequate, 37.4 per cent indicated that it was inadequate, 37.4 per cent were neutral about their housing, 14.3 per cent felt that their housing was adequate, and only 1.5 per cent perceived it as very adequate.

Figure 6.13: The individual overall subjective adequacy score with five categories
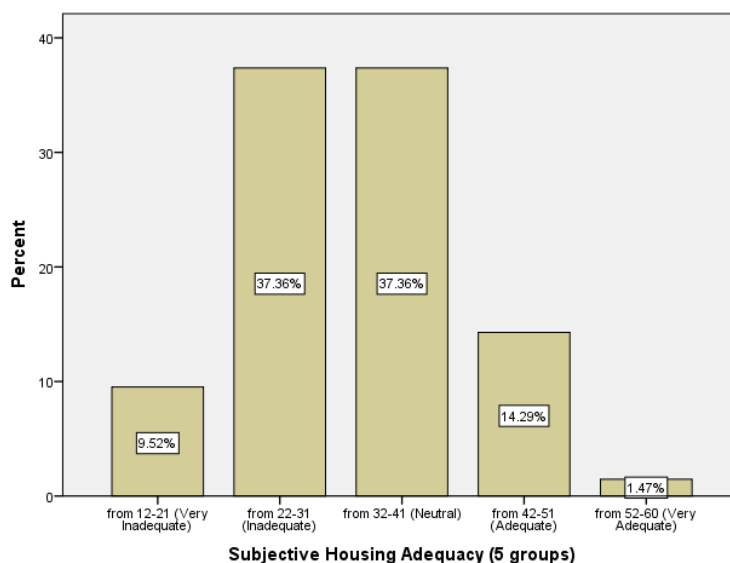
To summarise the results, the very inadequate and inadequate categories were combined into one category that represents low housing inadequacy while the very adequate and adequate categories represent the subjectively higher adequacy of the house (see Figure 6.14). The result shows that almost half of the surveyed people stated that their house was inadequate to some degree and only 15.8 per cent of them perceived their house as at least adequate.

Figure 6.14: The individual overall subjective adequacy score with three categories
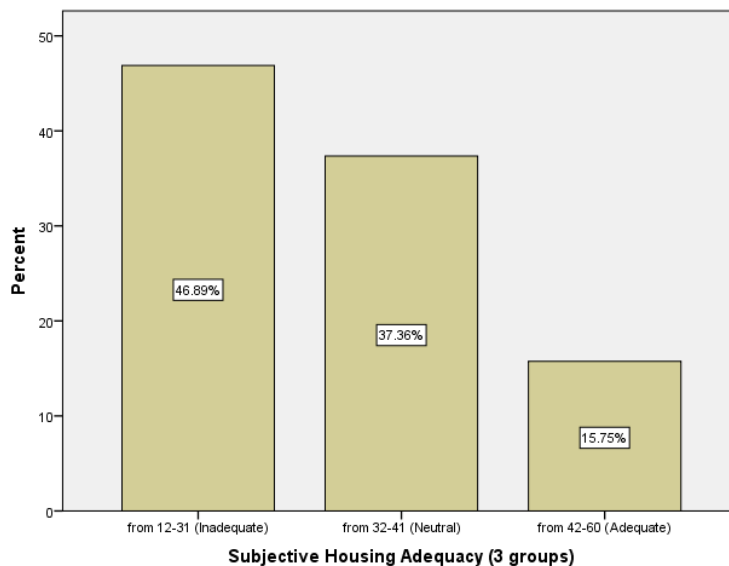
To measure the internal consistency or the reliability of the above scale, the study used Cronbach's Alpha. Cronbach's alpha is a statistical test that measures how well a set of variables or indicators measures a single, one-dimensional latent aspect. The items or indicators should all measure the same thing, so they should be correlated with one another. In general, Cronbach's alpha increases when the correlations between the indicators increase. Usually in the social sciences, the bench mark for good reliability is greater than 0.70. In this study the Cronbach's Alpha was 0.778 as is shown in Appendix 10. Thus, there is a good reliability within the scale. This implies that the indicators used in this research seem to be well correlated in representing the concept of housing adequacy.

Investigating the overall subjective housing rate (OSHR), shows that a high percentage (41.3 per cent) of the residents stated that their housing unit was inadequate, 25.7 per cent were neutral, while 33 per cent of them rated their housing as adequate. Hence, there is general consistency amongst the residents in their subjective views about the inadequacy of the social housing. The research found that although there were two different methods to measure the subjective adequacy of the units the results were almost the same. In the first method, the respondents rated twelve indicators that represent different components of adequacy and the sum of the scores was calculated. In both methods a high percentage of the units were assessed subjectively as inadequate. That is, many of the households perceived their housing as inadequate.

This finding suggests that the indicators used in this study to measure the adequacy may reflect or relate to the concept of housing adequacy used among occupants. To support this argument a test was undertaken to measure the association between OSHR and the individuals' overall subjective adequacy score (ISAS) which represents the sum of the twelve indicators ($x^2=31.757$, df= 4, P≤.000). A Cramer's V test was used to measure the strength of the association (Rea & Parker 1992) and the result indicates that there is a strong relationship (Cramer's V= 0.242) between these two measures. This implies that the indicators that were used in this study to measure the adequacy of the housing reflect the general rating of housing adequacy used among participants. This ensures that OSHR result can be used to verify the data collected for the ISAS. Therefore, it is suggested that the twelve indicators used in this study can be considered as suitable indicators that could be used in other locations of social housing in Oman to measure the adequacy of such housing. The strength of using the twelve detailed indicators rather than just the single assessment of adequacy by the household head is that it is possible then to assess the impacts of the various measures that underpinned the indicators on the households' perceptions. This will provide a powerful analytical tool that can also be linked to effective policy recommendations. So although the two measures reinforce one another there is considerably greater richness of analysis available through the use of the twelve indicators. A detailed analysis of the twelve variables will be provided in the following sections.

6.5 Contributing Indicators to Subjective Housing Adequacy

The previous section presented the overall subjective adequacy of the entire sample of housing units. This section will explain the contribution of each of the twelve indicators to that overall subjective adequacy (see Table 6.2). The subjective indicator score (SIS) was used in this research to show such contribution. The SIS represents the sum of the scores given by all the respondents to each individual subjective indicator. The five-point scale results were grouped into three categories (inadequate, neutral, and adequate). Doing this assessment will help to identify the indicators that have the greatest and the least impact on the overall subjective indicator score, based on householders' own views about the adequacy of their housing.

Table 6.2 shows the increasing order of the contributions of the indicators to the overall subjective housing adequacy. Note that the scores have been standardised to take account of the different number of responses relevant to each indicator (the lowest was 317, the highest was 329). Examination of Table 6.2 reveals that of the twelve housing indicators drawn from the seven

components (the legal security of tenure, affordability, the services provided, habitability, accessibility, location, and culture adequacy), the availability of the wheelchair ramp has the lowest indicator score of 618 (the possible maximum score for this indicator was 1610 points). Thus this variable contributed least to the subjective housing adequacy. This indicator represents the accessibility housing adequacy component of the UN-HABITAT indicators of adequacy.

Table 6.2: The contribution of the SIS in the overall subjective housing adequacy

Subjective Indicator		Number of respondents for that indicator	Subjective indicator score (SIS)	Possible maximum indicator score	Percentage from the possible maximum indicator score	Housing adequacy component
1	Wheelchair access	322	618	1610	38.4	Accessibility
2	Ministry maintenance	322	665	1618	41.1	Habitability
3	Title deeds	326	708	1630	43.4	Legal security of tenure
4	Living space	329	789	1645	48	Habitability
5	Structural condition	327	803	1635	49	Habitability
6	House choice	322	912	1618	56.5	Cultural adequacy
7	Drinkable water	318	915	1590	57.5	The services provided
8	House cost	320	939	1600	58.7	Affordability
9	Sewerage system network	322	954	1618	59	The services provided
10	Health facilities location	326	985	1630	60	Location
11	Road network	317	1058	1585	66.7	The services provided
12	Mosque location	325	1235	1625	76	Location

Figure 6.15 shows the overall opinion of the participants in regard to the accessibility indicator. Most occupants (75.1 per cent) stated that the accessibility of the entrance of the house was inadequate, 13.3 per cent were neutral about this indicator, and a small percentage (11.5 per cent) of

them indicated that wheelchair access was adequate. Findings in the earlier Section 6.3 also found that the accessibility indicator is the least significant objective indicator because it contributed least to the overall objective housing adequacy. Thus, this indicator was the least important indicator that contributed to the overall housing adequacy both in objective terms and subjective terms. The possible explanation here is that the inadequacy of the objective side, where only 4.9 per cent of the houses were provided with a wheelchair ramp, may have a negative effect on peoples' view about the subjective adequacy of the issue. In fact, during the site visits which were made by the researcher it was noticed that most of the social housing was provided with a stair at the entrance, even for one storey houses. That means that the house is not accessible for disabled people in wheelchairs or with mobility impairment. The implication here is that access to the house by mobility impaired people is not given a high priority in the design of the houses.

Figure 6.15: The participants' view of the wheelchair access indicator
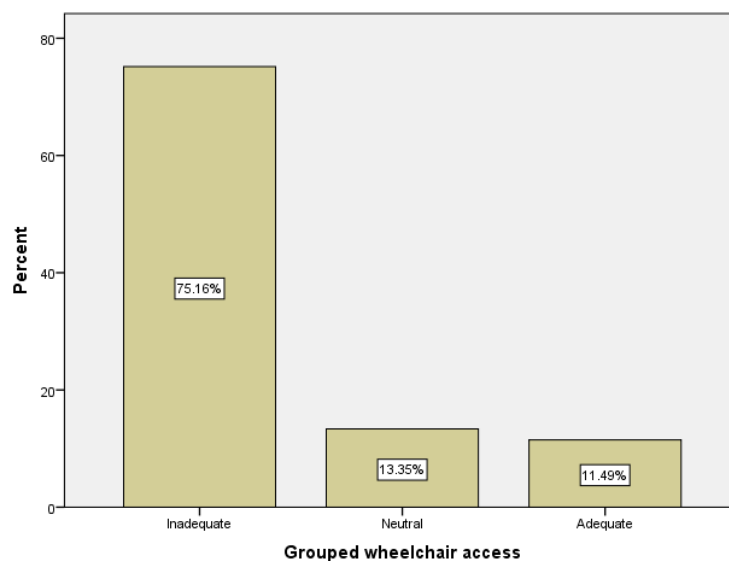
The next lowest of the subjective indicator scores was the ministry maintenance. This indicator measures the habitability housing component in the UN-HABITAT indicators. The result of this current research shows that this indicator contributed only 665 points whereas the possible maximum indicator score was 1618. Indeed, 71.1 per cent of the participants stated that the maintenance that was provided by the Ministry of Housing was inadequate (see Figure 6.16). This result was also supported by another finding in this research where 76.6 per cent of the occupants indicated that the ministry maintenance is one of the main issues which needed to be changed.

Figure 6.16: The participants' view of the ministry maintenance indicator
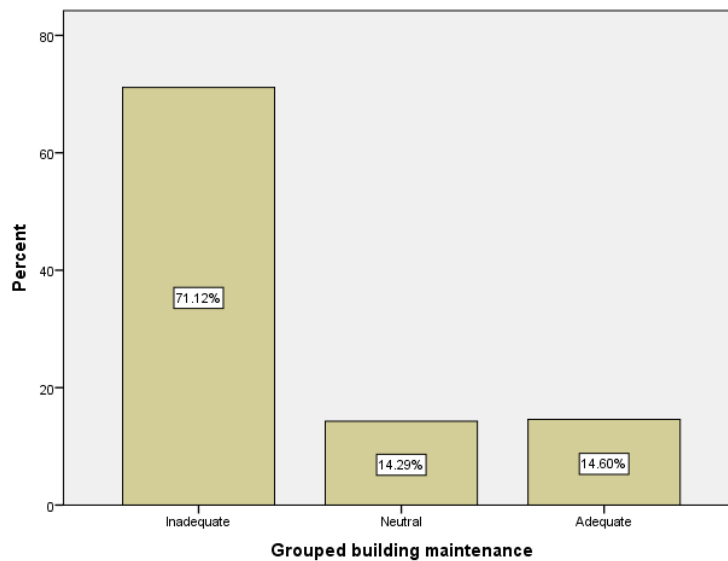
These two findings are consistent with a study done in Oman by Rahman, Al-Harthy and Al-Arifi (2002). In that study a high percentage of the participants (89 per cent) claimed that maintenance is a major problem facing them in Jibrin (in Al Dakhiliya Governorate, Wilayat Bahla). The researchers found that "no office is maintained in the projects to take care of the management aspects like repayment, services, repairing, extension and modification, cited by 86 per cent of the respondents in Jibrin as a problem" (Rahman, Al-Harthy & Al-Arifi 2002, p. 481). The findings are also consistent with other studies that have been carried out in other developing as well as developed countries (e.g. Jiboye 2009; Ibem & Amole 2011; Ibem, Aduwo & Uwakonye 2012; Morton, Allen & Li 2004; Mukhtar 1997; Westfall 2010) indicating that the maintenance issue was a major source of negative views from occupants living in social housing. This result is expected because, according to the policy makers who were interviewed and the policy document, the Ministry of Housing is responsible for the social housing maintenance for one year only (Ministry of Housing officials, interviews, September 2013). After that period the maintenance of the housing is the responsibility of the occupants themselves. Generally, this regulation in the social housing policy in Oman may explain these findings as well as the finding in Section 6.3 where a majority of the participants (90 per cent) stated that their houses required major repairs or maintenance work. Connecting this finding with the earlier finding in Section 6.3 it can be concluded that the maintenance indicator is one of the lowest contributors (i.e. it is one of the most likely to be criticised as inadequate), both objectively and subjectively, to the overall housing adequacy in the

study area. That implies that the maintenance issue should be one of the main concerns of the Ministry of Housing in the provision of adequate social housing in Oman.

The next lowest of the subjective indicator scores was the title deed (taken to represent the legal security of tenure component of the UN-HABITAT indicators). It contributed with 708 points whereas the possible maximum indicator score was 1630. That ranked this indicator in the third lowest position in terms of its contribution to the overall subjective housing adequacy score (i.e. that it was the third most likely to be seen as inadequate). Interestingly enough, there is a discrepancy between the subjective and objective contributions of this indicator to overall housing adequacy. In the objective side, this indicator contributed with high score, where 63 per cent of the participants have a title deed. In other words, the security of tenure indicator seems to be objectively adequate in the study area. But subjectively it is not. A possible explanation for such a discrepancy is that under the social housing policy regulations the title deed, through the Residential Units Program, is provided for the resident after they have lived in the house for ten years, a fact that was supported by the policy makers who were interviewed. So in objective terms it is relatively easy for the households to obtain a title deed giving them security of tenure. However, the participants' views were concerned about the length of time taken to obtain the deeds. Around 65.3 per cent of the residents stated that the length of time required to obtain the formal title deed for the house was unsatisfactory. Therefore, there is a need to consider the 'title deed' term (because there may be different interpretations of the term by the residents and the government), and whether the idea of title deeds and the conditions under which title deeds are made available under the social housing policy are clearly understood by the residents,.

Ranked next after the ministry maintenance indicator was the living space, which was used in this research as an indicator that addressed the habitability component. To assess this indicator the participants were asked about the adequacy of the number of the bedrooms provided to them. The result showed that this indicator contributed with 48 per cent from the possible maximum indicator score; it obtained 789 points out of 1645. This result ranked this indicator as the fourth-lowest contributor to the overall subjective housing adequacy score (e.g. that it was the fourth least adequate measure of those explored in the research). To make it clear, the majority of those sampled (59.2 per cent) claimed that the number of bedrooms was inadequate, a tenth (10.0 per cent) were neutral, and a third (30.7 per cent) felt that the number of bedrooms was adequate. It was also observed earlier (Section 6.3) that this indicator had a low score on the objective side and was also ranked there as the fourth lowest indicator. A possible explanation of this is the large household size

as was shown earlier in this chapter: an average of 7.1 persons per house. The fact that almost half (49.2 per cent) of the houses have only two bedrooms clearly impacts on this result. To support this argument 72.4 per cent of the participants claimed that the number of the bedrooms needed to be changed. One of the occupants said that "social housing policy in Oman, to be effective policy, should consider the space that is provided in each house" (Questionnaires with households: field survey, 2013). In general, these findings are consistent with other studies carried out in countries with large families and households such as Oman and Saudi Arabia (e.g. Mubarak 2010; Rahman, Al-Harthy & Al-Arifi 2002). The implication here is that the number of bedrooms available in the house influences the participants' views about the adequacy of the living space. Therefore, the option of having more bedrooms needs to be provided to meet the needs of the residents.

Following the living space indicator was the 'structural condition' sub-component which was also used in this research as an indicator that addressed the habitability component. This indicator contributed with 49 per cent from the possible maximum indicator score; it obtained 803 out of 1635 points. This result ranked this indicator as the fifth lowest. More than half (53.5 per cent) of the residents stated that the structural condition of their house was inadequate, 25 per cent were neutral, and only 21 per cent of them stated it was adequate. Hence, it is obvious that a high percentage have a negative view about the structural condition of the house although a great percentage of them (57.7 per cent) confirmed that their houses were built in compliance with building codes. Connecting that to the interviews, many policy makers stated that the social housing in Oman is built under the supervision of qualified consultants and engineers to ensure a good quality structure. This result could lead to an argument that the condition of such units, although it was objectively adequate in accomplishing the UN-HABITAT indicator and is seen by policy-makers as being built under satisfactory quality assurance mechanisms, is still far from being adequate according to the residents. A possible explanation for such subjective inadequacy could be the current condition of the housing stock itself where much of the social housing in the study area had cracks inside as well as outside the building. This was noticed by the researchers during the site visits and Figure 6.17 shows that situation. In addition, many participants (67.5 per cent) stated that there is a need to make changes to the structure of their houses. The report by Alrahbi (2011), which was done to evaluate the Alrahba social housing project in Al Dakhiliya Governorate, also confirmed this situation. These findings imply that there is a wide gap between what the policy makers expected in terms of the adequacy of the structure and what the residents felt they actually have in these houses.

Figure 6.17: Cracks on social housing unit's walls and doors in Wilayat Nizwa

Source: Field survey (2013)

The house choice indicator, which measures the 'cultural adequacy' component, contributed 912 points out of a maximum possible points of 1618. This result ranked this indicator as the sixth least influential indicator in terms of its contribution to the overall subjective housing adequacy scores. The result indicates that a reasonable percentage (41.3 per cent) of the respondents perceived the degree of choice they had about the house as inadequate while the remaining (23.3 per cent) and (35.4 per cent) were either neutral or felt it was adequate. It was also found earlier in Section 6.3 that this indicator had a relatively low contribution to the objective adequacy score, where almost two thirds of the occupants (69 per cent) stated that they were not offered a choice of houses to live in. The low objective contribution of this indicator may affect the residents' subjective views. Many other studies support this argument (e.g. Isa & Jusan 2012; Molin et al. 1996). Molin et al. (1996) have stated that choices are supposed to reflect residents' preferences and views. Their choice allows them to be involved in the policy itself. Moreover, Isa and Jusan (2012, p. 190) have claimed that "the involvement of users becomes vital where housing units are to be adequately occupied". In general, the involvement of the participants in the development of housing policies will allow them to construct and design their houses in a way that reflects their cultural identity as well as their needs (UNHRP 2003). Therefore, the policy implication of the above findings is that the Ministry of Housing should place more emphasis on community participation in order to achieve the aim of the social housing policy in providing adequate housing, if not in allowing them to help design the housing, then at least being able to offer them a greater choice in the house they are allocated.

The 'availability of piped drinkable water' indicator shown in Table 6.2 contributed some 57.5 per cent of the possible maximum indicator score; it obtained 912 out of 1618 points. In other words, this indicator contributed with more than the half possible points and therefore it had a comparatively strong influence in the subjective housing adequacy. The percentage of occupants who claimed that the water system that is provided to their houses (41.8 per cent) was inadequate was equal to the percentage of those who stated the provision of the water was adequate. The remaining occupants (16.3 per cent) were neutral. Thus, the participants, in regard to this indicator, were divided about the adequacy of the water system. Such diversity could be due to the variety of the sources of drinkable water in the study area. Other sources of drinkable water are water collection points, Falaj's water and having water from wells. This variation was shown in Section 6.3 where only 42 per cent of households living in social housing units are receiving water from the network while the remainder are still getting the drinkable water from other sources. This suggests that in order to provide adequate services, the social housing unit should be connected with the national network which is more desirable than the other unreliable sources of water. This recommendation was also suggested by Rahman, Al-Harthy and Al-Arifi (2002) when they claimed that there is a need to upgrade the standard of the services such as the water supply that are provided to the social housing units in Oman.

Examination of Table 6.2 also reveals that the cost of the house contributed more than half of the overall score, earning 939 points out of the possible maximum score of 1600 points. This indicator was used in this research to assess the 'affordability housing' component. The percentages of the residents who claimed the cost of the house was inadequate and neutral were 41.5 per cent and 20.6 per cent respectively. Although the social housing under the Residential Units Program is provided free of charge for eligible people, only around one third (37.8 per cent) of respondents stated that it was adequate. On the other hand, when the UN-HABITAT indicator of affordability was applied as an objective indicator, the conclusion was that these houses are more than affordable as the residents do not pay more than a third of their income to get access to the house. Therefore, the percentage of people who feel that the cost of the house was adequate should be higher than this result obtained from the survey.

A possible explanation for such a contradiction is that the people who live in social housing units are responsible for many other costs after they receive the unit. These costs, as was stated by the policy makers who were interviewed, include the furniture for the house, maintenance (after one year), and any other changes that are needed to be added or made to the house. These additional

costs may affect the residents' views about the affordability issue. To support this argument a high percentage of the occupants (66 per cent) claimed that they had spent additional money on the house since it was allocated to them, to do maintenance and make other changes such as building more rooms. In addition, around 40 per cent of those spent 3,000 OMR or more, which is a relatively high expense for low income people in Oman where their income does not exceed 400 OMR in a month (see Figure 6.18). Thus, although the social housing in Oman is affordable objectively the costs are still problematic for the residents as they are responsible for many other expenses. For this reason, it is suggested that the Ministry of Housing should take into consideration the economic situation of low income people and the kinds of on-going costs they have, to ensure the success of the housing policy in providing affordable housing.

Figure 6.18: Amount of money spent by the residents on housing
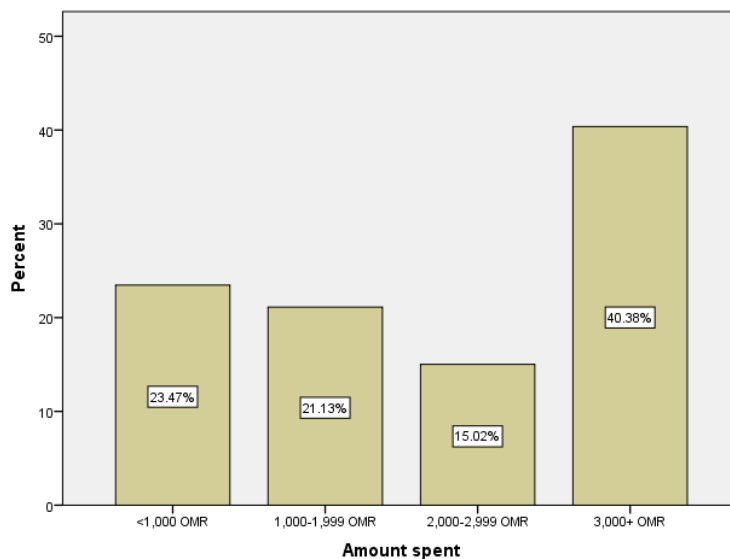
One of the indicators that was used to assess the 'services provided' component in this study was the sewerage supply. The result in Table 6.2 shows that this subjective indicator obtained 954 out of 1618 points, thus contributing 60 per cent of the possible maximum indicator score. Generally, around 46.9 per cent of the respondents stated that the provision of sewerage facilities was adequate, and a small percentage (12.1 per cent) were neutral about it. On the other hand, 41 per cent stated that it was inadequate. This result ranked this indicator in the best four indicators that influenced the overall subjective housing adequacy. Connecting that to the objective approach, as was discussed previously in Section 6.3, only 36.9 per cent of the occupants confirmed that their houses were connected to a sewerage network system. Thus, it seems that the absence of the sewerage network did not affect the peoples' view in regard to this subjective indicator. That is

because, according to the policy makers, social housing is connected with the sewerage network system if that system is available in the area; otherwise, there will be a local sewerage system provided in which the sewage is collected from the houses through pipes and then collected in a large tank that serves a group of houses (see Figure 6.19). This system is called an internal or local sewerage network and the Ministry of Regional Municipalities and Water Resources is responsible for providing such sewage disposal to suitable places. That may explain the above result and the high contribution of the sewerage network system to views about the adequacy of the housing.

Figure 6.19: Internal sewerage system in Wilayat Nizwa

Source: Field survey (2013)

With regard to the health facility location, this indicator contributed with 985 points where the possible maximum points were 1630. The result indicates that a high percentage (47.2 per cent) of the respondents claimed that the proximity of their houses to health facilities was adequate while smaller numbers (14.4 per cent) were neutral about access to these facilities. However, 38.3 per cent of the respondents felt that the location of their houses in regard to the health facilities was inadequate. That ranked this indicator in the third top position in terms of its contribution to the overall subjective housing adequacy score. Generally, this indicator contributed with sixty percent (60 per cent) from the possible maximum indicator score to the overall subjective adequacy. That is because earlier findings about adequacy as measured objectively and discussed in Section 6.3 indicated that the majority (51.6 per cent) of the social housing units were located within two kilometres of the nearest health centre or hospital. To support this argument 62.1 per cent of the participants stated that they do not want to change the location of their housing in relation to the

health facilities. This finding is consistent with the findings of Alndabi (2010). These results suggest that the Ministry of Housing is taking into consideration the health facility location during the planning for the provision of social housing units.

With respect to the road network, this subjective indicator score was the second highest indicator. This indicator contributed with 1058 points where the possible maximum points were 1585. In other words, it contributed with 66.7 per cent from the possible maximum indicator score as was shown in Table 6.2. Figure 6.20 shows that the majority of the participants stated that the provision of the road network is adequate, 14 per cent were neutral, and 28.7 per cent of them stated that it was inadequate. A possible explanation for this result is the previous finding in Section 6.3 where the majority (61.7 per cent) of the surveyed social housing units were served by paved roads. That was also found in Alndabi's (2010) research in which the connection of the social housing with roads was satisfactory to many participants. In addition, the policy makers confirmed that most social housing units are built as integrated projects in which internal roads are mostly provided (Ministry of Housing officials, interviews, September 2013). In supporting this claim, more than two thirds (71.5 per cent) of the households indicated that they do not want to change the current situation of their house's connection with roads. This implies that the social housing was generally provided with an adequate road network.

Figure 6.20: The participants' views about their housing connection with roads
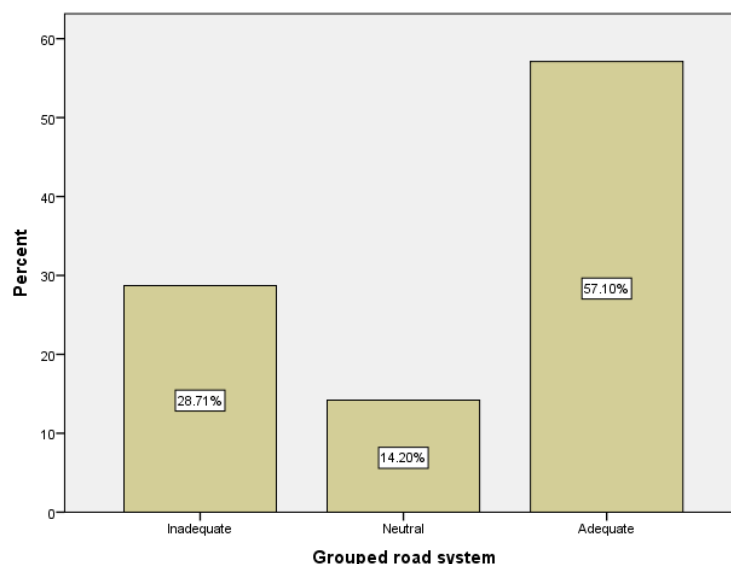
In contrast, the mosque location has the highest indicator score of 1235 and thus contributed most to the overall housing subjective adequacy in the study area (the possible maximum score for this

indicator was 1625 points). This indicator contributed with 76 per cent from the possible maximum indicator score. Figure 6.21 presents the overall opinion of the participants in regard to the mosque location. Most occupants (72 per cent) stated that the location of their houses in regard to the mosque is adequate, 6.7 per cent were neutral, and only 21 per cent of them said that this indicator is inadequate. Findings discussed in Section 6.3 also found that this indicator was one of those that contributed with a high percentage to the overall objective housing adequacy. Thus, this indicator contributed to the overall housing adequacy both objectively and subjectively. The possible explanation here is that 74.5 per cent of the surveyed housing units are located within 400 metres distance or less of the nearest mosque, and this may have a positive effect on peoples' views about the subjective adequacy of the issue. This claim is affirmed by the result that 71.8 per cent of the respondents stated that they do not want to change their location in regard to the mosque. This result is also consistent with the study by Ibem, Aduwo & Uwakonye (2012) where many people were satisfied with this indicator. This suggests that the Ministry of Housing provided the most adequate housing in regard to the mosque location as perceived by the users.

Figure 6.21: The participants' views about the mosque location
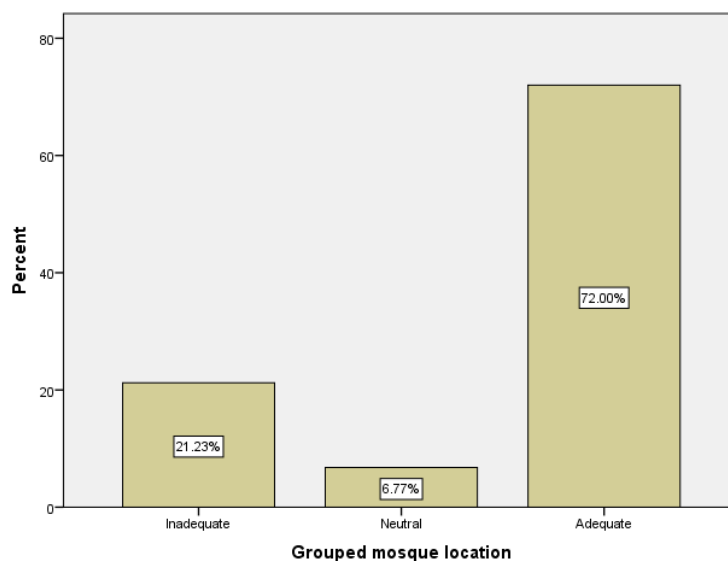
6.6 The Relationship Between Objective and Subjective Approaches as well as the Socio-economic Characteristics

This section now examines in more detail the relationship between the objective and the subjective measures of housing adequacy. Connecting the UN-HABITAT housing indicators with the

discussion above as well as the discussion of objective indicators in Section 6.3, this research concludes that there is some consistency in the results. The indicators which contributed least to the overall objective housing adequacy score are almost similar to the subjective indicators that contributed least to the overall subjective housing adequacy score. In both the subjective and objective approaches the accessibility and the habitability housing components contributed the least indicating that they were relatively less adequate in the study area. On the other hand, the indicators associated with the location, affordability, and the services provided housing components contributed most to overall housing adequacy. Therefore, it is important for the Ministry of Housing to upgrade the physical features of the existing housing units and determine ways to improve the design of the housing units. This will contribute significantly towards enhancing overall adequacy of the social housing in Oman.

In addition, based on the results obtained in Sections 6.2 and 6.4 it seems that there is a consistency between the results of the objective and the subjective housing adequacy measures. The result of the IOAS and the ISAS showed that more houses were rated as inadequate than were rated as adequate (see Figures 6.10 and 6.14). This research used the chi-square test to show if there is any association between these two scores. The result shows that there is a significant association ($\times^2 = 57.02$, df= 4, P≤.000). To measure the strength of the association, the Cramer's V test (Cramer's V= 0.420) was used. This indicated that there is a relatively strong relationship between these two measures.

The above results of the chi-square test and Cramer's V test indicated that houses that were classified as inadequate objectively also tended to be classified as inadequate subjectively. Conversely, units that were adequate objectively seem also to be classified as adequate subjectively. A possible explanation for that is that the objective adequacy of the housing influenced the perception of the residents and, hence, influenced their opinion about the subjective adequacy of their units. Other studies confirm this claim (e.g. Amerigo & Aragones 1997; Isa & Jusan 2012; Jiboye 2010; Molin et al. 1996). This implies that the actual situation of the housing influences the subjective adequacy. Together the two measures show the overall adequacy of such units. This implies that residents' views of the adequacy of their housing can be strongly influenced by the objective adequacy of that housing. If the housing stock and the supporting facilities are improved then residents' views of that housing will become more positive. This provides a powerful lever for housing policy-makers to improve residents'' responses to the housing provided for them.

The above result of the overall objective adequacy and the subjective adequacy indicates, at first glance, that there is no need to apply the two approaches in measuring the adequacy of houses, as the both approaches give one outcome. But after a close investigation in Table 6.1 and Table 6.2, this research refuted this statement. In Table 6.1 it was clear that the housing cost indicator was the top indicator that contributed positively to the overall objective housing adequacy score. On the other hand, this indicator contributed only by 58.7 per cent of the possible maximum indicator score to the overall subjective housing adequacy score. In other words, the housing cost was objectively affordable and adequate, as it was provided free of charge, but subjectively it was not adequate. One possible explanation for this finding is that there are other additional costs such as maintenance, as the Ministry of Housing maintains these social housing units only for one year after delivering them to the residents. This issue was discussed in more detail in the above section (Section 6.5) when it was clear that around 41.5 per cent and 20.6 per cent of the residents claimed the cost of the house was inadequate and neutral respectively and only around one third of participants stated that it was adequate. In other words, the objectively free houses were not subjectively adequate.

Therefore, this study found that using one approach is not enough to measure the adequacy of houses. The affordability issue which was shown above indicated that the subjective participatory approach is also required during such investigation. The implications here are that the UN-HABITAT approach, which was shown in Chapter Three in this research, cannot stand alone in measuring the adequacy of the houses. At the same time, the widely used satisfaction approach, which is currently used by many researchers around the world (e.g. Ibem & Amole 2011; Mohit & Azim 2012) is also not enough to judge the outcome of the adequacy of such social housing programs in providing adequate houses. These findings in this research about the housing indicators support this augment. The implication here is that the two objective standard approaches as well as the subjective participatory approach should be used in examining the adequacy of the houses.

Other studies (e.g. Isa & Jusan 2012; Kellekcia & Berköza 2006; Teck-Hong 2012; Ukoha & Beamish 1997) have identified that the socio-economic characteristics of the residents may also affect their views in regard to housing satisfaction and adequacy. Kellekcia & Berköza (2006, p.77) have claimed that "Individuals' views of residential areas and the physical and social features of the environment are influenced by their individual characteristics, life quality and other requirements". Thus, in order to clarify which factors had the greatest influence on the participants' views and evaluation about the units provided to them, a categorical regression analysis with an optimal scaling method was employed.

This statistical analysis helped to determine the relative contribution of each of the independent indicators or predictors on the total variance explained by the model. It was also used to understand which among the independent variables (the socio-economic characteristics of the residents and the objective indicators) are most related to the dependent variable. The individuals' overall subjective adequacy score was used as the dependent variable. The socio-economic characteristics of the respondents (gender, age, household monthly income, marital status, work status, education status), location of the social housing in the five cities, length of residency, spending extra money in maintenance, and housing type were used as independent variables. The twelve objective indicators were also used as independent variables except for the cost of the housing (which was excluded because it has an equal score for all the participants as the social housing units in Oman are provided free under the Residential Units Program).

The result of the regression (see Appendix 11) indicates that much of the variance in the outcome variable is explained by the regression model with Multiple R = 0.805, R Square value of 0.648, and the Adjusted R Square = 0.535. That means the regression model used explains about (0.648 x 100) 64.8 per cent of the variance in the subjective overall housing adequacy. The result (F=5.755, P=0.00) also implies that the result is statistically significant at P<0.005.

Table 6.3 shows the level of contribution of each independent variable in explaining the dependent variable of subjective adequacy. The result shows that of the 21 independent variables involved in this regression, eight were significant predictors of subjective housing adequacy. The indicators in order of importance are firstly the structural condition (one of the twelve objective indicators (Beta=0.296, F= 16.699, P value =0.000)). This indicates that the structural condition (compliance with the building codes) indicator is the strongest predictor of the subjective adequacy, and therefore a key factor in explaining subjective adequacy in this research. Next in importance are the living time (Beta=0.277, F= 11.140, P value =0.000), marital status (Beta=-0.236, F= 4.806, P value =0.010), household monthly income (Beta=0.229, F=7.469, P value =0.000), and living space (Beta=0.203, F= 9.748, P value=0.000). Others are connection to networked water (Beta=0.167, F=4.360, P value =0.015), whether they spent extra money on the house (Beta=-0.165, F=3.699, P value =.028), and the objective indicator of the housing choice (Beta=0.161, F=7.202, P value =0.001).

Indicators such as location (Beta=-0.171, F=2.426, P value =0.122), type of house (Beta=-0.085, F=.862, P value =.425), gender (Beta=-0.004, F=0.002, P value =.988), age (Beta=-0.158, F=0.961,

P value =0.329), work status (Beta=.169, F= 1.278, P value =0.282, education status (Beta=-.157, F=.485, P value =0.617), and the other objective indicators do not make a significant contribution to the prediction of the subjective housing adequacy.

Table 6.3: Regression coefficients of predictors of the individuals' overall subjective adequacy score

Indicators	Standardised Coefficients		df	F	Sig.
	Beta	Bootstrap (1000) Estimate of Std. Error			
Location	.171	.110	1	2.426	.122
Living time	.277	.083	2	11.140	.000*
Spend extra money	-.165	.086	2	3.699	.028*
Type of house	-.085	.091	2	.862	.425
Gender	-.004	.109	2	.002	.998
Age	-.158	.161	1	.961	.329
Household monthly income	.229	.084	3	7.469	.000*
Marital status	-.236	.108	2	4.806	.010*
Current work status	.169	.150	2	1.278	.282
Current education status	-.157	.225	2	.485	.617
Title deeds	.036	.065	1	.303	.583
Drinkable water	.167	.080	2	4.360	.015*
Sewerage system network	.050	.109	1	.206	.651
Road network	.104	.080	1	1.690	.196
Structural condition	.296	.073	2	16.669	.000*
Ministry maintenance	.036	.074	2	.243	.785

Indicators	Standardised Coefficients		df	F	Sig.
	Beta	Bootstrap (1000) Estimate of Std. Error			
Wheelchair access	.123	.096	2	1.634	.200
Health facilities location	.131	.084	2	2.443	.091
Mosque location	-.057	.088	2	.425	.655
House choice	.161	.060	2	7.202	.001*
Living space	.203	.065	2	9.748	.000*

Dependent Variable: Subjective Housing Adequacy

*Statically significant at P<0.05

The results in Table 6.3 above suggest that the view of subjective housing adequacy is strongly related to some of the socio-economic characteristics of occupants (particularly household monthly income and marital status), other independent variables (particularly the time they have lived in the house and whether they have spent extra money), as well as objective indicators (particularly the connection to networked water, the structural condition of the house, house choice and provision of living space). Different studies appear to be consistent with this finding in which these and similar factors can play a role in determining the level of occupants' satisfaction with their units (e.g. Ibem, Aduwo & Uwakonye 2012; Isa & Jusan 2012; Jiboye 2009; Mohit, Ibrahim & Rashid 2010). Therefore, these factors can be used to offer an explanation on households' opinions about the adequacy of their social housing. Thus, addressing these issues identified through the relevant variables should be of the first priority for housing providers in Oman in seeking to provide adequate social housing and in increasing the level of satisfaction of the residents with the housing that is provided for them.

6.7 The Overall Housing Adequacy

The previous sections explored the objective and subjective adequacy of social housing in Oman and the clear relationship between these two indicators. This section presents the overall housing adequacy (OHA) score, which is the sum of both the individuals' overall objective adequacy score (IOAS) and individuals' overall subjective adequacy score (ISAS).

Sections 6.2 and 6.4 showed that the lowest possible objective adequacy score is zero points, while the possible lowest subjective adequacy score is 12 points. Thus, the lowest point in the overall housing adequacy score is (0+12) = 12 points. The maximum points objectively and subjectively were 60 points for each score. Therefore, the maximum points for the overall score will be (60+60) = 120 points. That means the overall scale will spread over the values from a minimum of 12 to a maximum of 120 points. To determine the percentage of housing that has a higher score and thus can be described as being more adequate and housing that has a lower score and thus can be described as less adequate there is a need to create a half-way score. The half-way point will be 66 and because the actual score of 66/120 represents a very low percentage of the overall results (1.2 per cent) there is really no need to have three scenarios, as was done for the objective scale. In other words, there is no material difference in allocating that 1.2 per cent to either the lower or the higher adequacy section.

Figure 6.22: Overall housing adequacy
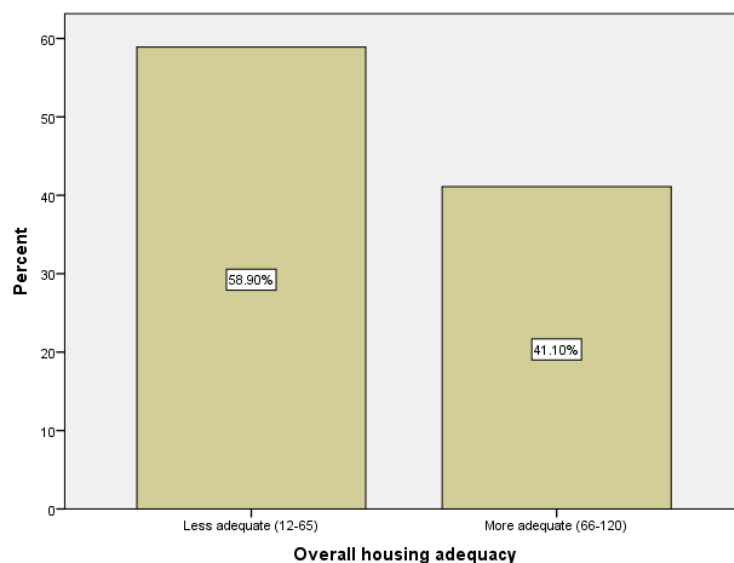
This approach is justified from observation of Figure 6.22 and Table 6.4, which summarise the overall housing adequacy scores. The lowest point, the highest point, and the cut point are displayed. In addition, the percentages of the houses that were classified as less adequate and more adequate are shown in the table. From Table 6.4 and Figure 6.22 it can be seen that there is little difference to the overall conclusions by having a separated cut point. In fact the percentage of the houses that were scored as more adequate was almost the same if the cut point was detached from the more adequate category.

Table 6.4: Overall housing adequacy

Adequacy category	Cut-off points	Percentage
Less adequate (Bottom half)	12-65	58.9
More adequate (Top half)	67-120	39.8
In the cut point	66 points	1.2

The conclusion which can be drawn here is that around 59 per cent of the evaluated houses were classified as less adequate and almost 41 per cent of them were classified as more adequate in terms of the overall (subjective and objective) evaluations. In other words, more houses in the study area were categorised as less adequate than were categorised as more adequate. Around half of the respondents stated that there are weaknesses or problems with the current social housing in Oman. The implication here is that there is a need for policy modification to be able to achieve the aim of providing adequate housing.

6.8 Summary

This chapter has examined the demographic and socio-economic characteristics of the respondents living in social housing. It assessed the gender, household size, age, and respondents' duration of residence in their houses. It also examined the marital, educational, and work status of the occupants as well as their monthly income. In terms of providing shelter for social housing recipients the policy is effective; however the adequacy of the housing is somewhat problematic. Objective evaluation of the adequacy of the Residential Units Program using the relevant indicators found more houses were classified as less adequate than were assessed as more adequate. The chapter also showed the results of occupants' rating of the levels of adequacy of their housing. This evaluation was called the subjective adequacy because the same twelve indicators were examined by taking the residents' subjective views into account. The result indicates that the majority of the respondents felt that their housing was inadequate to some degree. Therefore, the study shows that in the overall evaluation of housing adequacy (combining both objective and subjective approaches) there were more houses that were classified as less adequate than there were houses that were classified as more adequate. Indicators such as accessibility, living space, and the structural condition of the house were the indicators that contributed negatively to both assessments of adequacy while indicators of location and the services provided contributed positively to both the

objective and subjective adequacy ratings. These findings indicate that more consideration should be given to social housing in regard to features as well as the design of the house itself, to participation of residents in the design and selection of houses, and to a lesser extent to the provision of important supporting services.

Chapter 7: Current and Future Social Housing Demand and Supply

Before going into details about the social housing demand/supply in Oman, it is good to recall that the main aim of this study is investigating the effectiveness of the social housing policy by doing two types of evaluation; social housing adequacy and social housing supply. The previous chapter examined the adequacy while this chapter deals with the second type of evaluation. In other words, is the Ministry of Housing providing sufficient housing to low income people now and into the future? This chapter will address this question by examining the current supply of social housing, the waiting list, and the government's budget allocation for future social housing in Oman.

The data used in this chapter is derived from a range of sources including in-depth interviews with policy makers working in the Ministry of Housing. Other sources of information are statistical data from the 2010 General Census of Population, Housing and Establishments, existing documents and legislation about the social housing policy, and published and unpublished reports of the Ministry of Housing in regard to the waiting lists. Here it is worth mentioning that the interviews with policy makers were done in 2013; at the time of fieldwork. But the data which is presented in this research in regard to the number of social housing units, number of beneficiary households, and number of applications in the waiting list are till the end of the year 2014. That is because policy makers later provided the researcher with the new available data through emails and phone.

The chapter explores five main topics. The first section (Section 7.1) investigates the current supply of the social housing provided through the three different programs: the Residential Units Program, the Housing Assistance Program, and the Housing Loans Program. Knowing the numbers of units that have been provided until now, will assist in understanding the general trend of the social housing supply in Oman.

The second section of this chapter (Section 7.2) views the administrative delivery procedures and the budget allocations for the social housing programs from the Omani government. The third section (Section 7.3) analyses the waiting list for social housing units for two programs only (Housing Assistance Program and Housing Loans Program) as no waiting list is available for the Residential Units Program. Examining the waiting list will help to understand the social housing policy effectiveness in ascertaining whether or not it is providing enough housing for the current demand. Moreover, identifying the current demand for social housing will help in estimating the future demand for housing to meet the low income needs. As it was mentioned in Chapter Two of

this study, Oman follows National Five-Year Development Plans. Therefore, the supply of social housing units as well as the budget allocation for social housing is presented in this chapter for each five year plan period. This information allowed a comparison between the three programs in terms of both the actual supply and the budget allocation.

Section 7.4 presents an analysis of the future demand for social housing based on the projection of total population numbers. This analysis enabled the researcher to answer the second research question; to what extent has the social housing policy in Oman provided enough housing for likely future housing demand. The last section (7.5) summarises the findings of the chapter with some recommendations in regard to social housing supply.

7.1 The Current Supply of Social Housing

The availability of housing is one of the main problems that face low income people in many countries around the world. Various governments in developed and developing countries have attempted to solve this issue by initiating mass housing programs, especially during the 1950s, 1960s, and 1970s (Chua 1991; Heath 2014; Olotuah & Bobadoye 2009; Omar 2003; UNCHS 1996). Along with many other countries, the Omani Government has attempted to help poor and low income people by establishing its social housing policy in 1973. This policy offers social housing units to low income Omani people. The general aspiration of this policy is raising the living standard of the Omani poor families. This section presents how many households benefited from this policy until the time of this research (end of 2014) under each of the three programs. Presenting these numbers provides general knowledge of the current effort of the Omani Government in the provision of social housing supply.

7.1.1 The Residential Units Program

In 1973 the Residential Units Program was established and implemented as the first program in the social housing policy that aimed to support poorer Omani households to get access to housing. This program used to offer loans to two categories, but since the end of the 1980s it has offered social units free of charge. The two categories of people (as categorised at that time, 1973) were: low income people (whose income was not less than 30 OMR and not exceeding 75 OMR in a month) and middle income people (whose income was more than 75 OMR and not more than 200 OMR in a month) (Planning and Statistics Department 2011b). Thus, the very poor people who earn 30 OMR or less were not eligible for this program at that time. The regular monthly premiums were

deducted from the salary of the beneficiary for a period of twenty years in the case of low income and fifteen years for middle income people. The home ownership was given as soon as the beneficiaries repaid the loan. In 1977, these residential units were provided to these with annual incomes of 3,000 OMR. In 1997, all users became exempt from the remaining instalments on an order from His Majesty the Sultan, the president of Oman. They all, thus, gained home ownership at that time.

Since the 1970s many changes have been made to this program. One of the biggest changes is the transition from lending money to offering units free. Nowadays, it offers home ownership free of charge to low income Omani people with monthly incomes of 400 OMR or less (Ministry of Housing 2011). The program offers housing units only when and where His Majesty the Sultan orders it. The people who are offered the new units used to live in poor quality houses and in most of the cases these houses were far from each other. The building materials that were used were timber or metal sheets with no concrete columns in most of those homes. These poor quality houses were replaced by new residential housing units through this program. Figure 7.1 shows an example of such old private houses in Wilayat Al Mussanah (Al Batinah South Governorate) that were replaced by new units.

Figure 7.1: Example of poor quality private houses in Wilayat Al Mussanah that were replaced by new residential housing units
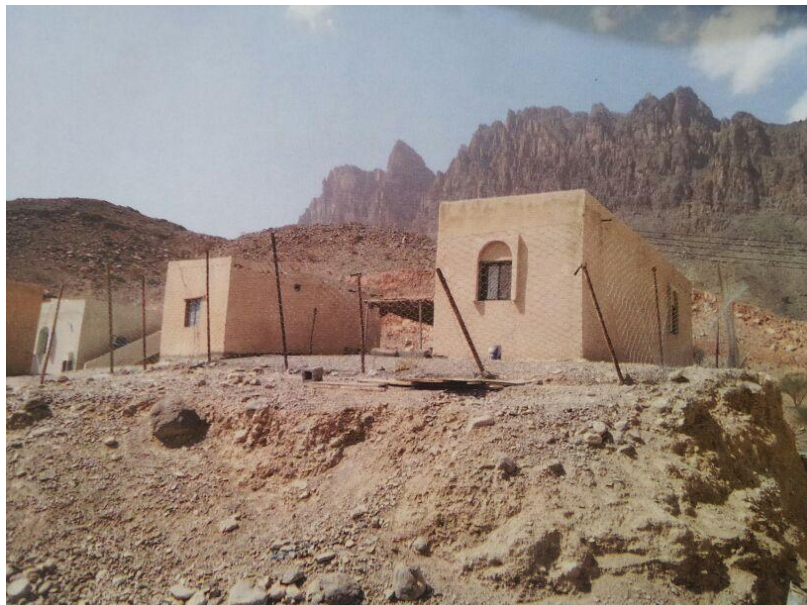
Source: Department of Social Housing 2011

The policy makers during the interviews confirmed that the aim of this program is helping low income people who live in desert or mountainous areas, far from other basic services and infrastructure, to get access to good quality houses. These residential units are provided as integrated projects and that includes the houses and internal roads. Sometimes they are provided with mosques, shops, centres to manufacture traditional crafts, and public places for the community to gather (Ministry of Housing officials, interviews, September 2013). Figures 7.2 and 7.3 present some of these projects which were provided in Haffet in Wilayat Al Buraimi while Figures 7.4 and 7.5 show 27 homes that were built in Ardh Al Jaw in the same Wilayat.

Figure 7.2: Aerial photo of Hafeet in Wilayat AlBuraimi

Source: Google Earth 2013b

Figure 7.3: The residential housing units provided in Hafeet in Wilayat AlBuraimi

Source: Field survey (2013)

Figure 7.4: Aerial photo of Ardh Al Jaw in Wilayat AlBuraimi

Source: Google earth 2013a

Figure 7.5: The residential homes in Ardh Al Jaw in Wilayat AlBuraimi

Source: Field survey (2013)

No social housing units were delivered through the Residential Units Program from 1991 to 1995, when it was replaced by a new program called the Housing Loans Program. The nature of this later program is explained in detail later in this section. Nevertheless, since 1996 the units have been continued again on an order from His Majesty the Sultan. From 1973 till 2014 around 13,711 housing units were provided through this program. This represents 2.5 per cent of the total housing units in Oman. These homes are located in different cities and Governorates in the Sultanate (see Table 7.1).

Table 7.1: Number of houses that were provided through the Residential Units Program till 2014 by five-year plan periods

Governorate	First Five-Year Plan (1976-1980)*	Second Five-Year Plan (1981-1885)	Third Five-Year Plan (1986-1990)	Fourth Five-Year Plan (1991-1995)**	Fifth Five-Year Plan (1996-2000)	Sixth Five-Year Plan (2001-2005)	Seventh Five-Year Plan (2006-2010)	Eighth Five-Year Plan (2011-2014)	Total housing units
Muscat	492	1,211	800	0	0	213	0	53	2,769
Al Batinah North and Al Batinah	100	472	60	0	0	487	416	0	1,535

Governorate	First Five-Year Plan (1976-1980)*	Second Five-Year Plan (1981-1885)	Third Five-Year Plan (1986-1990)	Fourth Five-Year Plan (1991-1995)**	Fifth Five-Year Plan (1996-2000)	Sixth Five-Year Plan (2001-2005)	Seventh Five-Year Plan (2006-2010)	Eighth Five-Year Plan (2011-2014)	Total housing units
South									
Musandam	180	44	41	0	15	129	110	0	519
Adh Dhahirah and Al Buraimi***	308	291	90	0	0	312	491	0	1,492
Al Dhakiliya	100	343	275	0	120	465	206	206	1,718
Ash Sharqiyah North and Ash Sharqiyah South	785	316	198	0	121	745	368	71	2,604
Al Wusta	0	30	107	0	0	667	388	50	1,242
Dhofar	280	309	122	0	10	0	744	370	1,835
Total****	2,245	3,016	1,693	0	266	3,018	2,723	750	13,711

*It includes the units that were provided in the period (1973-1975).
**There were no housing units provided in the period (1991-1995) as this program was replaced by the Housing Loans Program.
***No independent data available for Al Buraimi during the period (1975-2000).
**** These numbers are the numbers of new social housing units provided in each period

Source: Planning and Statistics Department 2011b; 2014b

From the Table (7.1) above it can be seen that there is no consistency in the distribution and housing allocation system under this program. The highest percentage of the housing provided under this program (22 per cent) was provided in the Sixth Five-Year Plan (1996/2000) while the Fifth Five-Year Plan witnessed the lowest percentage (1.9 per cent) of provision of the social housing units. In the Fourth Five-Year Plan no social housing units were provided. In general, Muscat Governorate acquired the highest percentage of homes in all the plan periods (1973-2014) (20.1 per cent) while Musandam acquired the lowest percentage; only 3.8 per cent of the total units provided by the program.

The reason behind such an imbalance could be that these units are just provided when His Majesty the Sultan orders their construction through his yearly tour around the Governorates. The community and the Governor (Wali) normally raise such issues with the government. After that His Majesty the Sultan issues the orders for construction. This administrative delivery process is discussed in more detail in the following section (Section 7.2). One of the policy makers who was interviewed stated that "His Majesty the Sultan, here, plays the central power in deciding how many houses should be provided as well as the budget allocation for such houses" (Ministry of Housing official, interviews, September 2013). It could also be argued that the role of the Ministry of Housing in the supply process is not effective or planned well in the Residential Unit program. That is because there is no clear plan available at the Ministry about the units which will be offered each year even in the short term. During the interviews, one policy maker confirmed that "in this program the Ministry just implements the decision made by the government" (Ministry of Housing official, interviews, September 2013). The administrative delivery process of this program is discussed in more detail in the following section (Section 7.2).

Some researchers have argued that the development of large social housing projects in which many low income people live together in one community could create various social problems (e.g. Hafazalla 2006; Hulse et. al 2010). Arthurson (2002, p. 246) has stated that:

> disadvantaged people are doubly disadvantaged through living in neighbourhoods of concentrated socioeconomic disadvantage, such as on public housing estates. The negative effects are explained in terms of limited access to the opportunities available in the broader society, including job networks and models of appropriate behaviour.

Others argue that gathering low income residents in one community could also create economic issues. This explanation may not be appropriate to Oman. According to the policy makers interviewed in this study, such housing projects in the Omani context helped to create new communities in the middle of the desert (Ministry of Housing officials, interviews, September 2013).

Other policy makers argued that the Residential Housing Program has gathered people into one community. Before, those people used to live separately from each other at a distance of one kilometre or more and they were not a clear community (Ministry of Housing officials, interviews, September 2013). This program where many housing units and different services are provided could create a 'new community' as was the case in the Hamra Aldoroe Project (Adh Dhahirah

Governorate, Wilayat Ibri) where 90 houses were built. One of the participants in the survey stated that "one of the main advantages of the social housing policy in Oman is the establishment of the Residential Housing Program where people are gathered in one location creating a lovely community" (Household head, September 2013). Other infrastructure and social services such as roads, mosques, public halls, and shops are also provided in some locations, emphasising the overall production of community services. The policy makers also added that such large-scale social housing projects raised the total housing supply and improved living standards for otherwise socio-economically disadvantaged residents. This was supported in the literature by many scholars (e.g. Chua 1991; Omar 2003).

On the other hand, there are other disadvantages with the Residential Units Program. The Planning and Statistics Department (2011b, p. 35) has shown that as a result of the emergence of some of the negatives that accompanied the Residential Units Program (for example some people refused to move from their original residence as it reduced their association with their local, social, and economic activities), the Housing Assistance Program was established in 1983. Here it could be argued that although the government aims to maintain the stability of these areas in which many people live together and create a community, other residents were disadvantaged. To overcome this issue the government established the Housing Loans Program where people can construct, restore, rebuild or make additions to their houses in their existing area (See Section 7.1.3 below).

7.1.2 The Housing Assistance Program

In 1981, the Housing Assistance program was created. It aims to help low income people who do not want to leave their village to move to social housing provided by the Residential Units Program. When this program started, a ministerial decision was made to include social welfare households and families of low income people who have an annual income of 1,800 OMR or less under the umbrella of the Social Welfare Law (Planning and Statistics Department 2011b). The concept of social welfare or social security households is discussed in more detail in the following section (Section 7.3). The assistance provided by the Housing Assistance Program allows for a maximum of 6,000 OMR to be disbursed to each household to build a new house or renovate, rebuild, or add onto a home owned by the applicants. In 2002, the maximum income of applicants was modified to 129 OMR in a month instead of 1,800 in a year (Planning and Statistics Department 2011b). In 2010, the maximum assistance was raised to 20 thousand OMR. Figure 7.6 below shows two bedroom units that were provided through this program and built by the Ministry of Housing in Wilayat Al Mussanah in Al Batinah South Governorate.

Figure 7.6: The residential homes provided through the Housing Assistance Program in Wilayat Al Mussanah

Source: Department of Social Housing 2011

Applicants also have the opportunity to contribute to the building by changing the design and building materials and any other issue on the condition that they pay the resulting difference in the unit's project cost. That is only allowed when the contribution does not exceed 50 per cent of the total cost of construction (Ministry of Housing 2011). Therefore, in this program the house could be built by the people themselves or by the Ministry of Housing, while in the Residential Units Program the Ministry takes all the responsibility for the design and construction of the units. That is because in the Residential Units Program the houses are provided as a project with different services and the units have almost the same design. On the other hand, in the Housing Assistance Program the funds provided are used to build one single dwelling on the applicant's land and the design could be chosen by the beneficiary. These differences between the two programs have implications for the outcomes. One respondent in the survey stated that "one of the advantages of the social housing policy in Oman is the establishment of the Housing Assistance Program in which beneficiary households have more choices in the location, design, as well as the building materials used in the construction" (Household head, September 2013).

Currently, the Housing Assistance Program provides financial assistance as a grant from the government of up to 25 thousand OMR to build three bedroom units and up to 20 thousand OMR to build a unit with two bedrooms. The number of bedrooms is determined by the number of family

members. Each house built by the Ministry of Housing in the Housing Assistance Program is provided with at least two bedrooms, living room, place for visitors, kitchen, toilets and yard. Policy makers in the interviews declared that the number of bedrooms provided is determined by the family size which was not the case in the past. Before 2010, almost all units were provided with two bedrooms. Nowadays, units with two bedrooms are provided to a family size of four or less. Three or four bedroomed units are provided if the family size is five or more (Ministry of Housing official, interviews, September 2013).

Policy makers stated in the interviews that since 2013, a new approach has been taken and implemented in delivering the units in which the sex of the family members is taken into consideration, and not just the family size;. A family with males and females will be provided with more bedrooms compared to families that have males or females only. One policy maker acknowledged that "nowadays around 90 per cent of the units under this program are provided with three bedrooms and that is in line with the general national standard in the country where most houses are constructed with three bedrooms" (Ministry of Housing official, interviews, September 2013). That was supported by the result published by the National Centre for Statistics and Information in its sixth report. In that report the percentage of Omani households which live in houses with one to three bedrooms represent around 66.4 per cent of all Omani households, while 29 per cent live in houses with four to six bedrooms and 4.3 per cent of households have seven bedrooms or more (there is no data available that shows the number of Omani households which live in one to two bedroom houses) (NCSI 2014a). All these changes reflect the adequacy standard used by UN-HABITAT where the 'sufficient living space' should be no more than two persons in one bedroom (UN-HABITAT & OHCHR 2003).

From 1981 till 2014 around 22,241 Omani households benefited from this program (see Table 7.2 below). This represents eight per cent of the total Omani households; the number of Omani households at the middle of the year 2013 according to the sixth report published by the National Centre for Statistics and Information was 278,861 (NCSI 2014a).

Table 7.2: Number of households benefiting from the Housing Assistance Program till 2014 by five-year plan periods

Governorate	(1981-1885)	(1986-1990)	(1991-1995)	(1996-2000)	(2001-2005)	(2006-2010)	(2011-2014)	Total beneficiary households
Muscat	82	325	360	152	149	96	782	1946
Al Batinah North and Al Batinah South	385	325	426	187	256	335	3,581	5,495
Musandam	68	85	99	23	66	27	464	832
Adh Dhahirah and Al Buraimi	133	132	119	62	107	90	1,666	2,309
Al Dhakiliya	685	154	202	93	122	92	1,432	2,780
Ash Sharqiyah North and Ash Sharqiyah South	161	304	456	122	154	713	4,419	6,329
Al Wusta	0	0	17	13	44	38	117	229
Dhofar	97	144	110	81	73	151	1,665	2,321
Total*	1,611	1,469	1,789	733	971	1,542	14,126	22,241

* These numbers are the number of new households benefited in each period

Source: Planning and Statistics Department 2011b; 2014a

From the above table it can be seen that the highest number of beneficiary households in the Housing Assistance Program occurred in the Eighth Five-Year Plan (2011-2014); representing around 63.5 per cent of the total beneficiary households. On the other hand, the lowest percentage occurred in the Fifth Five-Year Plan (1996-2000) with only 3.3 per cent of the total households which benefited from this program in the period 1981 to 2014. It could be argued that the significant increase in the number of beneficiary households in the current Eighth Five-Year Plan is due to the increase of the budget allocation from the central government to this program. A total of 372.2 million OMR was allocated for the processing of the applications registered under the Program during that period, an increase of around 1448 per cent compared to the Seventh Five-Year Plan (2006-2010), wherein the appropriations totalled only 25.7 million OMR (Planning and Statistics Department 2013).

Thus, there has been a sudden massive rise in the number of households which benefited during this current Five-Year Plan (2011-2014). Hafazalla (2006) has argued, in relation to Sudan, that the consequences of such a massive increase in supply should be taken into consideration during the planning process. He pointed out that the housing policy in Sudan lacks clearly defined objectives and that there is a need to examine the effects of this supply "on the housing market and the urban structure as well" (Hafazalla 2006, p. 338). There is likely to be a similar situation in Oman following the recent increase in supply, though the effect will be muted because loans are provided for modifying existing houses as well as building new ones.

One of the issues that faces the Ministry of Housing in implementing the Housing Assistance Program is the availability of land on which the units can be built. A priority in this program is preserving the psychological and social stability of the family by building units on their own land. Although all Omani citizens have the right to have their own residential property of around 600 square metres, allocated by the government, many low income people have sold their land (Ministry of Housing officials, interviews, September 2013).

According to the executive regulations of the social housing policy:

> In order to confer the housing assistance, the applicant shall be a permanent resident in the house subject to the assistance, or he/she owns a plot under his/her name to be constructed on. If the plot is not available for the construction, the applicant shall provide an alternative place he/she owns in order to be conferred the housing assistance, or the Ministry shall provide funding for the applicant to buy a house or an apartment (Ministry of Housing 2012a, p. 1).

Policy makers stated that this is difficult to implement in some governorates where there is a deficiency in the overall residential land available. Muscat is an example (Ministry of Housing officials, interviews, September 2013). A new approach was implemented in 2013 to solve this issue by building twin villas on blocks of land of 600 square metres. Although this approach solved the deficiency of land, families are forced to live on a shared block of land. It is anticipated that this approach is not suitable for the Omani culture where the privacy of the household is one of the priorities. This issue was not investigated in detail in this research as the primary data (interviews and survey questionnaires) were collected in 2013 before the implementation of this new approach. More research is needed to explain such issues.

7.1.3 The Housing Loans Program

In 1991, the Omani Government established the Housing Loans Program. It is recognised as a complement to the Housing Assistance Program and an alternative to the Residential Units Program. Executive regulations for this program were issued for the first time on June 1991 (Planning and Statistics Department 2011b). Regulations were stipulated to lend Omani citizens who earn at least 130 OMR and not more than 250 OMR in a month to build, buy a new house, extend, or renovate an existing unit. People who earn less than this amount can get access to the other two programs where the financial assistance is a grant not loan. In general, each loan should not exceed an amount of 15 thousand OMR. The amount is repaid by the borrower as instalments; 50 OMR from the borrower's income each month for a maximum period of 50 years (Planning and Statistics Department 2011b). The last instalment should be paid before the borrower becomes 60 years old. These units are registered as mortgages to ensure the payment of instalments (Ministry of Legal Affairs 2010).

In 2000, some amendments were made to this program. The monthly instalment, for example, was changed to not exceed 25 per cent of the borrower's income rather than a set amount of 50 OMR each month (Ministry of Legal Affairs 2010). The borrowers should pay the first instalment after nine months from the date of the beginning of the house construction. In 2011, the minimum and maximum amounts of the borrower's monthly income were changed. The monthly income of the applicants was changed to at least 301 OMR and not more than 400 OMR at the time of application and no more than 500 OMR at the time of receiving the mortgage (Planning and Statistics Department 2011b).

In the case of delivering the loan to a family with more than one person, the income of the household was taken into consideration, not just the individual borrower. In this case the household income should not exceed 600 OMR at the time of receiving the loan. At the end of 2013, many changes were made to this program. The loans provided were increased to reach 30 thousand OMR rather than 20 thousand OMR (Almaamary 2014). The monthly instalment was decreased to 20 per cent of the borrower's income instead of 25 per cent. The amendment also included the amount of the household income. Nowadays, the applicant's income (not the household's) should not exceed 600 OMR at the time of receiving the loan (Almaamary 2014). Between 1991 and 2014, the government granted 7,843 loans to Omani citizens at an interest rate of zero per cent (see Table 7.3 below).

Table 7.3: Number of households benefiting from the Housing Loans Program till 2014 in Oman by five-year plan periods

Governorate	(1991-1995)	(1996-2000)	(2001-2005)	(2006-2010)	2011-2014)	Total beneficiary households
Muscat	0	0	74	180	470	724
Al Batina North and Al Batina South	422	271	159	326	908	2,086
Musandam	105	26	32	11	336	510
Adh Dhahirah and Al Buraimi	168	96	79	105	361	809
Al Dhakiliya	221	126	122	114	654	1,237
Ash Sharqiyah North and Ash Sharqiyah South	434	171	172	205	476	1,458
Al Wusta	53	14	24	12	19	122
Dhofar	205	97	39	189	367	897
Total*	1,608	801	701	1,142	3,591	7,843

* These numbers are the number of new households benefited in each period

Source: Planning and Statistics Department 2011b; 2014a

Table 7.3 shows that the total number of households that benefited from the Housing Loans Program was 7,843. That represents approximately 18 per cent of the households which benefited from the total social housing policy in Oman. The Eighth Five-Year Plan (2011-2014) witnessed the highest per cent of households which benefited from this program (making up around 46 per cent of the total beneficiary cases) while the lowest per cent addition occurred in the Sixth Five-Year Plan (2001-2005) where the beneficiaries formed less than nine per cent of the total beneficiary households. The significant increase in the number of beneficiary families is due to the increase of the budget allocation from the government to this program. The total funds approved for the current Eighth Five-Year Plan (2011-2015) reached around 95.3 million OMR, an increase of around 554 per cent compared to the Seventh Five-Year Plan (2006-2010), wherein the total appropriations were only 17.2 million OMR (Planning and Statistics Department 2013).

In comparing this program with the Residential Units Program and Housing Assistance Program it seems that there is less support provided in the Housing Loans Program as in this program the applicant obtains a loan while in the other two programs the applicant gets a grant. Nevertheless, the Housing Loans Program is still active and plays a noticeable role in the overall supply of social housing. One policy maker stated that "without doubt this program is important in the social housing sector because the loans provided are affordable as there is no interest rate" (Ministry of Housing official, interviews, September 2013). He also added that there are "more choices provided in this program where the loan could be given for any of the following purposes: building a new house, buying an existing house, buying an incomplete house and completing it, expanding an existing house, or maintaining an existing house" (Ministry of Housing official, interviews, September 2013).

Social housing policy in Oman, by establishing this program, although it does not offer grants, helps working people who are classified as low income. Sometimes, the borrowers can get an exemption from paying the instalments on an order from His Majesty the Sultan. For example, in 1997 all Omani citizens who got loans through this program were excused from paying their remaining loans. The current social housing policy document, for instance, states that if the borrower dies, his/her heirs are exempt from paying the instalments even if the borrower had paid only one or two instalments. Moreover, if the borrower retired from his/her job and his/her income become less than 300 OMR he/she will be exempted from payment of the remaining instalments (Ministry of Legal Affairs 2010). To conclude, the Housing Loans Program is one of the programs that is provided by the government to support low income Omani households to get access to housing and thus ensure the stability of families.

7.1.4 Total Social Housing Supply

As the previous sections presented the supply situation in relation to each of the three programs, this section summarises the total supply of social housing in Oman. Here, it is good to mention that in the Residential Units Program the supply was presented in terms of the number of houses provided (because the purpose of the program is to build and allocate actual housing units) while in the Housing Assistance Program and the Housing Loans Program the supply was identified by showing the number of the beneficiary households (because these two programs provide monetary assistance to households that can be used to buy or extend existing houses or to build new units). These two different terms and information collection methods have been used in the Ministry of Housing's

reports. In this research, to be able make such a comparison, examine the total supply, and estimate the social housing future demand and supply there is a need to combine these two outcomes: actual housing units and beneficiary households. The following paragraphs explain how these two concepts were useful together in this research.

In general, each unit provided through the Residential Units Program represents a new social housing unit. It could also stand to represent a new single beneficiary household. That is because the term household refers in the 2010 General Census of Population, Housing and Establishments to people who live together in one place whether they do or do not have a relative relationship. A man who lives in his house with his parents, wife, and children is an example that represents one household according to this census. If the parents benefited from the Residential Units Program and they moved out of their son's house and into their own unit, they will thus represent a new beneficiary household. Their unit will also represent a new social housing unit. So, the final outcomes of this program could be measured quantitatively as the number of social housing units as well as the number of beneficiary households.

In the Housing Assistance Program, on the other hand, the money provided could be used to extend or modify an existing private housing unit. That is also the case in the Housing Loans Program. If a household benefited from these two programs and they used the financial support to extend their existing house, they would represent a new beneficiary household. On the other hand, their extended old house cannot represent a new social housing unit. In this case, the final outcome from that is a benefited household but not a specifically new social housing unit. Thus, there is no evidence that the number of households benefiting from the Housing Assistance Program and Housing Loans Program could stand to represent the number of the social housing units provided by these two programs. So, the quantitative measurement of the final outcomes of these two programs is the number of beneficiary households rather than the number of social housing units.

In consequence, the term used in this research project to show the total supply of social housing is the number of households or families which benefited from the programs rather than the number of social housing units. Table 7.4 below presents the total households that benefited from the social housing programs from the beginning of each program up to 2014.

Table 7.4: The number of households which benefited from the three programs, by Governorates, until 2014

Governorate	The name of the program			Total beneficiary households
	Residential Units Program (from 1973 till 2014) *	Housing Assistance Program (from 1981 till 2014) **	Housing Loans Program (from 1991 till 2014) **	
Muscat	2,769	1,946	724	5,439
Al Batinah North and Al Batina South	1,535	5,495	2,086	9,116
Musandam	519	832	510	1,861
Adh Dhahirah and Al Buraimi	1,492	2,309	809	4,610
Al Dhakiliya	1,715	2,780	1,237	5,732
Ash Sharqiyah North and Ash Sharqiyah South	2,604	6,329	1,458	10,391
Al Wusta	1,242	229	122	1,593
Dhofar	1,835	2,321	897	5,053
Total	13,711	22,241	7,843	43,795

* These are the actual number of units provided through this program
** These numbers represent the households which benefited from this program

Source: Planning and Statistics Department 2011b; 2014a

There is no doubt that significant progress has being made in the national arena in the provision of the total supply of social housing units and housing support in Oman. The beneficiary households represent around 15.7 per cent of the total Omani households in 2013, according to the sixth report published by the National Centre for Statistics and Information (NCSI 2014a). In that report it was mentioned that the proportion of home ownership among Omani households rose to 83 per cent in 2013. Although not all the increase in the home ownership is a result of the social housing policy, it could be argued that these programs provided a significant number of housing units and access to

ownership of housing units. One of the policy makers who was interviewed pointed out that "given the indicators of other countries for social housing, Oman is responding and performing well in the social housing sector" (Ministry of Housing official, interviews, September 2013).

What can be noticed from the above table is that although the Residential Units Program has delivered social housing units since 1973, the total beneficiary households are fewer in this program than the households which have benefited from the Housing Assistance Program although it only started in 1981. Thus, there is no sense of balance in the provision of housing between the programs. In addition, the Housing Assistance Program seems to contribute more in the overall social housing supply in Oman. More than half of the Omani households which got assistance from the social housing policy between 1973 and 2014 were helped by this program followed by the Residential Units Program where 31.3 per cent benefited and then the Housing Loans Program where less than 18 per cent got assistance. The reason for this could be the difference in the budget allocations from the Omani Government for each of these programs. More funds were allocated for the Housing Assistance Program compared with the other two programs especially in the current Eighth Five-Year Plan; at an annual rate of 80 million OMR (Planning and Statistics Department 2012b). This issue is discussed in more detail in the following section (Section 7.2).

7.2 Administrative Delivery Processes and Budget Allocations

The previous section showed the current supply of social housing in Oman. This section looks at the administrative delivery processes of the social housing programs, explaining how social housing units are delivered in each of the three programs. Funding for the three programs is also identified and discussed in this section. The social housing programs are directly financed by the Omani government. The financial support of the government to these programs is allocated at the beginning of each national five-year plan. The total amount of the budget allocation to these programs is shown in the relevant section of each five year plan.

7.2.1 Administrative Delivery Processes for the Residential Units Program

Delivery processes in the Residential Units Program are different from those in the other two programs. One of the policy makers in the interviews explained the administrative processes in delivering social housing units through this program (see Figure 7.7) by saying that the units are provided as integrated projects on a royal order from His Majesty the Sultan. He also mentioned that there are three ways in which the demand for building such units is communicated to His

Majesty. The first one is through the Council of Ministers (Cabinet). This Council receives housing demand information from Majlis al-Shura (the Consultative Council) which is the representative council of the people (see arrow one in Figure 7.7). His Majesty may also receive the housing demand information from the community (see arrow two in Figure 7.7) or from the Majlis al-Shura directly (see arrow three in Figure 7.7) without going to the Council of Ministers, as he regularly consults community members. After receiving the social housing demand information directly from the community or Consultative Council, His Majesty the Sultan will request the Council of Ministers to study such demand taking into consideration the cost, and the number of people who applied to get access to social housing through the Ministry of Housing in that wilayat. After an assessment of the demand and the cost is undertaken, recommendations are made by the Council of Ministers to His Majesty the Sultan. In some cases, the Sultan makes an order to deliver social housing units in association with the delivery of services and facilities such as mosques, public halls, and shops.

Figure 7.7: The administrative process in determining demand for the Residential Units Program
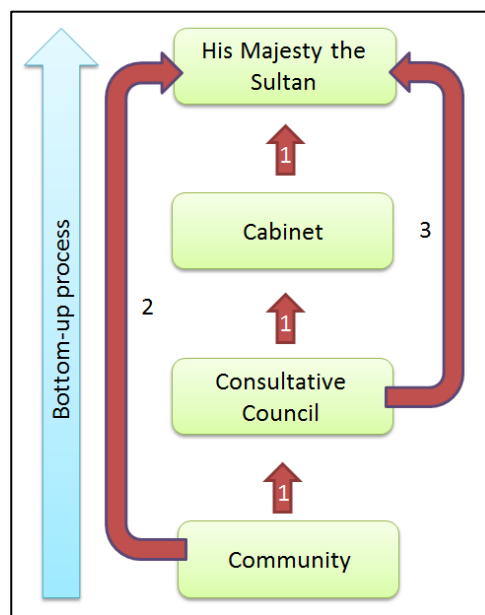
Source: Created by the researcher

From Figure 7.7 above, it is clear that it is a bottom-up process where the people express their needs to the Majlis al-Shura which ends up with the Council of Ministers raising their needs to the Omani government. Omani residents as well as the Consultative Council can also communicate the social housing needs directly to His Majesty the Sultan. Here, the Sultan meets the community through his

yearly tours around the wilayats, and this is the third source of information on social housing demand.

One of the interviewees indicated that there are two types of royal orders that can deliver social housing units through the Residential Units Program. In the first type, the numbers of units with different social services (such as mosques and public halls) which will be delivered in a certain wilayat (city) as well as the funding allocation are identified (Ministry of Housing official, interviews, September 2013). The Ministry of Housing will then receive the money from the government and implement the project in partnership with contractors. These contractors and companies should have a valid registration certificate from the competent authority in the Ministry to be able to construct social housing projects.

In contrast, in the second type of orders, the number of units as integrated projects is ordered without reference to the funding. Then the Ministry of Housing opens tenders to contractors to participate by offering their price. Different costs are provided for that project and the Ministry chooses the most appropriate contractor to build and construct the project: "who provide the lowest price" (Ministry of Housing official, interviews, September 2013). Then, the agreed cost will be provided by the government. For example, in 2007, 1.5 million OMR was provided from the government to build ninety seven housing units in Wilayat Al-Modhaibi (in Ash Sharqiyah Governorate) (Planning and Statistics Department 2011b). Therefore, in this type of order, the contractors' tenders are playing a major role in determining the cost of the derived units.

Here, it is worth pointing out that there is no model that is used to assess the real demand for this program. That is because applicants who want access to this program apply through the Housing Assistance Program. This issue is explained and discussed in more detail in the following section. In that section the meaning of the waiting list is explained and the demand for the Residential Units Program is shown using the waiting list of the Housing Assistance Program.

7.2.2 Administrative Delivery Processes for the Housing Assistance Program and Housing Loans Program

Here there is a need to explain the administrative delivery processes to be able to understand the overall picture of social housing demand and supply. The policy makers during the interviews identified the role of the Ministry of Housing and the administrative process in which the funding is allocated to the other two social housing programs. They stated that the Ministry of Housing is

required to submit a report to the Supreme Council for Planning before the beginning of each Five-Year Development Plan. This council works in collaboration with the Council of Ministers. Here it is worth mentioning that since 2012, the Supreme Council for Planning is the council which allocates and approves the financial fund for all different sectors in the Sultanate of Oman as was declared in Royal Decree number 30/2012 (Ministry of Legal Affairs 2012). Before that time, it was the responsibility of the Council of Ministers alone. His Majesty the Sultan is the Chairman of the Supreme Council for Planning. Other ministers such as the Minister of Commerce and Industry (as vice president), the Minister of the Interior, the Minister Responsible for Financial Affairs, the Minister of Higher Education, the Minister of Housing, the Minister of Transport and Communications, and the Minister of Agriculture and Fisheries are all members of this council.

In the report provided to the Supreme Council for Planning, the Ministry identifies the required fund for processing of the applications that were registered under the Housing Assistance Program and Housing Loans Program. The required funding is estimated by the Ministry of Housing by taking into consideration the number of applications in the waiting list in each program as well as the maximum amount of the assistance and loan: the maximum assistance reaches up to 25 thousand OMR per household, while the maximum loan reaches up to 30 thousand OMR for each household (Ministry of Housing officials, interviews, September 2015). Here it is worth mentioning that the Ministry of Housing, in determining the demand for the Housing Assistance Program and Housing Loans Program, counts only 40 per cent of the total registered applications on the waiting list. This issue is discussed in more detail in the following section.

The Supreme Council for Planning makes the decision about the amount of money allocated for each program at the beginning of each Five-Year Plan. The final decision of the budget is based on the overall government revenue as well as the required fund for different sectors such as education, defence, health, etc. As His Majesty the Sultan is the Chairman of this council, he is in charge of financial matters and thus he is the ultimate decision-maker. Considering his role in the Residential Units Program (as described Section 7.2.1), it can be argued that His Majesty the Sultan plays a significant role in allocating funds for all three social housing programs in Oman. The Minister of Housing is also a member of the Supreme Council for Planning. His membership of this important decision making and budget allocation council could influence the total government expenditure on housing in general and on social housing programs in particular.

Here, there is a need to reflect on the political regime of the Sultanate. According to the Basic Statute of the State, His Majesty the Sultan has the legitimate right and full authority with regard to planning, finances, armed forces and whatever he sees as important to the nation (Ministry of Legal Affairs 2011). With financial matters, the Omani Government has a Minister Responsible for Financial Affairs but, His Majesty the Sultan himself is the Minister of Finance, and he is the final decision-maker in financial matters of the State. Therefore, His Majesty the Sultan can allocate funds to social housing at any time from any fund without being questioned. This is consistent with the legitimacy and power of his position that is indicated in the Basic Statute of the State.

Based on this context, the question is how long will the social housing units be provided? One interviewee stated that "I think that the support will continue as long as there is a potential for implementation" (Ministry of Housing official, interviews, September 2013). Another interviewee believed that "it is an economic issue. Whenever there is enough money, the funds for these programs will continue" (Ministry of Housing official, interviews, September 2013). Previous studies have supported the above argument in which the economy of a nation is the most effective factor that drives the level of the funds allocated from the government to such programs and thus to the overall social housing supply (e.g. Omar 2003; O'Neill et al. 2008). Knowing that Oman's revenue is dependent on oil and gas highlights the issue of the sustainability of running those programs. In 2013, for example, the oil and natural gas revenue contributed around 85.7 per cent of the total government revenues; 75 per cent from oil and 10.7 per cent from gas (CBO 2014). This also raises the issue of meeting the current and future demand for social housing: the Omani Government is almost totally dependent on an insecure and finite resource for funding.

7.2.3 Budget Allocations for the Residential Units Program

Figure 7.8 below shows the budget allocations for social housing projects that were provided through the Residential Units Program from 1976 till 2014. Around 306 million OMR was spent under this program during that time.

Figure 7.8: Budget allocations for the Residential Units Program and the number of units provided by the Five-Year Plans
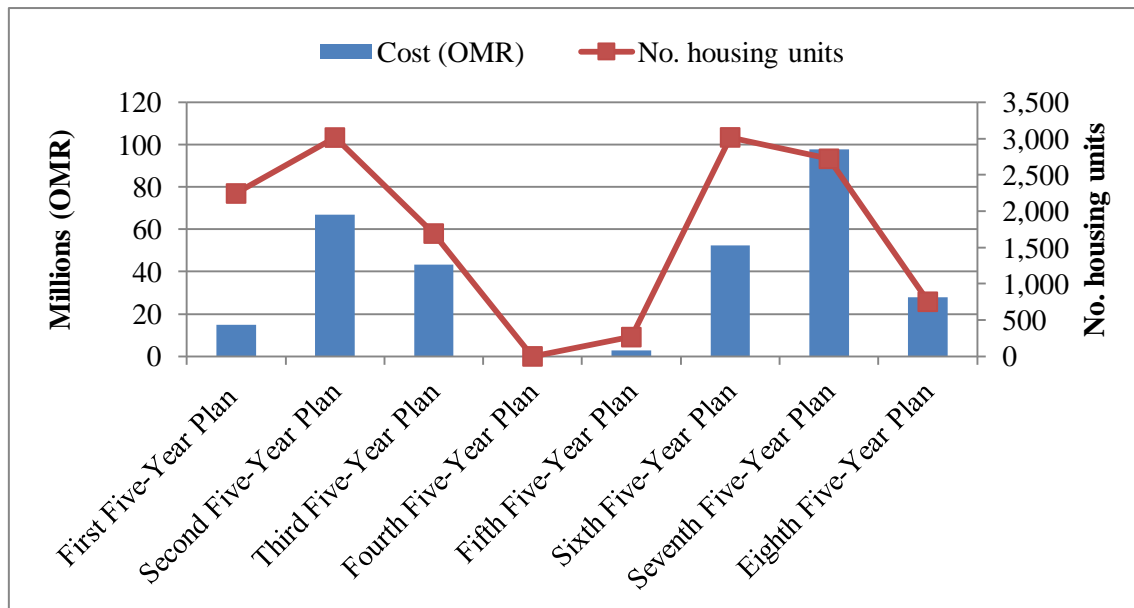
Source: Planning and Statistics Department 2011b; 2014a (created by the researcher)

Figure 7.8 shows that there is no clear pattern in the overall financial support for this program. For instance, in the Fourth Five-Year Plan (1990-1995), there was no budget allocated because the Housing Loans Program was implemented as an alternative to this program (Planning and Statistics Department 2011b). In the Fifth Five-Year Plan (1996-2000), this program was re-established but with low funding: representing less than one per cent of the total funds in the period 1973-2014. In addition, most of the funding occurred in the Second Five-Year Plan (1981-1885), the Sixth Five-Year Plan (2001-2005), and the Seventh Five-Year Plan (2006-2010). The outcomes of the increase in the funding in these three Five-Year Plans affected the total housing units which were built through this program in these periods. This conclusion was supported in Section 7.1.1 above where it is shown that more than 63 per cent of the social units which were allocated through the Residential Units Program were provided in these three Five-Year Plan periods.

With regard to the budget, the funding for each sector such as health and education is identified in each Five-Year Plan. But that is not the case for the Residential Units Program. In general, there is no specific budget issued by the government for the Residential Units Program in any of the eight National Five-Year Development Plans (1975-2015). That is because new funding is an order of His Majesty the Sultan. Therefore, the budget allocation used by the Ministry of Housing for this

program is not a part of the total budget that is provided by the government to the Ministry to be spent on social housing programs.

The argument that could be drawn here is that there is no clear plan for the annual supply of the social housing units through the Residential Units Program. It just appears suddenly when there is a royal order by His Majesty the Sultan as was described in Section 7.2.1. Although His Majesty the Sultan consults with the Council of Ministers and the community about social housing demand, he makes the final decision. The policy implication here is that there should be a clear plan about the social housing provision through this program so that the social housing demand can be planned for and met.

7.2.4 Budget for the Housing Assistance Program and Housing Loans Program

The budget allocation for the Housing Assistance Program and Housing Loans Program is articulated by the Omani Government in each five year plan. In each of these plans the social housing development is given attention and the allocated budget is clearly identified for each program. The paragraphs below show the engagement of the government in these two programs.

In regard to the Housing Assistance Program, the first financial support occurred in the Second Five-Year Plan (1980-1985) with around six million OMR for that the entire period (see Figure 7.9) (Planning and Statistics Department 2011b). A most significant change in the budget allocation for this program has occurred in the current Eighth Five-Year Plan (2011-2015). That is because there was intervention from His Majesty the Sultan in the total budget allocated. In 2011, a royal order was issued to increase the government financial support for this program to around 200 Million OMR per five-year period (Planning and Statistics Department 2011b). At the beginning of 2012, this fund was increased again as a new royal order was issued by His Majesty. A total of 320 Million OMR for the years 2012-2015 was appropriated for the processing of the applications registered under this program: with an average of 80 million OMR per annum (Planning and Statistics Department 2012).

Figure 7.9: The budget allocation for the Housing Assistance Program and the number of households which benefited from the Five-Year Plans
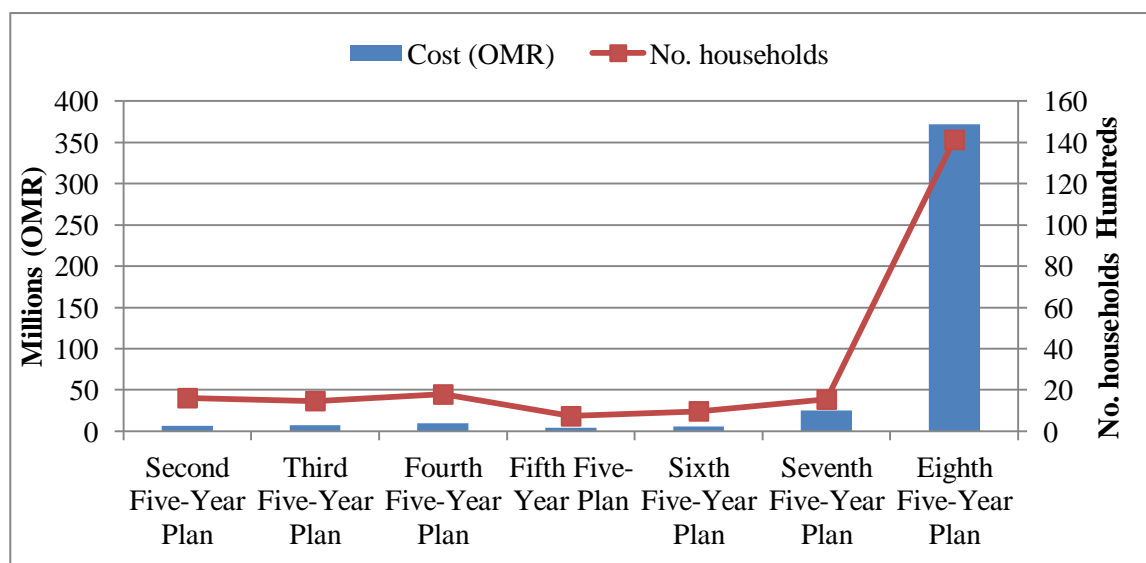
In general, a total of 372.2 million OMR was approved for the Eighth Five-Year Plan (2011-2015): 52.2 million OMR for the year 2011 and 80 million OMR per year for the remaining four years. Comparing this with the fund approved for the Seventh Five-Year Plan (2006-2010) there is an increase of 1348 per cent, as a total of only 25.7 million OMR was appropriated for that period (Planning and Statistics Department 2013). The reason for such an increase in the budget allocation is the significant increase in government revenue since the increase in the oil price at the beginning of the Eighth Five-Year Plan (BTI 2014; CBO 2014). This is discussed in more detail in the reflection section below (Section 7.2.5).

For the Housing Loans Program, the first financial support occurred in the Fourth Five-Year Plan (1990-1995) with around 22 million OMR for the five years (see Figure 7.10) (Planning and Statistics Department 2011b). The funds approved in the Seventh Five-Year Plan (2006-2010), on the other hand, decreased to around 17.2 million OMR per five-year period (Planning and Statistics Department 2011b). At the beginning of the Eighth Five-Year Plan (2011-2015) the total approved funding was around 48 million OMR per five year period. In 2012 a royal order was issued by His Majesty to increase the financial support for this program to around 95.3 million OMR: an increase of 454 per cent (Planning and Statistics Department 2013). The reason for such a large increase in the funding in the Eighth Five-Year Plan for the Housing Assistance Program (see Figure 7.9) and

in the Housing Loans Program (see Figure 7.10) is due to the increase of Oman's revenue (and thus expenditures) as a result of a significant increase in the oil price. This is explained in more detail in the following section (7.2.5).

Figure 7.10: The budget allocation for the Housing Loans Program and the number of households which benefited from the Five-Year Plans
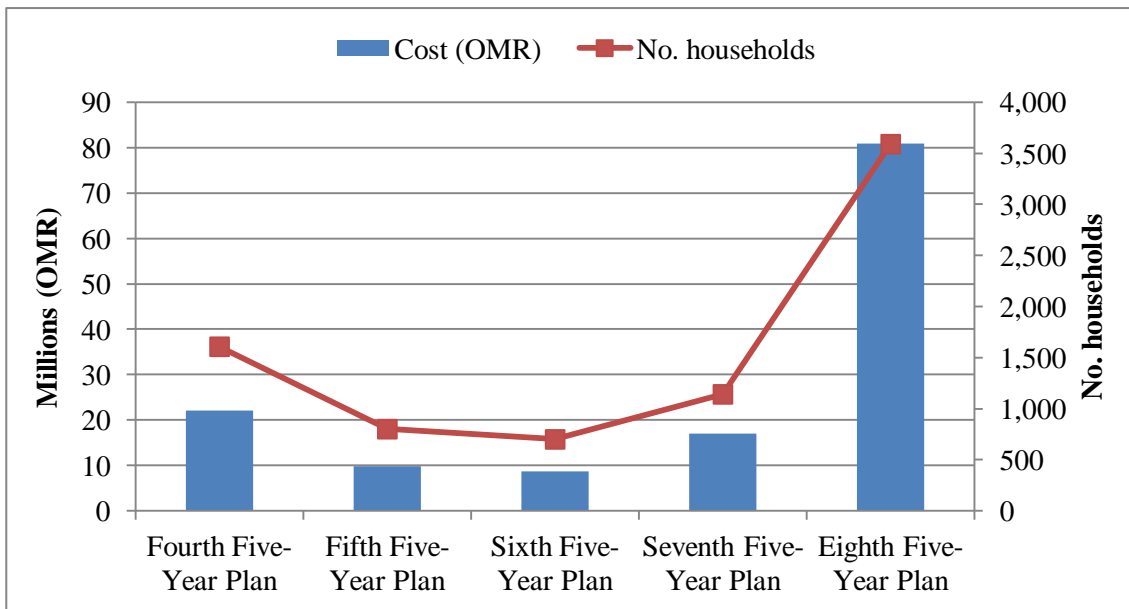
Source: Planning and Statistics Department 2011b; 2014a (created by the researcher)

7.2.5 Reflection on the Budget Allocations

Figure 7.11 below shows that around 372 million OMR was allocated to the Housing Assistance Program, representing 45 per cent of the total budget allocation for all three programs in all Five-Year Plans. This is followed by the Residential Units Program where 306 million OMR was approved, forming around 38 per cent of the total budget. The funding for the Housing Loans Program was 138 million OMR, accounting for only 17 per cent of the total budget for the three programs.

Figure 7.11: The funds for the three social housing programs for the Five-Year Plan periods
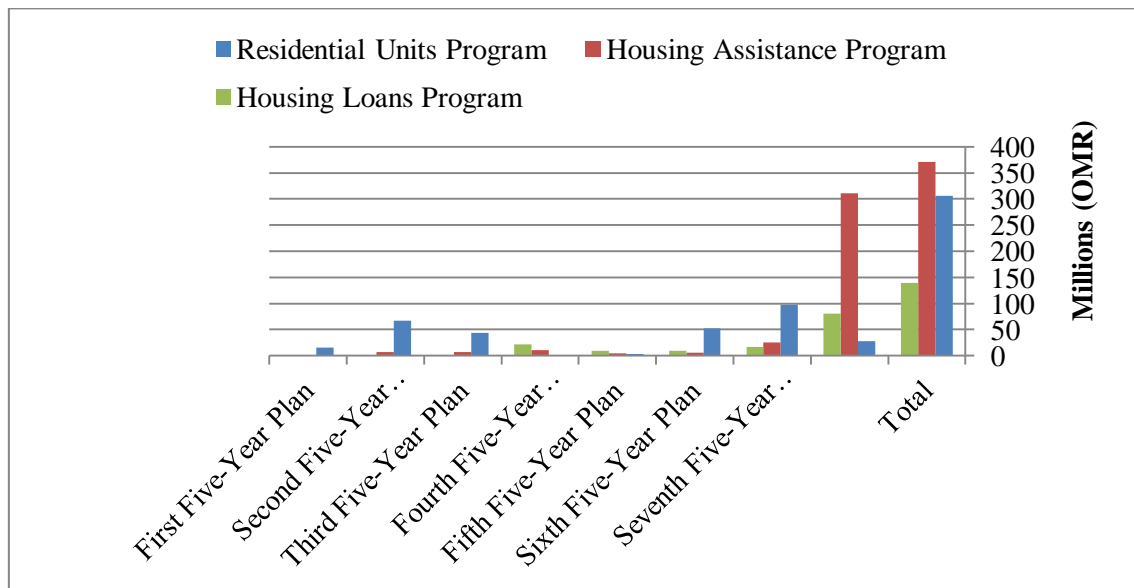
Source: Planning and Statistics Department 2011b; 2014a (created by the researcher)

The budget allocated to the Residential Units Program and Housing Assistance Program is consistently more than the funding for the Housing Loans Program. Those policy makers who were interviewed attributed this to the economic status of the beneficiaries. Those who can get access to the Residential Units Program and Housing Assistance Program are very low income people and thus their need is regarded as a priority by the Omani Government (Ministry of Housing officials, interviews, September 2013). On the other hand, the economic situation of the beneficiaries of the Housing Loans Program is much better (their income is between 300 OMR and 400 OMR per month) compared with the first category. Literature also has supported this approach in which more needy people are provided with more assistance (e.g. Alnasiri 2011; Omar 2003). This financial data reveals that the Omani Government preferences the delivery of social housing for those Omani residents on the lowest incomes as an expression of its concern for fairness and social justice in the access that Omani citizens have to housing.

The data also shows that the increase in the budget for the social housing programs has positively supported the total supply of social housing units especially in the Eighth Five-Year Plan. That was shown in Section 7.1.4 in which the total number of households which benefited from the social housing programs has notably increased during this five-year plan: representing around 42 per cent of all beneficiary households in all Five-Year Plans. The reason for that could be the economic development which has occurred in Oman since 1970 and more noticeably during the period of operation of the Eighth Five-Year Plan. According to the Bertelsmann Stiftung report in 2014:

The Omani economy registered an impressive increase of 5 per cent in its real GDP [gross domestic product] in 2011, despite the Arab Spring. Data for the first eight months of 2012 indicate robust revenue growth, outpacing major increases in expenditure. Data from the Ministry of National Economy has shown that the Omani economy grew by 16 per cent in nominal terms in the first half of 2012. Oil and natural gas sectors account for 87 per cent of government revenues (BTI 2014, p. 20).

A report published by the Central Bank of Oman (CBO) in 2014 confirmed that the Omani Government in 2011 and 2012 has witnessed substantial economic growth as a result of the increase in the oil price (CBO 2014). That surplus in the revenue has been used in several infrastructure construction and other developmental projects. Social housing programs were among the developmental projects that have been advantaged by that surplus.

Here it could be argued that the funds provided by the government are used to benefit new households through three different programs. A question for consideration, though, is 'Are those houses which were built in the 1970s and 1980s still adequate in their construction, number of bedrooms, and design?' As mentioned in Chapter Six, the Ministry of Housing is responsible for the housing maintenance for one year only. Thus, who will get the priority for new funds? Will it be the households that benefited from these programs and whose houses require maintenance, or low income households which have not benefited from these programs yet?

The above context also leads us to an argument that the main source of finance for the current social housing in Oman is direct government expenditure. In other words, the role of the private sector in social housing investment seems to be ignored or not activated yet in Oman. This was supported in the interviews with the policy makers where one of them confirmed that the main supporter of social housing in Oman is the government and "there is little or no involvement from the private sector" (Ministry of Housing officials, interviews, September 2013). This raises the issue of the ability of the government to continue funding social housing in Oman.

Various researchers have argued that the financial resources that are provided by governments to low income residents are limited and decreasing with time (e.g. Lawson et al. 2009; Mukhtar 1997; Olotuah & Bobadoye 2009; Omar 2003). On the other hand, Lawson et al. (2009) have argued that public grants and loans are traditional models in financing social housing. With time, the direct involvement of government in social housing seems to have declined in many countries as shown in several studies (e.g. Mukhtar 1997; Olotuah & Bobadoye 2009; Omar 2003). This decline is

particularly noticeable where governments assume the burden of the continuing maintenance and upkeep of an ageing stock of social housing. Where this happens it is the private sector that is often expected to play a role in supporting governments in the initiative of financing social housing. This has a policy implication for the Omani government, in that it needs to start involving the private sector. There is a potential finance problem when the income from oil and gas is no longer available.

7.3 The Current Social Housing Demand

The previous two sections presented the overall social housing supply and the budget allocations for the three social housing programs. This section examines the other side of the supply/ demand situation, starting with an examination of the current demand for social housing by using two methods: the 'social housing waiting list' and 'social security households'. In the first method, the number of applications on the waiting list (with some modifications, as explained below) are used. In the second method, the number of households which are classified as 'social security households' or 'social security welfare recipients' in Oman are examined to derive the current demand for social housing. Before doing this, the eligibility criteria to get access to the three social housing programs, the concept of the 'social security households', and the eligibility criteria to get access to social security support according to the Social Security Law are explained in this section.

This study estimates the 'current' social housing demand only till the end of 2014 using the 'waiting list' method and till the end of 2013 using the 'social security households' method. That is because the data for the second method, about the number of social security households, is available only till the end of 2013. Nevertheless, the current demand till the end of 2013 using the waiting list method will also be provided to show the same time period with the second method and thus allow comparison between the two methods. This study, therefore, uses the number of applications in the waiting list as well as the number of households which are classified as 'social security households' to evaluate the current social housing demand in Oman. Using two methods allows a comparison between the two results and ensures the accuracy of the findings.

7.3.1 Waiting List Method

In the literature, waiting lists are often used to measure the current unmet social housing demand (e.g. Hanson, Lloyd & Lorimer 2004; Kullberg 1997; Newhaven Research 2010). Waiting lists are often thought of as a measure of housing need but can be very limited. They are the way social

housing agencies ration need; a waiting list is the list of households waiting allocation for a dwelling with the number on the list affected by a whole range of factors including perception of wait time, stigma, and housing quality. In countries with a small social housing sector many households do not apply for social housing as the wait lists are so long that they know it is a futile exercise. When a housing agency targets just those with a very low income or unemployed this may create problems of stigma and associations with problematic households. If there are known quality problems this may also limit applications to the wait list. Despite these problems, this study uses social housing waiting lists to examine the current social housing demand because this is the best data available in Oman. Before going into detail about the number of applications on the waiting list, there is a need to explain the meaning of the social housing waiting lists used by the Ministry of Housing in Oman as explained by the interviewed policy makers.

7.3.1.1 'Social Housing Waiting List' Concept in Oman

There is no clear-cut waiting list in which the exact numbers of households which are eligible to have access to social housing in Oman are known or identified. The waiting list includes all applications for social housing that have been made and registered by the Ministry. These applications are called 'registered applications' rather than 'approved applications' (Ministry of Housing officials, interviews, September 2013). Policy makers in the interviews stated that not all the registered applications will be accepted by the Ministry to get access to social housing. That is because some applicants do not fulfil the criteria set out in the executive regulation of the social housing policy in regard to their income, age, working status, health status, and other conditions. The applications do not go through a filtration process to check their eligibility when they are first submitted. The registered applications, in other words, although they are assessed in order, the applications are studied by the Ministry only when the turn for that specific application arrives but not when they are first submitted. Figure 7.12 below shows how the Ministry of Housing sorts and filters the applications for social housing.

Figure 7.12: Filtering processes of the social housing waiting list in Oman
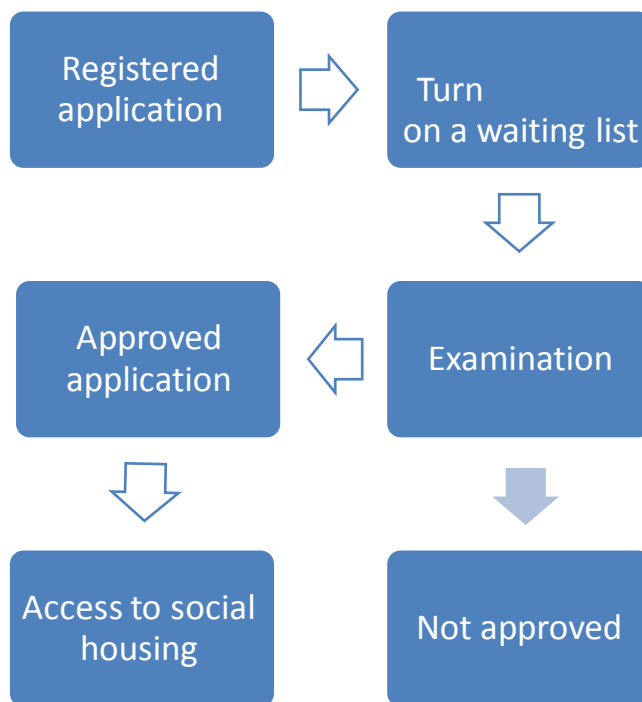
The study found that the Ministry was not using an up-to-date electronic system for uploading applications. The Ministry of Housing is still using a traditional system of written application forms which are filled in by social housing applicants. The received applications are filed by the Ministry according to the date of submission without being sorted. According to one of the policy makers, sorting and filtering the applications according to the criteria takes time and effort for each single application. Ministry officials have to do a whole study of each applicant and do a site visit to his/her current living place (old house or relative's house). With such a complicated process for studying the applications and with the large number of applications received daily, the Ministry does not study the conditions and approve the eligibility of the applicant at the time of submitting the applications (Ministry of Housing officials, interviews, September 2013). The assessment is undertaken when the turn of the applicant comes.

In regard to the allocation system, the Ministry of Housing examines the applications in the order they are submitted (Ministry of Legal Affairs 2010). Thus, the selection of applicants from the waiting list is chronological; when there is a housing assistance or housing loan available the next applicant on the waiting list is selected to get access to social housing. The executive regulation of this policy, on the other hand, states that the Minister of Housing has the right to award the assistance (housing unit, housing assistance, or housing loan) to households which have exceptional

and urgent need and which are unable to afford housing, such as following fires and floods, without limiting itself to the order of submission (Ministry of Housing 2011). Here it seems that the social housing policy takes into consideration the needs of the families and individuals who have been the victims of natural disaster, accidents, or any urgent cases. This approach is supported in many countries (e.g. Netherlands, Australia) and by the UN-HABITAT agenda in which the priority of getting access to social housing is given to urgent candidates (UN-HABITAT & OHCHR 2003).

Based on the discussion above about the filtering process, the study argues that there is no real modelling in which the need for the real and actual social housing in Oman is identified. The demand is estimated based on an unclear and unreal waiting list. The waiting list includes all those who apply; those who are eligible and those who are not eligible. Other issues are also not clear on the waiting list. For example, how many applicants applied to have a new unit and how many of them applied to extend their old one. Kullberg (1997) has argued that the information provided in the waiting list could be used to get a clear picture about the overall social housing demand. In Newhaven Research (2010), it is shown that the applications on the waiting list should be re-registered and re-assessed regularly to ensure accurate data about social housing demand. But that is not the case in regard to the social housing waiting list used in Oman. The implication here is that there is a need to have an accurate system that is able to show 'true' social housing demand. Without knowing the need, there is no way to provide the required number of units or to properly plan future budget allocations or even to effectively evaluate the success of the social housing policy.

7.3.1.2 Is There a Waiting List for the Residential Units Program?

The Residential Units Program delivers social housing units for free. In the interviews, policy makers declared that there is no waiting list available in the Ministry of Housing for this program (Ministry of Housing official, interviews, September 2013). That does not mean there is no demand for social housing units. To make it clear, poor people who are in need of social housing units can apply by filling in applications. These applications are collected by the Ministry of Housing as the 'housing assistance waiting list'. That is because the Housing Assistance Program can deliver financial support to build a new unit, or to extend, rebuild, or restore an old one. Policy makers illustrated that when His Majesty the Sultan orders housing units through the Residential Units Program, those people who applied to the Housing Assistance Program requesting a new social housing unit will benefit and gain the ordered units (Ministry of Housing official, interviews,

September 2013). In other words, the housing units could be provided through either the Residential Units Program or the Housing Assistance Program. In the executive regulation of the social housing policy it is stated that in distributing the social housing units through the Residential Units Program priority is given to those who have registered their applications to have a residential unit with the Housing Assistance Program as long as they have satisfied the conditions and terms (Ministry of Housing Oman 2011).

This context, where there is no waiting list available specifically for the Residential Units Program, limits the ability of this study to estimate the current social housing demand for this program. The waiting list method, therefore, is applicable only to the Housing Assistance Program and Housing Loans Program as shown in the following subsections.

The above context also leads us to an argument that the beneficiary households who applied to get access to the Housing Assistance Program but have benefited from the Residential Units Program could be disadvantaged indirectly. In explaining that, as was discussed in Chapter Six, the Ministry of Housing takes the responsibility for building social housing units through the Residential Units Program. The Ministry chooses the location, design, number of rooms, and many other issues. In contrast, in the Housing Assistance Program, the households have the chance to choose the design, number of rooms, and building materials so long as the overall cost of the unit does not exceed the amount of assistance set out in the executive regulation. In one of the site visits made by the researcher in 2013 in Wilayat Al Rostaq, one of the household heads who lived in a social housing unit stated that one of his friends applied to get housing assistance to rebuild his old, small, and bad quality house (Site visit 2013). He was offered a unit by the Residential Units Program. The new unit was built by the Ministry as a project attached to other social housing units in a different location. The new unit was far away from his original home. His children found it hard to move as they would have lost their contact with their friends in the old community. Therefore, they decided to stay in their old bad quality house rather than move to the new one offered to them.

Thus, more choices are available when people benefit from the Housing Assistance Program compared with those who benefit from the Residential Units Program. Therefore, the applicants who get a new housing unit through the Residential Units Program for free, could lose some advantages that are provided by the Housing Assistance Program. The final outcome depends on which program the applicants will benefit from; and this is not clear either to the Ministry of

Housing or to the applicants themselves, because there is such a lack of transparency in allocating social housing units through the Residential Units Program.

This finding has supported the findings in Section 7.1 and Section 7.2 which identified the ambiguity about allocations through the Residential Units Program. Section 7.1 identified the ambiguity resulting from uncertainty over how many units would be provided through this program at the beginning of each year. In Section 7.2, the uncertainty was about the budget allocation for this program at the beginning of the Five-Year Plans. And this section has shown that the outcome (in the case of submitting an application to get access to a social housing unit) is not clear; it could be a unit from the Residential Units Program or a unit from the Housing Assistance Program once the conditions are met. That depends on a decision made by the authorities.

One of the policy makers in the interview supported this argument by stating that although this program provides units free of charge for many Omani citizens, "there is no clear vision for this program" (Ministry of Housing official, interviews, September 2013). So, this is an indication of a deficiency in planning and a lack of transparency in allocations made in the social housing sector in Oman in regard to this program. It is suggested that this program would be better planned by identifying the supply of units more clearly, by clarifying the budget allocation and by generating a clear-cut waiting list for this program.

7.3.1.3 Estimating Current Demand using the Waiting List Method

This section presents an estimate of the current social housing demand in Oman by using the records of the waiting list method. There are actually two waiting lists available in the Ministry of Housing: the 'housing assistance waiting list' and the 'housing loans waiting list'. As was described above the number of applications in these two waiting lists does not represent the actual social housing need as it includes all the registered applications rather than only the applications from eligible households. Nevertheless, knowing the total number of the registered applications could help in estimating the overall social housing demand.

As there is no data available in regard to the number of eligible applications on the waiting list, the registered applications on the waiting list were used in this study as the starting point to estimate the current social housing demand. To do so, the estimated current 'eligible' need was approximated taking into consideration the number of the registered applications on the two waiting lists and the opinion of the interviewed policy makers about the relationship between the number of applications

and the number of eligible applications. One policy maker claimed that the eligible applications in both the Housing Assistance Program and Housing Loans Program, are around 70 per cent of the registered applications. That was based on his experience of many years. Another declared that the estimated number of the 'real' applications for the Housing Assistance Program from 2011 to 2013 was around 40 thousand applications. In fact, the number of the registered applications for this program on the waiting list (from 2011 to 2013) provided by the Ministry of Housing during the data collection was 57,317 applications. That means around 70 per cent of the registered applications will be approved to have access to social housing as estimated by the previous policy maker. Other policy makers confirmed that the number of the registered applications was exaggerated as some people might apply more than one time which is possible in the traditional system of applications. Increases in the applicants' income (taking them beyond the limit of eligibility) could be another reason why there are more registered applications than eligible applications.

On the other hand, the Ministry of Housing in 2011 published a book called *Social housing (1973-2010)*. From the beginning of the year 2010 till May 2011, the Ministry studied 5,695 registered applications on the housing assistance waiting list (Planning and Statistics Department 2011b). From that number, 3,530 applications were approved to get access to social housing and 2,165 were refused as they did not fulfil the criteria and conditions. That means only around 62 per cent of the registered applications were approved.

This study used the 70 per cent proportion of the registered applications to estimate the current demand within the Ministry's eligibility criteria because this is the percentage declared by the policy makers who have more experience in estimating the demand. The alternative figure of 62 per cent declared in *Social housing (1973-2010)* was not used because it was calculated over a short time only; less than one year and a half. This is still only an estimate but there is no other approach that can be used and at least it gives some indication about the overall demand.

Tables 7.5 and 7.6 below show the number of registered new applications till 2014 in the Housing Assistance Program and Housing Loans Program. These two tables show the waiting list starting from 2011 because the Ministry states that all those who applied before 2011 had already been allocated housing, grants or loans (if they satisfied the conditions of each program) (Ministry of Housing official, interviews, February 2015). Here it is worth pointing out that the data shown in both tables were obtained by the researcher through an email sent by a Ministry of Housing official

in February 2015. That official was interviewed during the data collection for this study in 2013 at the Ministry of Housing and the official agreed to send the most up-to-date data in regard to the waiting list.

Table 7.5: Housing assistance waiting list till the end of 2014 by Governorates

The Governorates	2011	2012	2013	2014	Total
Muscat	6,555	606	335	160	7,656
Al Batinah North	4,319	908	743	460	6,430
Al Batinah South	50	78	174	105	407
Al Dakhiliya	1,847	635	761	303	3,546
Ash Sharqiyah North	3,750	1,105	775	550	6,180
Ash Sharqiyah South	6,369	1,942	2,300	108	10,719
Adh Dhahirah	4,001	995	649	317	5,962
Al Buraimi	7,545	1,135	942	308	9,930
Musandam	3,731	1,156	711	423	6,021
Al Wusta	803	869	522	370	2,564
Dhofar	697	169	140	73	1079
Total number*	39,667	9,598	8,052	3,177	60,494

*These are the numbers of new registered applications in each year

Source: Ministry of Housing official, interviews, February 2015.

Table 7.6: Housing loans waiting list till the end of 2014 by Governorates

The Governorates	2011	2012	2013	2014	Total
Muscat	2,158	249	292	484	3,183
Al Batinah North	1,679	250	150	306	2,385
Al Batinah South	10	29	158	145	342
Al Dakhiliya	526	66	79	120	791
Ash Sharqiyah North	1,482	336	750	879	3,447
Ash Sharqiyah South	1,191	501	530	0	2,222
Adh Dhahirah	857	160	504	422	1,943
Al Buraimi	1,533	251	274	230	2,288
Musandam	853	160	230	265	1,508
Al Wusta	568	192	225	511	1,496
Dhofar	162	33	31	10	236
Total number*	11,019	2,227	3,223	3,372	19,841

*These are the numbers of new registered applications in each year

Source: Ministry of Housing official, interviews, February 2015.

From the above tables it can be seen that the number of registered new applications in the waiting list for both programs is very high in the year 2011 compared with the years 2012, 2013, and 2014. That could be a result of the significant increase in the funding allocations to social housing programs at the beginning of the current Eighth Five-Year Plan (2011-2015) as shown early in this chapter. The following paragraphs explain how the increase in the budget allocations affected the number of registered application in 2011 in three ways.

Firstly, the Ministry of Housing (as stated by the policy makers) was trying in 2008, 2009, and 2010 to process the applications that had been made since the 1990s. There were long waiting lists for both the Housing Assistance Program and the Housing Loans Program. With the low funding allocations at that time (as was shown in Section 7.2 above), the Ministry could not afford to offer adequate assistance or loans for many years (Ministry of Housing officials, interviews, September 2013). Thus, the Ministry refused to register new applications in both programs for a while in many

wilayats (Planning and Statistics Department 2011b). Policy makers declared that the Ministry of Housing decided to process and examine the registered applications on the waiting lists before accepting new applications. In 2011, when the budget allocations for social housing programs were increased, the Ministry then started accepting new applications. Therefore, many Omani low income households who had not been able to apply for access to social housing for many years, applied in 2011 (Ministry of Housing official, interviews, September 2013).

Secondly, in 2011, many conditions and criteria in the executive regulation of the social housing policy were changed as a result of increasing the budget allocations (Ministry of Housing official, interviews, September 2013). Policy makers pointed out that by 2011, the average income of Omani people had increased significantly. The executive regulation of the social housing policy, in response to that, increased the condition of the maximum allowable income of applicants. In the Housing Assistance Program, for example, the maximum income of the applicants before 2011 was 129 OMR per month but it was more than doubled in 2011: to 300 OMR at the time of registering and 400 OMR when their turn comes (Ministry of Housing 2011; Planning and Statistics Department 2011b). In the Housing Loans Program, the maximum income of applicants was changed from being between 130 OMR and 250 OMR to being between 301 OMR to 400 OMR per month (Ministry of Housing 2011; Planning and Statistics Department 2011b). These amendments, without doubt, allowed many people to be eligible who were previously not eligible and so the number of applications increased.

In general, the amendments in the executive regulation of the social housing policy seem also to have had a great effect on the number of registered applications in the Housing Loans Program not just in 2011 but also in 2013 and 2014. For instance, at the end of the year 2013, the maximum loan provided by this program , was increased from 20 thousand OMR to 30 thousand OMR (Almaamary 2014). The monthly instalment decreased from 25 to 20 per cent of the borrower's income (Almaamary 2014). These changes have all influenced the demand for this program. That was clear in Table 7.6 where more applications were registered in 2013 and 2014 compared with 2012.

A third reason that the registered applications in 2011 were high in both programs is that applicants became aware of an increased budget allocation for social housing. The Ministry interviewees indicated that because there was an increase in the budget allocations, the willingness of people to apply for the social housing programs increased noticeably (Ministry of Housing official,

interviews, September 2013). One of the policy makers explained that some low income people might not previously have applied as they knew that there was a big waiting list before 2011. The significant increase in the budget allocations affected the view of low income Omani residents in regard to the likely period required to get access to social housing programs. Increased funding meant that people felt they were more likely to get access to social housing within a shorter period. Therefore, low income people were encouraged to apply in 2011, resulting in the large number of registered applications in 2011. Here, it is worth pointing out that the budget allocation for the Housing Assistance Program was increased again in 2012 as was described in Section 7.2 above. This could be a reason behind the high number of registered applications in 2012 in this program compared with 2013 and 2014 (see Table 7.5).

Going back to the year 2011, all these circumstances (opening the door to register new applications, amending some conditions for eligibility, and increasing the willingness of Omani resident to apply) influenced the total number of registered applications on the social housing lists in both programs in that year. That was obvious in the two tables above in which around 64 per cent of the total number of the applications from 2011 till 2014 in the Housing Assistance Program were made in 2011. In addition, about 55 per cent of the applications in the Housing Loans Program were made in that year.

From the above tables it can also be seen that the total numbers of registered applications in the Housing Assistance Program are much bigger than those in the Housing Loans Program. That could be due to the nature of the support provided by each program. In the Housing Assistance Program, the support is a grant, free of charge, but in the second program the support is a loan. Logically, the willingness of people to apply to get access to free assistance is more than their willingness to get access to a loan. In addition, there is no specific waiting list for those who want to apply to have a social housing unit through the Residential Units Program. All allocations for a social housing unit are made by the Ministry of Housing from the Housing Assistance Program waiting list. As a result, the number of applications on this waiting list is much bigger than the number of registered applications on the Housing Loans Program waiting list as was clearly shown in the two tables above.

The current demand for social housing based on the number of eligible households is then calculated using 70 per cent of the registered applications. This need is estimated as at the end of the year 2014. Table 7.7 shows that the total number of registered applications in the Housing

Assistance Program from 2011 till 2014 was 60,494. Therefore, the estimated current demand for this program is 42,346 households. In contrast, the estimated demand for the Housing Loans Program is around 13,889 households as the total number of registered applications is 16,469. For the Residential Units Program, it was mentioned that there is no specific waiting list. As a result the total estimated social housing need for the three programs is (42,346 + 13,889) 56,235 households. It was argued in this study that this method gives a good general indication of the real or actual social housing need in Oman.

Table 7.7: The estimated demand for the Housing Assistance Program and Housing Loans Program till 2014 using the waiting list method

Name of the Program	Number of registered applications 2011-2014	Estimated demand (70% of the registered applications)	Total estimated demand for the two programs
Housing Assistance Program	60,494	42,346	56,235
Housing loans Program	19,841	13,889	

The above discussion has revealed that there were around 56,235 households in Oman seeking access to social housing at the beginning of 2014. Here it is good to mention that not all these households have applied to have a new housing unit. Some of them may have applied to have financial support (grant or loan) to extend, maintain, or restore their old houses. The use of the traditional paper-based system by the Ministry of Housing in receiving applications and allocating and delivering social housing does not allow us to differentiate between the need for 'a new house' and the need for 'renovating, maintaining or extending an old one'. Nevertheless, this study assumes that all the 56,235 households are currently in some form of housing need.

In summary, this subsection aimed to estimate the current demand for social housing using the waiting list method. The estimation reveals that there are two long waiting lists representing around 56,235 eligible households: 42,346 households have applied to get access to housing assistance and 13,889 households have applied to get an interest-free housing loan. Although these applications are only an estimation of the actual social housing demand as defined by the eligibility criteria, the existence of the two waiting lists is an indication of the inability of the policy to provide adequately for low income social housing needs. Therefore, this study argues that the policy is not effective , in

achieving its aim to provide an adequate amount of social housing for the needy low income Omani people. Many other social housing programs in other countries were also, it was found in the literature, unable to meet their targets in providing enough social housing (Omar 2003; Wakely 2014). One explanation for the inability of the social housing programs to provide for current social housing demand lies in the interaction between funding allocations and social housing demand.

In this subsection, this study found that funding allocations have influenced the social housing demand directly, especially in 2011, in different ways. In Section 7.2 above, it was shown that the increase of budget allocations was due to the increase in revenue in Oman which itself was due to the increase in the oil price. Oil is the major contributor to Omani revenue. In other words, the increase of the oil price has influenced measures of the demand for social housing. On the other hand, in Section 7.1, it was shown that the increase in the funding allocations has a direct influence in the social housing supply. The Ministry of Housing in the current Eighth Five-Year Plan provided more social housing units and benefited more households. Thereby, it seems that the economic circumstances, controlled mainly by the oil price and Oman's revenue, have an influence on the social housing demand as well as the supply. This explains the reason behind the inability of the social housing policy to provide the required demand. Social housing policy seems, thus, to spin in a circle. Those people who benefited from the social housing policy (and thus were taken out of the waiting list) were replaced by new needy low income people. Figure 7.13 below shows this relationship between the oil price, budget allocations, social housing demand, and social housing supply in Oman as the findings of this study indicate.

Figure 7.13: The influence of the oil price on the social housing demand and supply in Oman
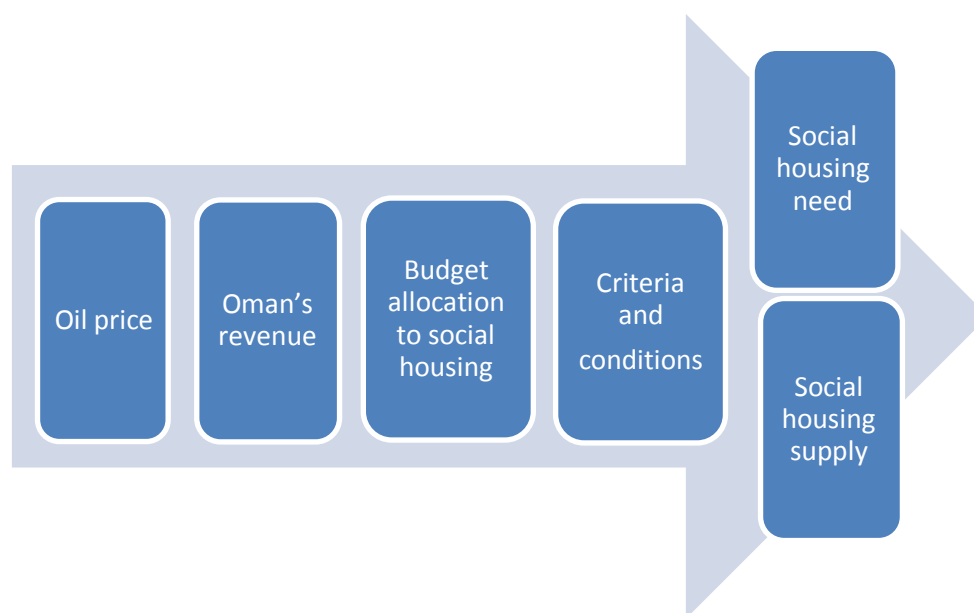
7.3.1.4 The Urgency of the Social Housing Problem

As the previous sections have shown, there is still substantial present-day unmet demand for social housing in Oman. Before attempting to discuss the quantum of the future demand (beyond 2015), this section will outline the approximate wait time for current social housing applicants for both grants (the Residential Units and Housing Assistance Programs) and loans (Housing Loans Program) as this will provide an accurate picture of the current demand for social housing and the timeframe in which that demand might be satisfied. The budget allocations as well as the calculation of the average assistance and loan that are estimated in this section will be explained in more detail in Section 7.4.2 and Section 7.4.3.

This study found that people who currently have applications submitted for housing assistance (Residential Units and the Housing Assistance Programs) will, under the current funding and supply model, get access to social housing after the year 2026. This is demonstrated by the following calculation. The current demand (to the end of 2014) for housing assistance is 42,346 households. That means the budget required to meet this demand is 958,882,824 OMR which is calculated by the number of households (42,346 households) multiplied by the average assistance for each household (22,644 OMR). It will take around 12 years to meet this current demand for housing assistance (Residential Units and the Housing Assistance Programs) based on current average rates of provision as shown from the following calculation. The budget to meet the demand for housing by the 42,346 households who had applied at 2014 is 958,882,824 OMR. The annual national

budget allocation for housing assistance is 80,000,000 OMR. That means it will take 12 years (958,882,824/80,000,000 OMR) at the current rate of annual budget allocation to meet this demand. The implication here is that the current demand, based on the assumptions used in this study, will not be fulfilled until 2026.

The demand for housing assistance by those who had applied in the year 2011, as this research estimates, will not be met before the year 2021. There were 27,767 eligible households at the end of 2011 (70 per cent of the 39,667 households on the waiting list). By using the above assumptions in regard to the estimated budget allocations and the average amount of each assistance package provided, this study found that there is a need for around 628,755,948 OMR (27,767 needing assistance × 22,644 OMR) to meet all this demand. In other words, it will take around (628,755,948 / 80,000,000) 7.9 years to meet the demand for social housing applied for in the one year only: 2011 (which, as will be recalled, is the year the eligibility criteria were changed). Nevertheless, one of the policy makers stated that the aim of the social housing policy is to reduce the average time of waiting to get access to social housing to not more than five years. This waiting period, as this research argued, is not achievable without considerable new and additional investment of funds for social housing. The demand for the housing assistance at the end of the year 2011 will not be met (2014 + 7.9 years) before the year 2021. This implies that more funds are urgently needed to cover even the current demand.

On the other hand, for the housing loans, the real demand to the year 2014 is 13,889. This is 70% of the waiting list of 19,841 shown in Table 7.6. That means the needed budget to meet this demand is 416,670,000 OMR and this is calculated by the number of households (13,889 households) multiplied by the average loan for each household (30,000 OMR). Therefore, it will take around 22 years to meet the current demand for housing loans. This timeline is based on a similar calculation to that above: the budget to meet demand for providing for 13,889 households is 416,670,000 OMR but the annual budget allocation for the housing loans is 19,000,000 OMR. That means it will take 22 years (416,670,000/19,000,000 OMR per year) at the current rate of annual budget allocation to meet the demand for housing assistance grants applied for by 2014. The implication here is that the current demand, based on the assumptions used in this study, will not be met until 2028.

In 2011, there were 7,713 households who had applied and were eligible for a housing loan. This is 70% of the waiting list of 11,019 households who had applied as show in Table 7.6. By using the above assumptions in regard to the estimated budget allocations and the average amount of each

loan, this study found that there is a need for around OMR (7,713 loans × 30,000 OMR = 231,390,000 OMR) to meet all this demand. In other words, it will take around (231,390,000/ 19,000,000) 12 years to meet the demand for social housing that existed in one year only: 2011. The demand for the housing loans from the year 2011 will not be met (2011 + 12 years) before the year 2023.

Based on the calculations presented in this section, there are two major implications. The first is that, from the findings of this research, low income Omani residents can gain a clear picture of the true waiting time for social housing assistance. For example, those low income Omani residents who applied in 2015 and after will have at least a ten year wait (from 2015) to benefit from any social housing (units, grants, loans). This means that low income households seeking social housing will for the first time have some clarity to plan their futures. The second implication is that this information provides the Ministry of Housing with evidence of the financial investment needed to cover current social housing demand. This can equip the Ministry with the information and transparency needed to better plan future social housing provision. This study provides the Ministry with credible evidence to advocate internally for additional social housing budget allocation. This is important if the Omani Government is to achieve its objective of raising the living standard of Omani citizens through housing, as outlined in Chapter Two.

7.3.2 Social Security Household Method

In this subsection, this study attempts to estimate the actual current demand for social housing using the number of the 'social security households'. There is a close relationship between the need for social housing and social security households. To be able to show these connections, this section describes the eligibility criteria to get access to the social housing programs, the concept of social security households, and the eligibility criteria to get access to this social security service in Oman.

7.3.2.1 Eligibility Criteria for Social Housing

Getting access to any of the three social housing programs requires fulfilling the following basic conditions (Ministry of Legal Affairs 2010, p.3):

1. The applicant should have an Omani nationality.
2. The age of the applicant should not be under the age of twenty one years unless he/she is the only breadwinner for his/her family at the application time.

3. The applicant and his wife should not have any suitable residential unit, or did not sell or rent their housing in order to benefit from this policy.

4. The applicant and his wife must not have previously benefited from a residential unit or housing assistance or loan in accordance with the provisions of this social housing policy, or any other laws or regulations that support them to build or buy a house.

5. The applicant should not be employed in a job that allows him/her to get a housing loan unless he/she is retired and has never got a housing loan from his/her previous work.

6. The applicant and his wife should not have any real estate or land that parallels the price of the offered housing unit or housing assistance or housing loan unless they have a land on which the required unit will be built (Ministry of Legal Affairs 2010, p.3).

These are the basic criteria that applicants should fulfil to be eligible and so benefit from these programs. These criteria relate to the social and economic aspects of the applicants (and their household). In addition, there are conditions relating to the structural and technical aspects of their old housing if they have an old one. Applicant's age, working status, and marital status are examples of the social criteria while the estimated values of the family properties are some economic conditions.

In addition to the basic criteria, the monthly income of applicants is the most important aspect in getting access to social housing in Oman. According to the executive regulation of the social housing policy, the monthly income of the household should not exceed 400 OMR to get access to the Residential Units Program but in the Housing Assistance Program the income of the applicant (rather than the household) should be not more than 300 OMR (Ministry of Housing 2011). In contrast, for the Housing Loans Program, the monthly income of the applicant should be more than 300 and not more than 400 OMR per month at the time of registration and not more than 600 OMR per month at the time of receiving the loan (Ministry of Housing 2011).

In general, according to the executive regulation of the social housing policy the applicants can benefit from the Residential Units Program or Housing Assistance Program in any of the following cases (Ministry of Housing 2011, p.2):

1. A divorced, abandoned, or a widowed woman.

2. A woman who is married to a non-Omani and who has children living with her in Oman continuously and permanently, provided that the husband's monthly income shall not be more than 300 OMR,

3. A married man or a man who supports his family or his minor brothers whose father is deceased,

4. A family of a convicted income earner,

5. Orphaned Omani children whose father died or of unknown father or parents, and Omani children whose father is deceased and their mother is non-Omani.

On the other hand, the housing loans may be awarded in any of the following cases:

1. A married employee who supports his family,

2. A divorced working woman who takes care of her children in accordance with judicial verdict,

3. A working widow who takes care of her children,

4. A working woman who is not married and who is the only supporter in her family (her parents and her small sisters and brothers) and

5. A working woman who is married to a non-Omani and who has children living with her in Oman continuously and permanently, provided that the couple's total monthly income shall not be more than 400 OMR at the time the application is made (Ministry of Housing 2011, pp.2-3).

A housing loan application may be reassigned as a housing assistance grant or housing unit and vice versa if it fulfills the terms and conditions. The applicants should also provide a new form requesting the transfer of their applications to the desired one (Ministry of Housing officials, interviews, September 2013; Planning and Statistics Department Oman 2011b). The registration date provided in the application should be the same during the transition. It is worth pointing out that applicants cannot benefit from more than one program. For example, those who have obtained a house through the Residential Units Program cannot get support through the Housing Assistance or Housing Loans Program to maintain or extend the house. Applicants are merely allowed to benefit from one program during their life as stated by the executive regulation of the social housing policy (Ministry of Housing 2011).

Overall, this policy gives considerable attention to women. The interviewed policy makers confirmed that the social housing policy in Oman was supportive of vulnerable women represented by widows, divorcees, and women who had been abandoned (Ministry of Housing official, interviews, September 2013). Many researchers have supported this approach where women should be given priority in getting several other social welfare services; especially mothers who take care

of their children alone (e.g. Baden 1992; Callaghan, Farha & Porter 2002). For instance, Callaghan, Farha and Porter (2002) have argued that women are more vulnerable than men in facing economic and social challenges and therefore they should receive extra attention in the society. This current study observes that the Omani social housing policy seems to reflect the overall Omani culture and international trends where women are given, at least in theory, greater priority and more attention; especially when they do not have a man sharing with them the responsibility of raising the children.

7.3.2.2 'Social Security Households' Concept

'Social security households' or 'social welfare households' are terms that represent Omani individuals and families who receive a monthly salary from the Omani Government as a grant as they do not have a stable income and/or a close relative responsible for providing an income (Ministry of Social Development 2013). The conditions to benefit from this service were first specified in the 'Social Security Law' which was established in 1984 (Ministry of Legal Affairs 1984). This law aims to help vulnerable Omani people as they cannot afford their basic needs such as food, drink, and clothes. This system aims to raise the living standard of those needy people in the Sultanate. It is an attempt by the Omani Government to raise the level of social security and achieve equity among Omanis (Ministry of Social Development 2014).

Besides the monthly salary, there are other benefits that those social security households can get compared with other Omani families. Some of these services (but not limited to those on this list) are 1,500 scholarships providing free tuition fees every year for the children of social security households to access private higher education institutions, exemption from paying the birth certificate fee, and provision of a medical aids exchange for persons with disabilities such as glasses, hearing aids, crutches and wheelchairs (Ministry of Social Development 2013). Above all and most importantly to this study is the eligibility of those families to have access to social housing assistance through the Ministry of Housing.

There are eight categories of household that can benefit from this law and become eligible to have such a monthly salary. These include: Orphans, widows, divorcees, unmarried females, families of prisoners, the disabled, abandoned females, and senior citizens (Ministry of Social Development 2013). For all of these categories it is a condition that they do not have a stable income and/or a close relative responsible for providing an income. The following conditions should be fulfilled by the applicants to get access to this social service:

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1. Divorced woman: a female who did not reach the age of 60 years, who was divorced by her husband and did not remarry.

2. Elders: all males and females above 60 years of age.

3. Abandoned female: a married woman who was abandoned by her husband, providing no known address or means of communication, for at least one year.

4. Unmarried Female: a female more than 18 and less than 60 years of age and never married.

5. Prisoner's family: a family whose provider is jailed for a period more than six months.

6. Orphans: children (males and females) below the age of 18 years, whose father died or of unknown father or parents.

7. Disabled (Ministry of Social Development 2013, p. 1).

The above criteria show clearly why the number of social security households can be used to estimate the current social housing demand for the Housing Assistance Program. Examining both the eligibility criteria for social housing programs (Section 7.3.3.1) and the eligibility criteria for the social security system reveals that households eligible for social security are also the eligible beneficiaries of the Housing Assistance Program (except for the children in the disabled category who will be discussed later). This was also confirmed by the policy makers in the study interviews, who stated that the Housing Assistance Program was established to support social security households (Ministry of Housing official, interviews, September 2013). Another argument supporting this fact is that, with the Housing Assistance Program, the criteria specifies 300 OMR per month as the maximum income of the applicants while the Omani Government in 2012 specified 325 OMR per month as the lowest wage for Omani labourers in both the private and public sectors. This means that Omani labourers cannot benefit from the Housing Assistance Program as their lowest income is more than the maximum allowable income specified for this program.

On the other hand, as per the social security system, Omani citizens are eligible to have access to these services and be classified as a 'social security household' if they do not have a stable income and/or a close relative responsible for providing an income. These families here represent those families who are not working or who are working in small home-based industries such as handicraft and other cottage industries. Although the amount of stable income is not specified in the social security system, it is generally aimed at those who earn less than the lowest legal wage of a labourer (Ministry of Housing official, interviews, September 2013). Based on the above, the social security households are eligible for the Housing Assistance Program.

Here it should be noted that using the number of social security households to estimate the current demand for the Housing Loans Program is not appropriate. That is because the monthly income of the applicants for this program is between 301 and 400 OMR. That means social security households cannot get access to this program because their income is less than 300 OMR. It also means that beneficiaries of this program cannot get access to the social security system. This is also the case with the Residential Units Program as was discussed early in this chapter, where there is no waiting list and units are provided on an order from His Majesty the Sultan. As there is no other data available, this study therefore cannot estimate the current demand using the social security households method for these two programs. The social security households method was only used in examining and estimating the current demand of the Housing Assistance Program.

7.3.2.3 Estimating the Current Demand using the Social Security Households Method

In the same way that subsection 7.3.1.3 estimated the current social housing demand using the waiting list method, this subsection estimates the current social housing demand using the number of social security households. Nowadays, the Ministry of Social Development is responsible for identifying social security beneficiaries by giving them a number called the 'Social Welfare Number' (Ministry of Social Development 2013). Having a number from the Ministry of Social Development means that this beneficiary represents a social security 'household'. The term 'household' here refers to a family that has one person or more receiving a social security salary. This Ministry has a database that shows the number of households that get access to the social security system. This study, therefore, used the available database of the social security households published by the Ministry of Social Development to estimate the current demand for social housing. This seems to be an appropriate method in the absence of any other data provided by the Omani authorities to help in estimating the current demand.

Before dealing with the number of the social security households there is a need to remember that the database used by the Ministry of Social Development includes eight categories such as widows, divorcees, old people and others. Among these categories, is one called 'disabled' which includes two groups:

   1) All citizens, males and females, who are unable to work, and their age is between 18 and 60, and whose official medical examination certifies that they cannot perform any work duties because of an illness or disability.

2) Disabled children who are under 18 years old and their disability is chronic (Ministry of Social Development 2013).

The social housing eligibility criteria stated in Section 7.3.2.1 show that the second group of this category (disabled children) cannot get access to social housing assistance unless they do not have a breadwinner. In that condition it is stated that the age of the applicant should not be less than twenty one years unless he/she is the only breadwinner for his/her family at the application time (Ministry of Legal Affairs 2010). In other words, orphaned children can get access to social housing as they do not have a breadwinner but disabled children whose father is alive cannot get the benefit of such housing (as stated by the policy makers). That does mean disabled children have less opportunities than children who are not disabled. That is because their parents, their father or mother, can benefit from the social housing assistance as long as they belong to one of the categories above and their monthly income is less than 300 OMR. To make it clear, orphaned children are eligible to have access to social housing but children whose father is alive cannot even if they are disabled.

For accuracy, the number of disabled children should be subtracted from the database in estimating the current eligible social housing demand. This is because a child with disability would not normally be eligible to get access to the social security system if their breadwinner's income is above the social security standard. Therefore there is a need to estimate the number of the eligible disabled children and deduct that from the total number of social security households. The total number of the social security households in Oman at the end of 2013 was 84,631 (Ministry of Social Development 2013). The disabled category, both young adult and children, represented around 30 per cent of this number: 25,529. There were no data available that showed the percentage of disabled children within the disabled category. To estimate this proportion, this study relied on the general distribution of disability by age in Oman. According to the National Centre for Statistics and Information, children with a disability represent around 12 per cent of the total disabled population in Oman (NCSI 2014b). The researcher's best estimate for the number of disabled children was 4,941. When this number is deducted from the total number of social security households, the remaining number of households is 79,690.

Therefore, till the end of 2013, there are around 79,690 households seeking access to social housing as a grant rather than as a loan. As some of these households have already benefited from the social housing programs, the number of benefited households should be taken off to show the current actual demand. At the beginning of this chapter, the total number of beneficiaries in each of the

social housing programs was shown. As the estimation here is for those who seek housing assistance but not a loan, the total number of households who benefited from the Residential Units Program and Housing Assistance Program up to the end of 2013 was counted: this represented 32,244 households. By taking this number of households who had already benefited and the number of households that include 'disabled children' away from the total, the estimated social housing demand is 47,446 households as shown in Table 7.8 below.

Table 7.8: The estimated demand for the Housing Assistance Program till end of 2013 by the social security households method

Total number of the social security households till end of 2013	Number of households that included 'disabled children' at that time	Total number of beneficiaries as grants till end of 2013	Total social housing demand
84,631	4,941	32,244	84,631- (4,941+32,244) = 47,446

When the results of using the two separate methods above to estimate the current demand for the Housing Assistance Program are compared, there is a close similarity or correspondence between the two numbers. Using the waiting list method, the estimated demand at 2014 was 42,346. To enable a comparison of the two results there is a need to calculate the demand for the Housing Assistance Program at the end of year 2013. By doing the same calculation for the year 2013, the demand at the end of year 2013 is 40,122 households using the waiting list method. Using the social security households method the demand at 2013 is 47,446 as is shown in Table 7.8 above. The difference between the two methods is around seven thousand households. One of the reasons behind having more demand in the second method could be that not all low income Omani households who get benefit from the social security system need social housing. They could be low income people who already have a house or disabled people with breadwinners who earn over the minimum income . Nevertheless, using the second method was helpful to make sure that applying the figure of 70 per cent of the registered applications to estimate the social housing demand produced a reasonable result.

7.4 Future Social Housing Demand and Supply

7.4.1 Data Sources and Assumptions

One of the tasks of this study was to estimate the future demand for the social housing in Oman. The years 2020 and 2030 were chosen as future benchmarks. To be able to project the future demand, this study relied on the data published by the National Centre for Statistics and Information in a report *Population Projection for the Sultanate of Oman 2015/2040* (NCSI 2014d). This centre is the formal institution that is responsible for providing all the statistical data for all sectors in Oman. Moreover, this centre used the data of the latest census, the 2010 General Census of Population, Housing and Establishments, that was done in Oman as a basis to project the population;. Therefore, the data used in these projections reflect the most recent demographic, social, and economic changes that have occurred in Oman.

Here it is worth mentioning that the data refer to the estimated population but not the number of households. This study, on the other hand, used the number of households in estimating the current social housing demand as well as the future demand. As there is no other source of data in the NCSI project about the number of Omani households in Oman in the coming years, this study uses the estimated Omani population to estimate the number of households. To do so, the number of households is determined by dividing the total population by the average household size.

The National Centre for Statistics and Information showed that the mean Omani household size was 8.5 persons in 1999/2000 and eight persons in 2009/2010 (NCSI 2014a), showing that the mean Omani household size dropped by 0.5 persons in a period of ten years. That was due to the decrease in the fertility rate per woman which was affected by the increase in education for girls and the increasing role of Omani women in the labour market (NCSI 2014b). According to the NCSI (2014b), Omani women's illiteracy ratio decreased from 54 per cent in 1993 to 19 per cent in 2010. This improvement in the education of women has affected the fertility rate directly. In general, the average number of children among women reached six. But there were differences between those Omani women who are educated (a mean of five children per woman) and those who are not educated (a mean of 7.5 children per woman) (NCSI 2014b). Furthermore, the female participation in the labour force has developed significantly during the past two decades coinciding with the improvement in the education level of females. The rate of female participation in the labour force increased from 19 per cent in 1993 to 27 per cent in 2010 (NCSI 2014b).

These social changes in the status of women have influenced the size of the Omani households and the trend is expected to continue in the coming decades according to the NCSI (2014b). For these above reasons, this study estimated that the decrease in the mean size of Omani households will continue at the same rate as between 1999/2000 and 2009/2010: 0.5 person each ten years. Thus, the mean Omani household size is estimated to be 7.5 persons for the year 2020 and seven persons for the year 2030.

To project the future social housing requirements it is assumed that the future proportion of new households in need of social housing will be about the same as it is at the current time. This study assumed that the percentage of total Omani households that will need access to new social housing in 2020 and 2030 is the same percentage as that of the eligible social housing applicants at mid 2013. Mid 2013 is the latest date of available data for the total number of Omani households, so that is the year at which the percentage of social housing demand is calculated (NCSI 2014a). The number of Omani households at that time was 278,891. It should also be noted that this is the number of households of Omani nationals, and not the total of all households in Oman, as only Omani nationals are eligible for social housing.

The number of social housing applicants registered till the middle of 2013 was 53,291 for the Housing Assistance Program and 18,155 households for the Housing Loans Program as shown in Section 7.3. Thus, taking 70 per cent of these two different types of demand (see Section 7.3 for an explanation of this percentage) till mid 2013 provided a figure of 37,304 for the Housing Assistance Program and 12,709 households for the Housing Loans Program. So, the percentage of the eligible households which seek access to social housing in relation to the total number of Omani households is 13.5 per cent for housing assistance and 4.5 per cent for housing loans (as shown in Table 7.9 below). For this reason, this study used a figure of 13.5 per cent of the projected Omani households to estimate the future demand for new housing assistance and a figure of 4.5 per cent of the projected Omani households to estimate the future demand for new housing loans for the years 2020 and 2030.

Table 7.9: The percentage of the current social housing demand (mid 2013) from the current total Omani households

Social housing demand	Number of registered applications till mid 2013	Eligible number (70 per cent of the registered applications)	The percentage of the eligible households in the total Omani households at mid 2013
Housing Assistance Program	53,291	37,304	$(37,304/278,891) \times 100 = 13.5$
Housing Loans Program	18,155	12,709	$(12,709/278,891) \times 100 = 4.5$

7.4.2 Estimating the Future Demand for Housing Assistance

In estimating the future demand for housing assistance, there is a need to examine the housing supply provided by the Ministry of Housing in each year. In practice, the number of assistance cases delivered depends on the budget allocations provided by the government each year as well as the value of each assistance case. As the housing assistance could be provided as grants through the Residential Units Program or the Housing Assistance Program, there is a need to investigate the budget allocations for these two programs.

In Section 7.2 above, it was shown that the budget allocations for the Residential Units Program is not clear. The budget is allocated when there is an order from His Majesty the Sultan. The policy makers interviewed declared that there is no evidence that this program will be provided in the future (Ministry of Housing officials, interviews, September 2013). One policy maker stated that this program is not as active as it was in the past. That was shown in Section 7.1 where the number of households who benefited from this program in the current Eighth Five-Year Plan (2011-2014) is small compared with the Housing Assistance Program; 753 and 14,126 households respectively. From these circumstances as well as the evidence provided by the policy makers, this study assumed that there will be no grants provided through this program for the coming years. Even if

this is not the case, the grants provided will not be comparable to the assistance provided by the Housing Assistance Program, and thus will have less effect on the overall social housing supply.

The Budget allocations as well as the amount of the assistance for the Housing Assistance Program, on the other hand, are clear for each year. Since the year 2012, the average annual budget allocation for this program has been 80 million OMR (Planning and Statistics Department 2013). In regard to the amount of the assistance, in Section 7.1 above, it was shown that the financial assistance provided by this program for each assisted household reached up to 25 thousand OMR in the case of building three bedrooms units and up to 20 thousand OMR to build a unit with two bedrooms. As there is no data available that shows how many households applied to gain access to two bedrooms and how many applied for three bedrooms, there is a need to find out the average assistance provided by this program. In the interviews, the policy makers provided the total money spent as grants by this program since 2012 and the number of the assistance cases. The total amount spent for three years was 261,578,605 OMR and the total number of assisted households was 11,552. Therefore, the average amount of assistance is 22,644 OMR per household.

This study applied the 80 million OMR as the annual budget and 22, 644 OMR as the value of each household assistance grant for the years to 2030. That is because these two amounts reflect the most recent trend in regard to the budget allocations and value of the assistance. Accordingly, the projected future supply is (80,000,000/22,644) 3,533 new assisted households each year. Table 7.10 below shows the number of the new projected households which will benefit from social housing grants from the beginning of 2015 till the years 2020 and 2030, based on these assumptions. Thus, it is estimated in this research that 3,533 households will be assisted in each year for the period 2015-2030 (16 years).

Table 7.10: The projected new supply as grants

Year	New supply (annual supply × no. years)
From the beginning of 2015 till 2020	3,533 × 6 years = 21,198
From the beginning of 2015 till 2030	3,533 × 16 years = 56,528

After estimating the social housing supply for the years 2020 and 2030, there is a need to examine the social housing demand for the same period. As discussed, to estimate the new demand, the total number of the projected Omani population was used. In general, there are three scenarios for the population projections in the official publication (*Population Projection for the Sultanate of Oman 2015/2040):* the high, middle, and low as is shown in Table 7.11 below. Here, it could be noticed that the difference between the three scenarios is not big for the Omani population: a difference of only 37,997 persons between the high and the low scenarios for the year 2020 and 162,541 persons for the year 2030. That is because the current total Omani population is relatively low; around 2,212,693 in 2013 (Ministry of Social Development 2014).

Table 7.11: Omani population projections for the years 2020 and 2030 by the three scenarios

Year	The projected number of the Omani population		
	Scenarios		
	High	Middle	Low
2020	2,630,394	2,612,488	2,595,397
2030	3,306,399	3,220,574	3,143,858

Source: NCSI 2014d

Based on Table 7.11 above and on the estimation used in this research in which the number of households which are in need of housing assistance represents around 13.5 per cent of the total households, the projected housing assistance demand is shown in the Table 7.12 below.

From Table 7.12 below, it can be seen that the total new housing assistance demand for 2020 may range between 46,717 and 47,347 households. In contrast, the total new housing assistance demand for the year 2030 may range between 60,632 and 63,766 households. To identify the unmet demand for social housing, the new estimated supply (3,533 annually) should be subtracted from the total demand as shown in Table 7.13 below. Therefore, it is estimated that the unmet demand for housing assistance may range between 25,519 and 27,347 households in 2020 and between 4,104 and 7,238 households for the year 2030.

Table 7.12: The estimated demand for social housing assistance for the years 2020 and 2030 by the three scenarios

Year	Omani household size	Total no. of Omani households			No. of Omani households who are in need of housing assistance (13.5% of the total)		
		Scenarios			Scenarios		
		High	Middle	Low	High	Middle	Low
2020	7.5	350,719	348,332	346,053	47,347	47,025	46,717
2030	7	472,342	460,082	449,126	63,766	62,111	60,632

Table 7.13: The unmet demand of the Housing Assistance Program for the years 2020 and 2030 by the three scenarios

Year	The unmet demand		
	Scenarios		
	High	Middle	Low
2020	47,347 - 21,198 = 27,347	47,025 - 21,198 = 25,827	46,717 - 21,198 = 25,519
2030	63,766 - 56,528 = 7,238	62,111 - 56,528 = 5,583	60,632 - 56,528 = 4,104

Although there is less demand in 2020 (middle scenario at 47,025 households) compared with the demand in 2030 (middle scenario at 62,111 households) there will be less unmet demand in 2030 compared with the year 2020. These figures are the result of the high rate of supply of 3,533 households per annum which is based on the current budget allocations and the average amount of assistance per household. In other words, although the new projected supply may not be able to meet all the future housing assistance demand, as there is additional new demand each year, it will catch up with most of the new demand. One of the policy makers supported this finding by stating that if the budget allocations for the Housing Assistance Program continue at this rate (80 million OMR annually) this program will be able to provide the needed housing assistance in a short time.

7.4.3 Estimating the Future Demand for Housing Loans

This section will examine the estimated future demand as well as the unmet demand for the Housing Loans Program. The new supply of loans provided by the Ministry of Housing will be projected. The number of the loans distributed depends on the budget allocations provided by the government each year as well as the value of each loan. These loans are only provided by one program: the Housing Loans Program. Therefore, the following paragraphs will examine the projected funds as well as the amount of each loan.

In general, the Budget allocations for this program are determined and identified at the beginning of each five year plan. The interviewed policy makers declared that the budget allocation for this program for the current Eighth-Five Year Plan (2011-2015) is 95.3 million OMR for the period: with an annual average of around 19 million OMR (Ministry of Housing officials, interviews, September 2013). In regard to the amount of each loan, in Section 7.1 above, it was shown that the mortgage provided by this program can reach up to 30 thousand OMR. To estimate the average loan, this study assumed that the total 30 thousand OMR per loan will be the average amount of the loan. That was supported in the interviews where policy makers confirmed that most eligible people who applied to get access to the Housing Loans Program are provided with the maximum amount of the loan. Therefore, this research used it as the average amount for each loan.

The research assumes that 19 million OMR is the annual budget and 30 thousand OMR is the value of each loan for the coming years until 2030. Stability in the budget and allocation for each loan is assumed. Consequently, the projected annual supply for the loans is (19,000,000/30,000) = 633 loans or households per year. Table 7.14 below shows the projected number of the households which will benefit from the Housing Loans Program from the beginning of 2015 until the years 2020 and 2030 based on these assumptions in regard to the annual funds and the average amount of each loan. Thus, 633 households, are estimated to receive a housing assistance loan for each year for the period 2015-2030 (16 years).

Table 7.14: The projected new supply as loans

Year	New supply (annual supply × no. years)
From end of 2014 till 2020	633 × 6 years = 3,798
From end of 2014 till 2030	633 × 16 years = 10,128

After estimating the supply for the years 2020 and 2030, there is a need to examine the demand for the same period. The demand for the social housing loans, was estimated based on the projected Omani population. Table 7.15 below shows the estimation used in this research in which the number of households which are in need of a social housing loan represents around 4.5 per cent of the total households. The projected housing loan demand is also shown in Table 7.15 below.

Table 7.15: The estimated demand for the Housing Loans Program for the years 2020 and 2030 by the three scenarios

Year	Omani household size	Total number of Omani households			No. of Omani households in need of housing assistance (4.5% of the total)		
		Scenarios			Scenarios		
		High	Middle	Low	High	Middle	Low
2020	7.5	350,719	348,332	346,053	15,782	15,675	15,572
2030	7	472,342	460,082	449,126	21,255	20,704	20,211

Table 7.15 indicates that the demand for social housing loans for 2020 may range from 15,572 to 15,782 households, whilst that for the year 2030 may range from 20,211 to 21,255 households. To identify the unmet demand, the estimated loan supply (633 annually) is subtracted from the total demand as shown in Table 7.16 below. Hence, it is estimated that the unmet demand for the Housing Loans Program may range from 11,774 to 11,984 households in 2020 and between 11,083 and 11,127 households for the year 2030.

Table 7.16: The unmet demand of the Housing Loans Program for the years 2020 and 2030 by the three scenarios

Year	The unmet demand		
	Scenarios		
	High	Middle	Low
2020	15,782 - 3,798 =11,984	15,675 - 3,798 = 11,877	15,572 - 3,798 = 11,774
2030	21,255 - 10,128 = 11,127	20,704 - 10,128 = 10,576	20,211 - 10,128 =10,083

Even though there is less demand in 2020 (middle scenario at 15,675 households) compared with the demand in 2030 (middle scenario at 20,704 households) there will be less unmet demand in 2030 compared with the year 2020: 11,877 households for the year 2030 and 10,576 for the year 2030 (using the middle scenario). This is because the increase in demand is expected to be less than the rate of the supply. The demand, in this case, is affected by the population growth but the supply is influenced by the budget allocations.

7.4.4 The Overall Future Social Housing Demand

The subsections 7.4.2 and 7.4.3 above showed the estimated unmet demand for the Housing Assistance Program and Housing Loans Program for the years 2020 and 2030. This section presents the estimated overall unmet demand for social housing. By adding the unmet demand for the Housing Assistance Program and the unmet demand for the Housing Loans Program, the overall unmet demand is identified (see Table 7.17 below). This table shows that the unmet demand for the Housing Assistance Program is more than the unmet demand for the Housing Loans Program for the year 2020. That could be because the current demand (from 2011 till end of 2014) for housing assistance is more than the current demand for housing loans as shown in Section 7.3 above: 42,346 households for housing assistance and only 13,889 households for housing loans.

Table 7.17: The overall unmet demand for social housing (grants and loans) for the years 2020 and 2030 by the three scenarios

Year	The overall unmet demand for social housing		
	Scenarios		
	High	Middle	Low
2020	27,347 + 11,984 = 39,331	25,827 + 11,877 = 37,704	25,519 + 11,774 = 37,293
2030	7,238 + 11,127 = 18,365	5,583 + 10,576 = 16,159	4,104 + 10,083 = 14,187

But for the year 2030, it is the opposite: where the estimated unmet demand for housing assistance is less than the unmet demand for housing loans. For the middle scenario, for instance, the unmet demand for housing assistance is 5,583 whereas it is estimated to be double that for the housing loans: 10,576 households. That does not mean that there will be less demand for the Housing Assistance Program; rather that the annual supply from the Housing Assistance Program is expected to be much higher than the supply from the Housing Loans Program. The annual supply for housing assistance is estimated to be 3,533 households assisted while it is expected to be 633 households for housing loans. One of the policy makers supported this finding by stating that if the budget allocations for the Housing Assistance Program continue at this rate (80 million OMR annually) this program will be able to eventually provide for most of the demand (Ministry of Housing officials, interviews, September 2013).

In other words, the social housing policy seems to be more effective in meeting the demand for housing assistance compared with the housing loans. The implication here is that more budget resources should be allocated by the government to meet the growing demand for the Housing Loans Program. That could also be met by reducing the maximum amount of each loan for those who applied to extend or maintain their home or to more closely align the amount loaned to the household's needs. As was shown above the maximum amount of the loan is 30 thousand OMR but the average provided amount was also 30 thousand OMR. That means there are some applicants who applied only to extend or maintain their houses but the Ministry provided them with the maximum amount of the loan. If the amount of the loan was reduced, then this could provide more funds to meet the demand of the housing loans. Reducing the amount of the loan could also make

more funds available to the Housing Assistance Program for the direct provision of new homes to those who may not have a home or land. Therefore, more households that appear not to have a home or land will get access to necessary funds to build a home.

Nevertheless, as far as the projected trends of supply and demand for both the housing assistance and housing loans programs go, unmet demand is expected at both 2020 and 2030. Table 7.17 above shows that the total unmet demand in 2020 may range from 39,331 households (at the high population growth scenario) down to 37,293 households (at the low population growth scenario). Whereas, for the year 2030, the unmet demand can range between 14,187 households and 18,365 households. Therefore, it seems that the social housing policy is performing a significant role where the expected unmet demand seems to be decreasing over time. This could be attributed to the increase in the budget allocations from the government, especially in the current Eighth Five-Year Plan. If this investment in social housing remains steady and demand is stable, the policy may not be effective in meeting the demand for the years 2020 and 2030 but it will have succeeded in reducing the gap between supply and demand.

Chapter 8. Conclusions, Recommendations, and Further Research

8.1 Introduction

This research evaluated the effectiveness of the social housing policy in Oman, which is one of a number of policies established to raise the living standards of low income Omani citizens. There has been very limited research on Omani social housing. This study investigated the social housing policy's achievements, explored and reviewed its outcomes, and thus examined its attainments. Specifically, the research evaluated the adequacy of the social housing units provided by the Ministry of Housing through this policy in terms of both objective indicators and residents' perceptions. The study then identified and examined the number of houses provided through this policy as well as the number of households who benefited from the three programs that make up the overall social housing policy. Then the study estimated the future demand for social housing, estimated the potential supply and assessed future supply against demand. The research is intended to help policy officials to identify the successes and failures in implementing the current social housing policy. The findings will also be beneficial to the households who benefit from the policy and the private sector who can contribute in building and providing adequate social housing.

This final chapter starts by answering the three research questions identified in Chapter One and presenting the empirical findings, then reflecting on the implications of the findings. The chapter then provides recommendations, which represent the answer to the third research question. The chapter ends by identifying areas that need further research.

8.2 Answering the Research Questions

This research sought to identify if there were gaps between the social housing policy objectives and the policy's implementation and to investigate these possible gaps. The general aspiration of this policy, as was confirmed in the interviews, is raising the living standard of poor Omani families by providing adequate social housing in sufficient quantities. To address these two issues, the research raised the questions identified in Chapter One and repeated below. This section, therefore, presents the summary of key findings of this study by answering the three research questions.

8.2.1 Question One: Adequacy

To what extent has the social housing policy in Oman been able to deliver adequate housing? To answer this question, this research examined a range of issues, particularly the definition of housing

adequacy and the indicators by which it is assessed as well as the approaches used in the literature to measure housing adequacy. Once a workable definition and set of indicators had been identified, the research studied the influence of the current social housing policy and its implementation on the social housing adequacy in five cities in the Sultanate.

The study found that there is no agreement in the literature about the meaning of 'housing adequacy' and the concept has different components. Housing adequacy, in this research, encompasses seven components, namely: legal security of tenure, affordability, the services provided, habitability, accessibility, location, and cultural adequacy. This study argues that these seven components are comprehensive because they address all the critical housing adequacy aspects used in the literature as was shown in Chapter Two (see Table 3.1). The structural condition of the unit itself, the services inside and outside the house, the space available, the infrastructure serving the unit, the design, the cost, the suitability of the location, the participation of the residents in the overall delivery process to express their cultural demand and preferences, and residents' right to have home ownership are all addressed within these seven components. This implies that these seven components, which were outlined by the United Nations Committee on Economic, Social and Cultural Rights and used by the UN-HABITAT, are suitable because of their inclusivity and coverage. This study also claims that applying these seven components, in measuring the adequacy of the social housing units in Oman, is logical and reasonable because they are adopted by UN-HABITAT to evaluate the adequacy of housing in developing countries and Oman is classified as a developing country. This implies that these components could also be used to examine the adequacy of other types of houses in Oman or any other developing country.

Another important issue in this research is how these seven components of housing adequacy are measured. This study argues that the twelve indicators identified and used to measure the above components were carefully chosen, and modified for this study, to be applicable to Oman (and potentially to the Arab Gulf States, the Middle Eastern nations, and other Muslim countries). Although UN-HABITAT established some indicators to measure the components of national housing adequacy, this study modified these indicators specifically to suit the Omani context. Therefore, it is on the basis of these components as well as on the Omani social, economic, and cultural context that indicators used in this study were selected and modified. In supporting this argument, a new indicator was included to measure the adequacy of the location of houses in relation to proximity to a mosque. This indicator, even though it is not used widely in the literature, is important to the Muslim religion and culture and community in which Muslims perform five

prayers a day. In addition, the suitability of the proposed indicators was reinforced by the policy makers in the interviews in defining the adequacy concept in relation to the social housing. Moreover, there is evidence to suggest that the indicators used in this study are sufficient, and correlate with one another to the degree that they represent one concept: housing adequacy. Supporting that, the Cronbach's Alpha was measured and the result of this correlation was more than the recommended 0.7. Therefore, this study, by undertaking these modifications, contributes to the body of knowledge because it creates a model that includes twelve measurable indicators for housing adequacy which can be applied nationally. The application of this model has also produced a base-line set of social housing adequacy data for the Omani Government (see Appendix 8).

The results of this study also strongly emphasise the need for the two assessment approaches (the objective approach by using quantifiable standards and the subjective approach by gaining residents' views) in measuring housing adequacy as they complement each other and give a much clearer picture of the housing outcomes. This study demonstrates that these two approaches have to be coupled together to successfully gain a measure of the overall adequacy. A good example arose from the assessment of the social housing provided by the Residential Units Program which was found to be objectively adequate according to the UN-HABITAT indicator of affordability, as it is provided free of charge, but subjectively it was perceived as not adequate where 41.5 per cent of the participants stated that the cost of the house was inadequate and 20.6 per cent stated that they were neutral about its adequacy. That was due to the additional costs such as furniture for the house, maintenance (the resident's responsibility after one year), and the costs of any other changes that needed to be made to the house which affected the residents' views about the affordability of the house. This goes to suggest two things. Firstly, the on-going costs of the houses, especially the cost of maintenance, should be considered by the Ministry of Housing in delivering social houses. Secondly, which is more important to the academic research, is that the UN-HABITAT objective approach alone is not appropriate without applying the participants' views and aspirations. Adequate housing from the planners', policy makers', and designers' points of view may not be adequate to the residents living in such houses. This represents one of the main contributions of this study to the body of knowledge where the importance and the validity of using two approaches rather than one in examining the adequacy of housing is recognised.

Using the two measurements to assess the adequacy of the social housing units in Oman, this study concludes that the concept of housing adequacy does not describe a dichotomy (either adequate or inadequate) but rather it describes a continuum. The research found that it is hard to identify a specific and definite boundary between 'adequate' and 'inadequate' housing. The measurement of

the concept of 'adequacy' seems not to imply a single cut point or boundary between 'adequate' and 'inadequate'; rather there are degrees of adequacy so there is no clear and unambiguous answer to this research question. As the term itself is complex to measure and quantify, knowing the adequacy of the houses provided is also not an easy task. The difficulty of measuring the effectiveness of any public policy in achieving its objectives is supported in the literature where it was described as a 'wicked problem' (e.g. Head 2008; Groenhart 2010). This implies that in measuring the adequacy of housing, researchers should consider the adequacy of houses on a scale rather than using a simplistic dichotomy measuring 'adequate' or 'inadequate'. There is a scale of adequacy where houses can be located between the top half or the bottom half of the scale.

In evaluating the social housing adequacy in Oman, this study found that more houses were classified as less adequate than were classified as more adequate. This result illustrates that the services provided such as water and paved roads, the maintenance provided by the Ministry of Housing, the structural condition of the units, and the location of such units in relation to services and facilities are not implemented well for most of the social housing units in the study area. In examining which of these issues were considered to be not adequate, and which thus influenced the overall adequacy scores of the units, the indicator scores were measured. The result of this examination shows that the wheelchair ramp indicator, which represents the accessibility component, and the Ministry's maintenance were the indicators that were the most likely to lead to an assessment that the housing was inadequate, in both objective and subjective terms. That is because only 4.9 per cent of the houses were provided with a wheelchair ramp and 90 per cent of those houses that were assessed required major repairs or maintenance work. This study argues that the problems arising from an entrance that was inaccessible for disabled people and the absence of maintenance by the Ministry (after one year) have an effect on the participants' opinions about the adequacy of the housing units. This concurs with the finding of Rahman, Al-Harthy & Al-Arifi (2002) that around 89 per cent of the respondents have stated that the maintenance aspect is a major problem facing people living in social housing in Jibrin in Al Dakhiliya Governorate (as was discussed in Chapter Three). This is also in agreement with evidence in the literature indicating that the design of the house and the provided maintenance influenced the opinion of many residents about the adequacy of their units (e.g. Amerigo & Aragones 1997; Isa & Jusan 2012; Jiboye 2010; Molin et al. 1996). This highlights the need for further actions in the area of social housing in Oman, in regard to the design as well as the maintenance of units, to improve housing conditions. The Ministry of Housing, as this study recommends, should work with the beneficiary before building the house so that the desired design of such units will be achieved. To maintain the

adequacy of the social housing, it is also recommended that the maintenance and repairs of the provided units should be undertaken continually beyond the current one-year limit as the low income people cannot afford to maintain the home.

The adequacy of the living space provided in the social housing was also one of the drawbacks of the social housing policy, as this study shows. Around 63.5 per cent of the surveyed social housing units had an average of more than two persons in each bedroom. Without doubt, this has a strong effect on the participants' views about the adequacy of the living space in their housing units, where the majority of the participants (59.2 per cent) stated that the number of bedrooms was inadequate. This result is in agreement with the results of Rahman, Al-Harthy and Al-Arifi's study (2002) where it was clear that the social housing in Oman is overcrowded. Knowing the average Omani household size is large (around eight persons in 2010 (NCSI 2014a)) indicates a need to provide social housing units with a larger number of bedrooms.

Although the research identified the above weaknesses in the social housing policy in Oman, it also found that the policy is effective in providing an adequate location in regard to the health facilities as well as access to the mosques: more than the half of the social housing units were located within two kilometres of the nearest health centre or hospital and around 75.5 per cent were located within 400 metres of the nearest mosque. This reflects the attention given by the Ministry of Housing to choosing adequate locations that are accessible to health facilities. The success in relation to access to a mosque reflects the fact that most of the social housing projects provided through the Residential Units Program are delivered with a mosque as was discussed in Chapter Two. This implies that the social housing policy in Oman is effective in responding to the community's religious needs by providing a nearby place for worship.

In regard to the adequacy of the services provided to the social housing units, this study found that the connection of the social housing units with the internal as well as the external services (such as the availability of the piped drinkable water, network sewerage systems, and paved roads) depends on the location of the social housing units in the different cities. As these services are not provided in all places in the different cities in the Sultanate, the connections of these services with the social housing units varies from one location to another even within one city. This implies that there is a need to assess the availability of external services in areas before building such units (or even in choosing their location) as that will help to create social housing units connected to adequate services. Knowing that different ministries and authorities have the responsibility of connecting

such services to houses in Oman raises the issue of cooperation between such ministries and the Ministry of Housing in providing social housing that is connected with adequate services. For example, the availability of piped drinkable water is the responsibility of the Public Authority for Electricity and Water, while network sewerage systems and paved roads are the responsibility of the Ministry of Regional Municipalities and Water Resources and the Ministry of Transport and Communications respectively. The implication here for housing policy formulation is that more collaboration is required between these three ministries and the Ministry of Housing to provide units with adequate services and so achieve adequate social housing in terms of both the housing and the supporting services.

This study also found that factors affecting the assessment of the subjective adequacy of housing (in terms of residents' own perceptions of the adequacy of their housing) include the socio-economic characteristics of the occupants and the objective indicators of housing quality. This was examined using a categorical regression analysis. The regression model used explained about 64.8 per cent of the variance in the subjective overall housing adequacy (as indicated by the residents). The independent variables that strongly affected the overall subjective assessment of housing adequacy were the structural condition, length of time of residence, marital status, household monthly income, living space, connection to water, spending extra money on repairs or expansions, and house choice. This is an indication that these variables can be considered to be well correlated in explaining the participants' views of the adequacy of their housing. This is in agreement with evidence in the literature indicating that some housing characteristics (such as structural condition and the amount of living space) and socio-economic characteristics of residents were predictors of residents' evaluation of their houses (e.g. Galster 1987; Mohit et al, 2010; Salleh et al. 2011). Therefore, these findings suggest that these factors can be used to improve residents' opinions about the level of adequacy of their social units in Oman. This study found that the structural condition of the house had the greatest impact on the participants' views about the adequacy of their housing units and that there was a strong perception amongst the surveyed households that their units were in poor structural condition with the result that their perception of the adequacy of their housing was low. This implies that the subjective assessment of the adequacy of their units by households could be increased if the structural condition of the housing was improved by the Ministry of Housing. This would clearly increase the residents' perceptions of the effectiveness of the social housing policy.

Examining the socio-economic characteristics of household heads in the study area reveals that most of them are classified as low income, illiterate, divorced women, disabled, or unemployed. Therefore, this study argues that the social housing policy in Oman is effective in benefiting the most needy people and is well targeted at the most vulnerable Omani people. For this reason, the study recommends that the Omani Government continues with this policy as it will contribute to the government's overall aim of raising the living standard of the Omani citizens as was shown in Chapter Two.

8.2.2 Question Two: Demand and Supply

The second aim of the social housing policy is delivering a sufficient number of social housing units for eligible Omani citizens to meet the need for social housing now and in the future. To be able to investigate this aim, this research asked the following question:

Does the social housing policy in Oman deliver a sufficient quantity of housing?

Despite stringent data collection efforts, this study found it difficult to measure and examine the actual demand for social housing in Oman because of the complexity of the system used. The social housing waiting lists available at the Ministry of Housing, as was confirmed by the interviewed policy makers, include all those who apply for housing, which includes those who are eligible and those who are not eligible. Nevertheless this study, by using the policy maker interview results, was able to estimate the current demand where it was found that the actual (or eligible) demand represents around 70 per cent of the total number of applications on the waiting lists. Therefore, this study argues that the current demand for social housing in Oman is not clear even for the Ministry which manages the lists as the waiting lists do not represent the actual demand for social housing. Moreover, the traditional system used in filtering the applications, as this study demonstrated, is also not effective as a means of determining how many applicants applied to have a new unit and how many of them applied to extend or renovate their old house. As the actual demand is not clear, the plan and thus the budget allocation to meet such demand, will not be effective as the literature has shown (e.g. Newhaven Research 2010). This suggests that there is a need to find a way or system that enables the creation of a clear-cut waiting list in which the applications represent the actual demand, and the applications are re-registered and re-assessed regularly to ensure accurate data. In this way, the plan can respond to the current as well as the future social housing demand in Oman.

There are good arguments for suggesting that the social housing policy in Oman has played a significant role in increasing the level of access to home ownership among the Omani citizens; 83 per cent of Omani households had access to home ownership in 2013. Although not all of that was due to the social housing policy, this study argues that the Residential Units Program has played a significant role in providing home ownership to many low income households as the units provided by this program represent 2.5 per cent of the total housing units in Oman. In examining the current supply of social housing, this study also found that, although the number of social housing units and the number of households who benefited from this policy have increased since 1973, most of the social housing has been provided during the current Eighth Five-Year Plan; representing 42 per cent of the total assisted households through its different programs. That implies the significant recent attention from the Omani Government to low income Omani citizens.

The degree of involvement of the Omani Government in the overall supply of the social housing, as this research demonstrates, is affected by the international oil price. Whereas the government initiatives in social housing started in the 1970s through different five year plans, most of the supply has occurred in the current Eighth Five-Year Plan (2011-2015) as a direct response to the increase of the oil price and so the availability of government funding. This resulted in a situation where there is no clear general pattern about government investment in social housing. Therefore, this study argues that there is no consistency in the distribution and housing allocation system through the five year plans in Oman. This appears to be inconsistent with the current trend of the supply of social housing in many other countries where the literature shows that the real involvement of many governments has declined with time (see Mukhtar 1997; Olotuah & Bobadoye 2009; Omar 2003). The uncertainty about the international price of oil and the future availability of such a finite resource has a significant implication for the future social housing supply in Oman. Knowing that oil and gas are the main contributors to the Omani Government's revenue strongly raises the issue of the sustainability of the current rate of social housing supply. Additional sources of funding need to be explored and the role of the private sector needs to be investigated.

In connecting the current unmet demand for social housing with the estimated future unmet demand, this study argues that although the social housing sector has received increased attention from the Omani Government in the last four decades, the social housing policy adopted does not seem successful in achieving its objectives and providing a sufficient quantity of social housing (see Figure 8.1 below). This finding concurs with Erguden's (2001) paper where it was shown that most of the housing policies in developing countries have failed to achieve their objectives. In estimating

the real or eligible demand for social housing by taking 70 per cent of the total number of applications on the waiting lists, this study found that at the end of the year 2014, there would be two long waiting lists (one for grants and one for loans) representing some 56,235 households (see Figure 8.1). It was also found that although the gap between supply and demand is decreasing over time the social housing policy will still face an unmet demand for around 37,704 units by the year 2020 and 16,159 for the year 2030. The reason behind these findings, as this study showed, is the hugely increased number of applications which occurred in 2011 as was shown in Chapter Seven (see Tables 7.5 and 7.6).

Figure 8.1: The overall estimated unmet demand for social housing
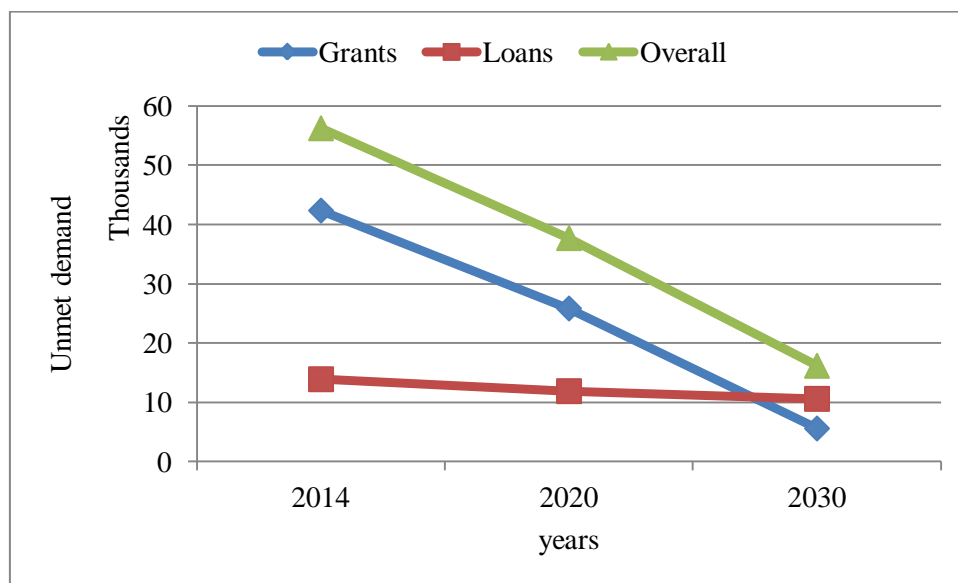
This study argues that there are different economic, political, administrative, and social factors that prevented the social housing policy from achieving its aim in providing for the current and future demand, especially the upsurge in applications that occurred in 2011 which represents 63 per cent of the total current demand. In regard to the economic factors, the oil price, which represents the main source of the Omani Government's revenue, increased in the years 2010 and 2011. This led His Majesty the Sultan to issue an order to increase the budget allocations for the social housing programs (this was confirmed in the interviews). Accordingly, a number of administrative changes were made by the policy makers, including opening the door to register new applications for social housing and amending some conditions for eligibility such as increasing the amount of the maximum allowable income of the applicants. These administrative changes, logically, have allowed many additional households to be eligible for social housing as discussed in Chapter Three.

The above political factors, including the orders of His Majesty the Sultan, also affected the demand for social housing as the willingness of Omani citizens to apply for housing support was increased. Therefore, this study concluded that the inability of the social housing policy to meet the current and future demand was due to different economic, political, administrative, and social factors. These factors acted together to increase the demand for social housing in the study area in 2011 especially, and this increased demand followed on to the next few years. In supporting this argument, this study found that those people who applied to get access to social housing through grants in the year 2015 (and for the years after 2015) will not be benefited before the year 2026 (see Section 7.3 for the calculations). Therefore, this study shows that the level of the current demand seems to be a problem. This implies that meeting the demand for social housing in Oman requires more effort and attention to be given to it, not just from the Omani Government by increasing the budget allocations but also from other sectors such as the private sector, community organisations, charity groups, and not-for-profit organisations. New and innovative means of delivering more housing assistance and loans must be considered.

This study indicates that the Omani government's involvement in social housing is in the process of shifting from the use of supply-side subsidies involving the subsidised direct construction of social housing units through the Residential Units Program, to demand-side subsidies through the provision of finance to build new houses or to extend, or renovate existing houses through the Housing Assistance Program and Housing Loans Program. That was shown in Chapter Two, where around 96 per cent of the total household beneficiaries in the current Eighth Five-Year Plan benefited from the Housing Assistance Program and Housing Loans Program which represent the demand-side subsidies. This implies the Omani Government's recognition of the importance of the global trend towards demand-side subsidies in the provision of social housing.

It was also revealed that the Residential Units Program lacked transparency in three different areas: the budget allocations, the supply of the residential units which would be provided at the beginning of each year, and the outcomes. This study found that despite the benefits of significant social housing investment in Oman there is an absence of short and long term social housing supply plans for this program (see the discussion in Sections 7.1, 7.2, and 7.3). For example, the funds and the actual supply of the social housing units through this program are provided when His Majesty the Sultan orders them. How the demand is determined is not clear. What is clear is only how His Majesty the Sultan receives the requests for housing from different sources, such as the Council of Ministers, the Majlis al-shura, the Governor, and the community, but there is no waiting list or

model that is used to assess the actual demand. This study, therefore, argues that there is no clear vision or long-term strategy for this program. All the work done by the Ministry of Housing, in regard to social housing supply through this program, is estimated and not planned. It is suggested that this program would be better planned by clarifying the budget allocation, by determining the supply of the residential housing units more clearly, and by generating a genuine waiting list.

In regard to the outcomes, the poor level of transparency of the Residential Units Program was clear as there was limited participation of the residents in the social housing delivery process through this program. In Chapter Seven it was shown that once an application has been made to get access to a social housing unit, the applicants could be provided with a unit from the Residential Units Program or a unit from the Housing Assistance Program as long as they satisfied the conditions and terms. This finding was also supported in Chapter Six, where in undertaking an adequacy evaluation of the units provided by the Residential Units Program, it became clear that the 'house choice' indicator contributed with very low scores in both the two approaches used: the objective standard approach and the participants' opinion approach. This poor result is what would be expected as the process of delivering social housing units through the Residential Units Program seems unclear to the beneficiaries. The general inference to be drawn from this finding is that, after people submit an application to get access to the social housing, the outcomes for them depend on a decision made by the authorities rather the beneficiaries. In view of this, there is need for policy adjustment with respect to beneficiary choice. Social housing policy, therefore, should encourage the involvement of residents in the delivery process to ensure resident responsive outcomes and thus more effective policy.

This study also found that the involvement of the Ministry of Housing, the gate keeper, in the three social housing programs is far from clear in determining the budget allocations and thus supply of the social housing. Here, the Ministry of Housing seems to be an implementer of top-down decisions rather than being a decision maker. Although the Minster of Housing is a member of the Supreme Council for Planning, the final decision maker, as stated in the Basic Statute of the State, is His Majesty the Sultan. The implication here is that the supply of the social housing, in the Omani governance system, is determined by the willingness and notions of the Sultan of Oman. There is here an issue for longer-term strategic policy of continuity and running of the social housing programs considering that the Sultan is the only one who has the ultimate authority in allocating funds.

8.2.3 Question Three: Recommendations

This section aims at answering this question: *How can the social housing policy and its implementation be improved?* The policy improvement here relates to housing adequacy and to both housing demand and housing supply. This study puts forward the following recommendations for the social housing policy to be more effective:

- Establish regulations and a system to continue maintenance of the existing social housing units provided by the Residential Units Program beyond the current one-year maintenance period. This study found that the structural condition of the houses provided was often not adequate. These units are only maintained by the Ministry of Housing for one year. This study recommends that the Ministry of Housing assesses the current residential units regularly in terms of their adequacy. That could be by establishing community organisations that look after the housing units. Good practice involves managing the provided housing stock, not only providing it.

- Apply an electronic application lodgement and evaluation system. That is because the social and economic status of households change with time. This system needs to be connected with other ministries in the Sultanate especially the Ministry of Social Development. Social security households, in most cases, are the households eligible for social housing in Oman. Better integration between ministries will cut the resources required to examine applications for access to both social services: social housing and the social security system. Having this system will also provide clear knowledge about the demand for social housing. This system should be able to filter applications regularly, examine the application in regard to the eligibility criteria set out by the executive regulations of the social housing policy, and provide a clear picture for the applicant as well as the Ministry of Housing about the current demand for such houses. Having this system will also benefit the applicants as they will know during the time of registering the application if they could get access to social housing or not, as their social and economic situation can be checked directly (at the application time), and regularly (over time). It is therefore suggested that partnerships between the Ministries be further encouraged and especially in terms of developing an electronic and linked application system for the services offered by both.

- Create a database that includes relevant information about important aspects of households who apply to get access to social housing. This database should be able to answer the questions: 'who wants what?' and 'what exactly are they asking for?'. This implies that the Ministry should consult more with the housing occupants so that the occupants can provide the Ministry with information about their needs and preferences, as discussed in the earlier literature review. For example, how many households applied to have one bedroom and how many applied to have three or four bedrooms? How many have household members with a physical disability? How many want a new unit and how many want only extensions, modifications, or maintenance to their old one? Knowing all these aspects of the demand will help in estimating the budget requirements to meet the demand.

- Establish a system that enables a proper investigation of the amount required for each housing assistance and loan application on the waiting list. Knowing the exact amount of money required and connecting that with the budget allocations for each program will provide a clearer picture about the waiting list and the budget allocations needed to meet the actual demand. As a result, low income people will know when they will be able to get access to social housing. The Ministry of Housing will also have a clearer picture about the current and future need for social housing and the budget allocations that will be needed to match this need.

- Collaboration and cooperation between the different ministries which deal with the provision of external services for social housing development in Oman is also needed. The study identified that the provision of external services was an important indicator of the adequacy of the social housing. The provision of these services could be improved by better coordination amongst the Ministries involved such as the Ministry of Housing, the Ministry of Regional Municipalities and Water Resources, and the Ministry of Transport and Communications.

- Attracting private (and community) sector investment into social housing is one of the main recommendations made by this study. In the literature, it is shown that the involvement of the private sector in social housing provision in many countries is viewed as being significant (Buckley & Kalarickal 2005; Erguden 2001). Nevertheless, this is not the case in Oman where the role of the private sector in social housing provision is not yet activated.

This was confirmed by the interviews with policy makers. Therefore, this study argues that the significant contribution from the Omani Government does not appear to be consistent with the current trends in the provision of social housing in many other countries where a mix of government and non-government social housing finance is more common. As a result, urgent policy attention is required to enable a greater role for the private sector in social housing provision for the benefit of low income citizens across the Sultanate. Currently there are different strategies that are implemented in different countries in enhancing the role of the private sector's participation in social housing and in reducing the government's direct involvement (Groenhart 2010). One of these strategies is to implement supply-side subsidies to incentivise private sector involvement as was shown in Chapter Three. It is suggested that the Omani Government could play an enabling role by curbing the rising cost of housing in the market rather than by being a direct provider as is the case with the Residential Units Program. For example, the government could provide land for the private sector to build houses for sale where some percentage of the houses are provided for low income Omani residents. There is also the potential for government to support a new role for community and non-government organisations in the provision and maintenance of social housing in Oman. The nature of this potential role is still unclear but it is certainly an issue that should be pursued by the Ministry of Housing.

- Finally, a balance should be maintained between the provision of adequate social housing units, maintenance of existing housing stock, and investment in new social housing units in order to achieve a more effective overall social housing policy.

8.3 Future Research Needs

This study is the first systematic review of social housing policy and projects in Oman. Therefore, it will make an important contribution to the literature on social housing policy in Oman as it evaluates the performance of the programs provided by this policy. It also adds to the wider literature on social housing by developing and utilising an effective tool for assessing housing adequacy. It provides good feedback to the Ministry of Housing by providing them with relevant information that will guide future social housing improvement and development.

Nevertheless, due to time and resource restrictions, it was not possible to cover all areas of social housing in Oman in this study. Therefore, the following areas are recommended for further research:

- The study has offered an evaluation of the adequacy of the social housing units provided through the Residential Units Program. The adequacy of the houses that benefited through the Housing Assistance Program and Housing Loans Program were not investigated in this study. Therefore, there is a need for future research to fill this gap. Doing this may allow a comparison of the results of this study with an assessment of the adequacy of the houses provided through the other two programs. That may also lead to a more comprehensive result for the overall adequacy of the social housing in Oman and given that the other two programs have a greater input from households in building or modifying their housing units may provide a more thorough picture of the forms of housing preferred by most households.

- In evaluating the adequacy, this study was conducted in only five of the 61 wilayats in Oman. Therefore, evaluating the adequacy of the social housing in other remaining wilayats in Oman (using the questionnaire provided in this research), is also worth doing for the purpose of identifying additional differences and similarities in relation to the adequacy of the social housing provided by the Residential Units Program. This can help in having a better overall evaluation of this program in the whole country.

- The positive and negative impacts of the social housing programs on people's lives (such as when some people might stop work to get a house) also need investigation. For example, with the Housing Loans Program, it was mentioned that if the borrowers retired from their job and their income became less than 300 OMR per month, they will be exempted from payment of the remaining instalments. Does that mean some working people will prefer to quit their jobs so as to be exempted from paying the money back? In other words, does this program discourage working people from continuing their jobs which can result in their becoming more dependent on government support?

- The impacts of the social housing provision on the form and structure of Omani cities also needs to be investigated. This research found that social housing through the Residential Units Program is mostly provided as attached one storey houses in different locations but usually as one integrated project. The design of these houses is almost similar in most of the

cities as was confirmed by the interviewed policy makers. Since housing patterns and design give the cities their character, the effects of these social housing projects on the overall city structure needs to be examined as does the effect on city growth of large social housing projects built on the city fringes.

- Other important social issues related to the long term strategy in delivering the units through the Residential Units Program as one project in one location, is the issue of social sustainability. Good examples of these social issues which need to be investigated in Oman are the level of social mix in the housing projects, and privacy in social housing units. The provision of housing units in clusters also needs to be investigated in terms of whether this enhances or inhibits the development (or maintenance) of a sense of community amongst the social housing beneficiaries.

- This study deals with housing that is provided to low income Omani citizens only. Examining the adequacy of the housing provided for low income non-Omani people who live in Oman is also important. Knowing that the non-Omani population represents around 43.4 per cent of the total population in Oman in 2014 (NCSI 2014b) increases the importance of such studies. As noted in Chapter Two, there is also a need to explore the future household demand implications of the complex Omani population structure.

- There is uncertainty about future oil prices, the sources and magnitude of future government revenue, how that revenue will be allocated between the Ministries and sectors, and the choices made by the Sultan. Knowing that Oman relies substantially on oil for its revenue, then the sustainability of social housing supply is linked to the production as well as the price of oil. These factors were not discussed in detail in this study and so is a need to investigate the sustainability of the social housing supply in Oman in relation to future government revenue and its allocation. For example, the Omani Government could consider social rental housing as a way of maintaining a future income stream for social housing supply and possibly maintenance. The questions that could be raised here are:

    1. How long will the Omani Government be able to continue to provide these social housing units and social housing funds?

2. Will the current rate of social housing supply be sustained? And if not what future scenarios are possible?

3. What is the strategy for the next Five-Year Plan (2016-2020) or any plans that follow?

These queries need more investigation. Thus, more research is needed to clarify these various social, political and economic issues as well as their impact on social housing policy and provision in the Sultanate of Oman.

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Appendices

Appendix 1: A layout of one bedroom social housing provided by the social housing policy
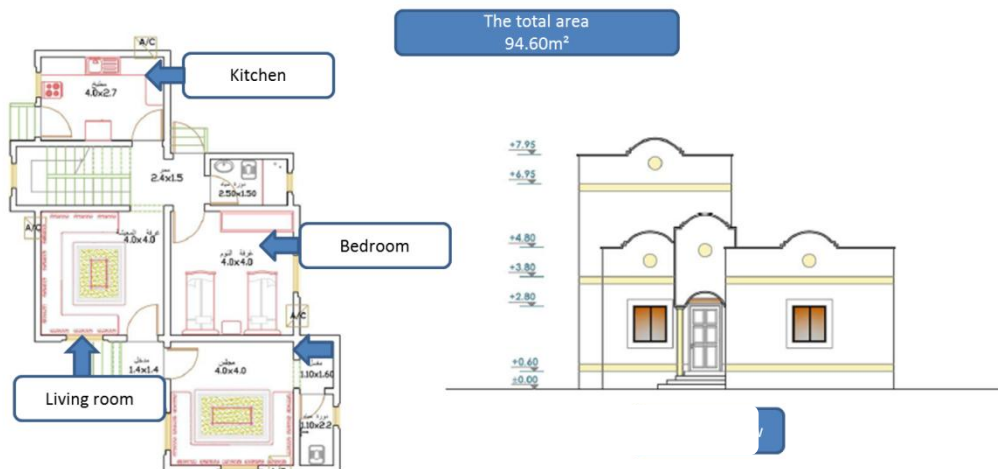
Source: Modified from Planning and Statistics Department 2011b

Appendix 2: A layout of social housing with two bedrooms in one storey provided by the social housing policy
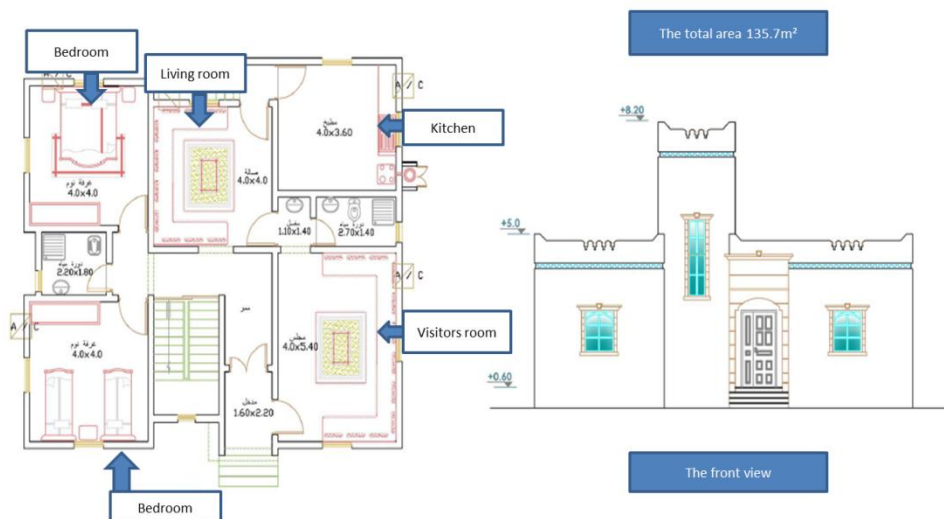
Source: Modified from Planning and Statistics Department 2011b

Appendix 3: A layout of social housing with two bedrooms in two storeys provided by the social housing policy
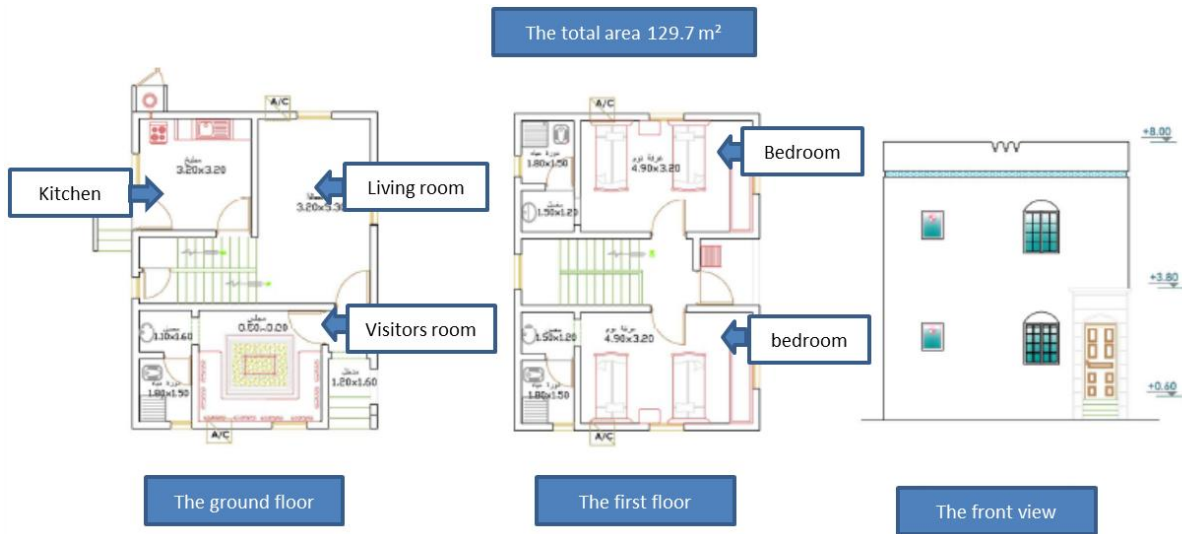
Source: Modified from Planning and Statistics Department 2011b

Appendix 4: A layout of social housing with three bedrooms provided by the social housing policy

Source: Modified from Planning and Statistics Department 2011b

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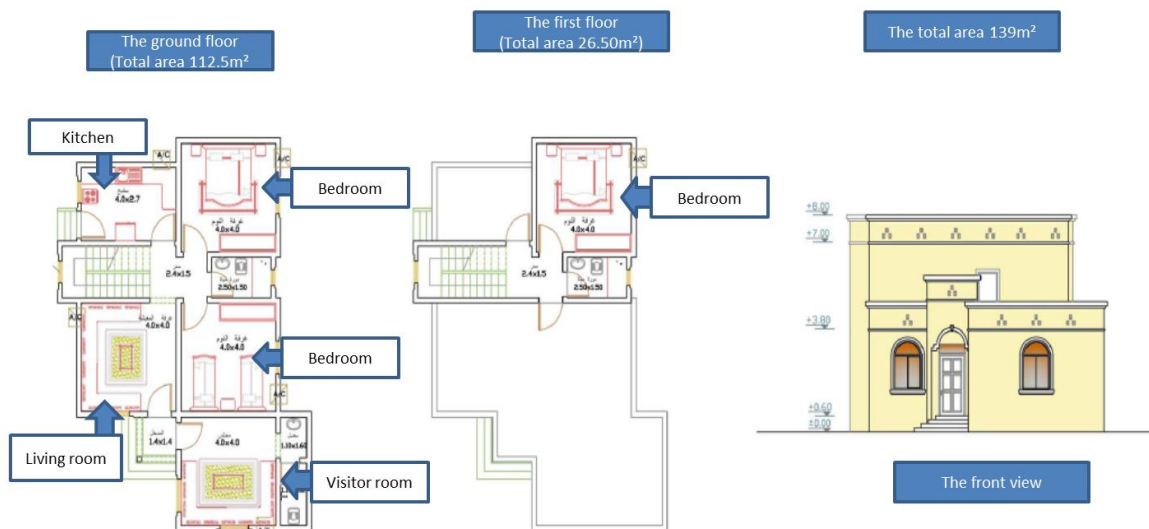
Appendix 5: A layout of social housing with four bedrooms provided by the social housing policy

The ground floor (Total area 112.5m²)

The first floor (Total area 45.80m²)

The total area 158.30m²

Kitchen

Bedroom

Bedroom

Living room

Bedroom

Visitors room

The front view
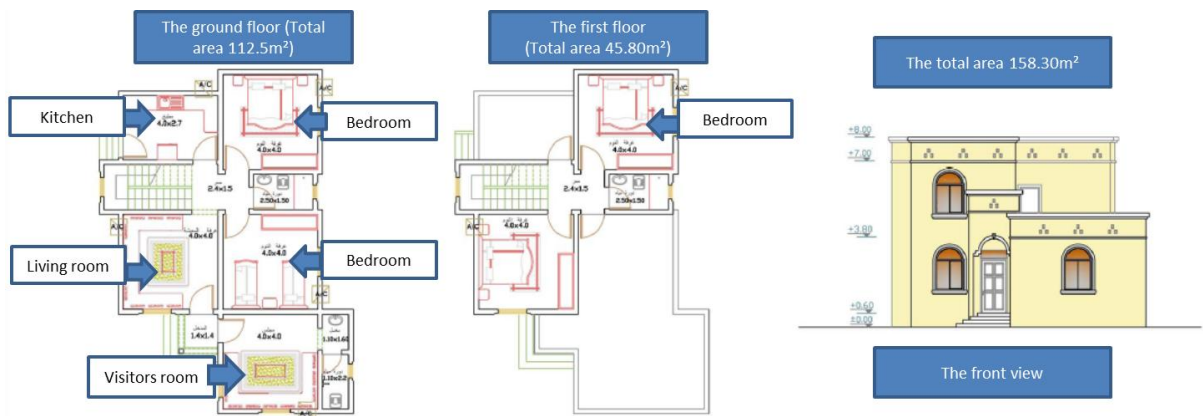
Source: Modified from Planning and Statistics Department 2011b

Appendix 6: A layout of mosque provided by the social housing policy in some residential projects

The total area 528m²

Mosque

Imam's room

The front view of Imam's room (Total area 60.80m²0

The front view of the mosque (Total area 467.70m²)

Source: Modified from Planning and Statistics Department 2011b

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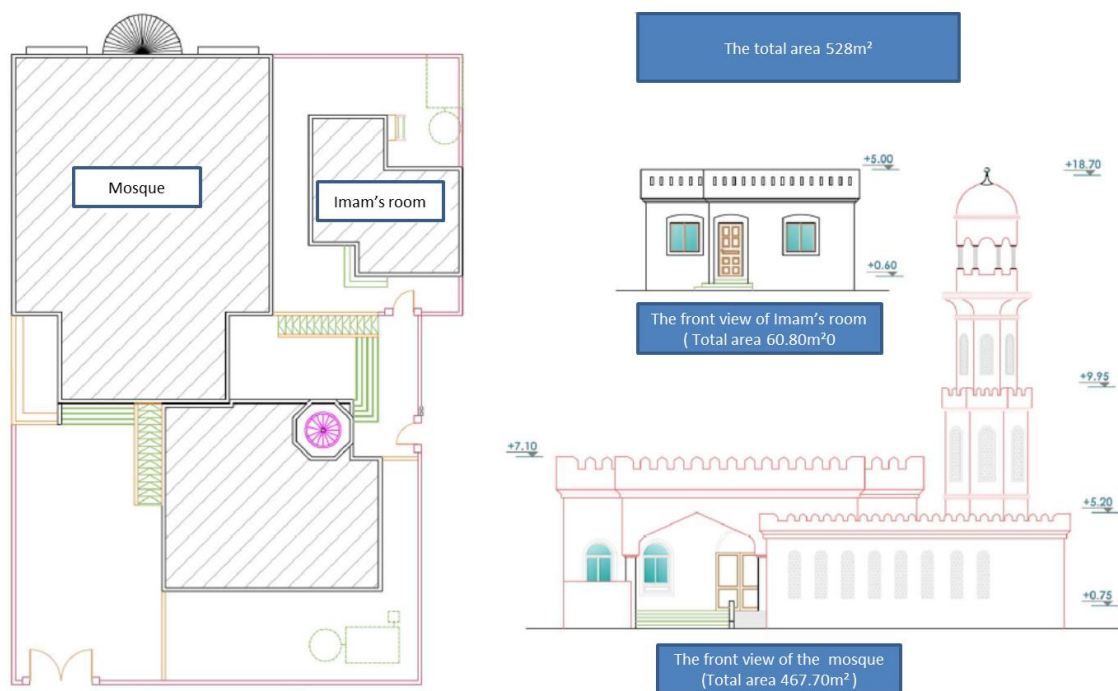
Appendix 7: A layout of public hall provided by the social housing policy in some residential projects

The front view

Public hall

The total area 358m²
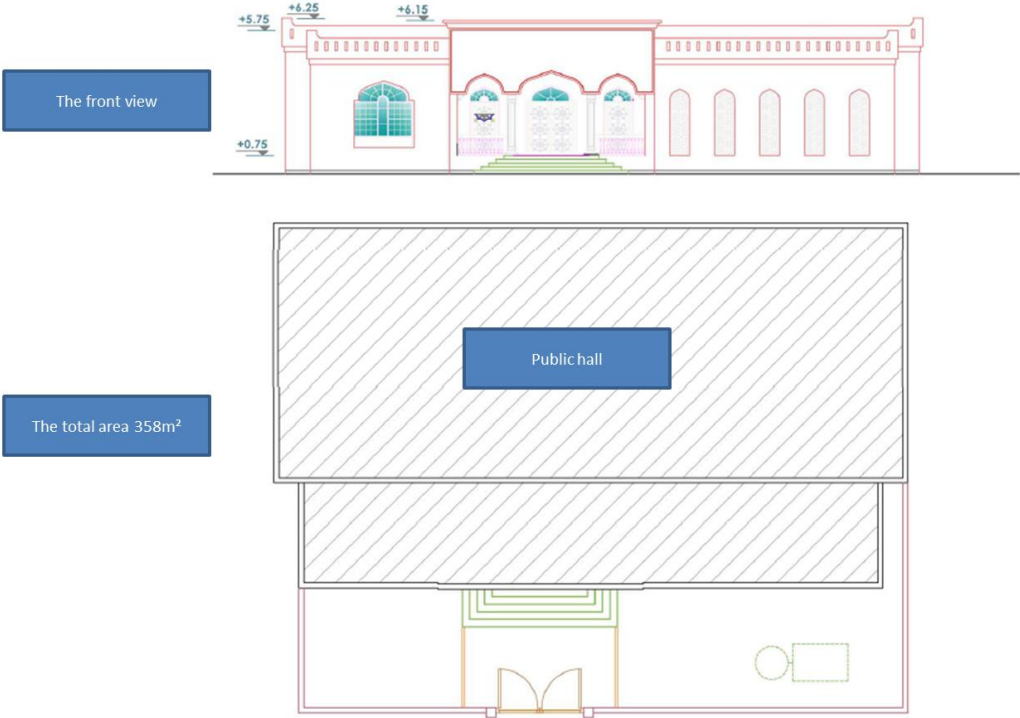
Source: Modified from Planning and Statistics Department 2011b.

Appendix 8: The questionnaire used in this study with households

Questionnaire number (   )

This questionnaire is aimed at gathering data for a research project on social housing in Oman. It will collect information about the location, the services provided, and structural condition of the social housing provided through the Residential Housing Program between 2001 and 2010. The participant should be the household head (male or female).

The researcher is Noura Khalifa Alnasiri, doing a PhD at the School of Geography, Planning and Environmental Management, The University of Queensland, Australia. She is an Omani, working at the Sultan Qaboos University, Colleges of Arts and Social Sciences, Department of Geography as a lecturer. The people who are distributing the questionnaires are just helping the researcher to collect the data but they will not read your answers. If you agree to participate in this study, please fill in the questionnaire and put it in the envelope provided. The questionnaire will be collected from you in a few days by the person who distributed it. All information provided will be kept confidential.

This study adheres to the guidelines of the ethical review process of The University of Queensland. Whilst you are free to discuss your participation in this study with project staff (Noura Alnasiri at n.alnasiri@uq.edu.au or noura@squ.edu.om), if you would like to speak to an officer of the University not involved in the study, you may contact Dr Annie Ross, the Ethics Officer on +61 7 3365 1450; or +61 7 3365 6084; or annie.ross@uq.edu.au.

Note: Please fill in this questionnaire **only** if your house was provided by the Ministry of Housing through the Residential Housing Program between 2001 and 2010.

INSTRUCTION: Please **tick** (√) or **fill in** as appropriate

Section A: Housing Characteristics

1- In which wilayat is your house located?

      a)   Al Buraimi (   )

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b) Al Rostaq ( )

c) Ibri ( )

d) Nizwa ( )

e) Sur ( )

2- How long have been living in this house?

a) 1-3 years ( )

b) 4-6 years ( )

c) 7-9 years ( )

d) 10 years or more ( )

3- How long did it take from the time you applied for you to be allocated this house?

a) Less than one year (   )

b) 1-5 years (   )

c) 6-10 years (   )

d) More than 10 years (   )

e) I did not apply to obtain this house ( )

4- Do you have a title deed for this house?

a) Yes ( ) skip to (Q6)

b) No ( )

5- Why you do not have a title deed for this house?

a) Because I have not spent ten years in this house yet ( )

b) Other reasons ( ) please specify

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6- Under the Residential Unit Program housing is provided by the Omani Government at no charge.
Have you spent any additional money on the house since you were allocated it?

a) No (   ) skip to (Q8)

b) Yes (   )

7- Approximately how much money?

a) Less than 1,000 Omani Rial (   )

b) 1,000 to 1,999 Omani Rial (   )

c) 2,000 to 2,999 Omani Rial (   )

d) 3,000 or more Omani Rial (   )

8- How many bedrooms do you have in your house?

a) One bedroom (   )

b) Two bedrooms (   )

c) Three bedrooms (   )

d) Four bedrooms (   )

e) Five or more (   )

9- Was the house connected to a drinkable water supply when you obtained it?

a) Yes (   )   b) No (   )   c) Do not know (   )

10- **Currently**, what is the main source of drinkable water in your house? **Please check all that apply**

a) A water network system (pipelines) (   )

b) Water collection points (by using water tanker trucks) (   )

c) Falaj's water (   )

d) From wells (   )

e) Buying the potable water (   )

f) None (   )

g) Other (   ) please specify

………………………………………………………………………………………………………

………………………………………………………………………………………………………

11- Do you use an electronic device (filter) in your house to make the water drinkable?

b) Yes ( )   b) No ( )

12- Was the house connected to a sewerage network system (pipelines), when you obtained it?

c) Yes ( )   b) No ( )   c) Do not know ( )

13- Currently, how is the sewage removed from your house?

a) Sewerage network system
b) Septic tank (tank underground) ( )
c) Other ( ) please specify

………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………………………………………………………………………………………………

14- Was your house served by a paved road when you obtained it?

d) Yes ( )   b) No ( )   c) Do not know ( )

15- Is your house built in compliance with building codes?

a) Yes ( )   b) No ( )   c) Do not know ( )

16- Currently, does your house require any major maintenance work or repairs?

a) Yes ( )   b) No ( ) skip to (Q 18)   c) Do not know ( ) skip to
(Q 18)

17- Which maintenance work or repairs does your house require at the moment, please check all that apply

a) The electrical system such as light fixtures, air-conditioning ( )
b) Structural condition such as walls, floors, stairs, or ceilings ( )
c) The plumbing system such as the laundry ( )
d) Others ( ) please specify…………………………………………

18- Did the entrance to your house have a wheelchair ramp when you obtained it?

   a) Yes (   )   b) No (   )

19- Is your house located within 2 kilometres or less to the nearest health facility (such as a hospital or a health centre)?

   a) Yes (   )   b) No (   )   c) Do not know (   )

20- Is your house located within 400 meters distance (or five minutes' walking distance) or less to the nearest mosque?

   a) Yes (   )   b) No (   )   c) Do not know (   )

21- Were you offered a choice of houses to live in when you were allocated this house?

   a) Yes (   )   b) No (   )   c) Not sure (   )

22- How would you describe your house?

   a) Detached one storey
   b) Detached two storeys
   c) Attached one storey
   d) Attached two storeys
   e) Other ( ) please specify…………………………………………………………………

Section B: Socio-economic characteristics of respondent and household

23- Gender:

   a) Male (   )   b) Female (   )

24- How old are you?

   a) 18-30years (   )   b) 31-39 years (   )   c) 40-49 years (   ) d) 50-59 years   e) 60 years and above (   )

25- Including you, how many people are living in this house?.........................……………………………………………………………

…………………………………………………………………………………………

26- Including you, does any one of your household have a mobility disability?

    a) Yes ( )   b) No ( ) skip to (Q 28)   c) Do not know ( ) skip to (Q 28)

27- How many disabled people are there?...…

28- What is the range of your household's average monthly income?

    a) Do not have income (   )
    b) Between 1 to 150 Omani Rial ( )
    c) 151 to 300 Omani Rial (   )
    d) 301 to 600 Omani Rial (   )
    e) Above 600 Omani Rial (   )

29- Martial status?

    a) Not married (   )   b) Married (   )   b) Divorced (   )   c) Widowed (   )

30- What is your current work status?

    a) Private sector (   )   b) Public sector (   )   c) Retiree (   )   d) Unemployed (   )

31- Educational status?

        a) Cannot read or write (   )
        b) Reading and writing ( )
        c) Completed Primary school (   )
        d) Completed Secondary school (   )
        e) Higher education (   )
        f) Other (   ) please specify………………………………………………………..

Section C: Housing adequacy

32- Different facilities and services were provided with the house when you first obtained it from the Ministry of Housing. How would you rate the house where you live in terms of the following, rating them from very inadequate to very adequate? **Please tick (√) the appropriate column**.

N	Attributes	1 Very Inadequate	2 Inadequate	3 Neutral	4 Adequate	5 Very Adequate
1	Length of time required to obtain the title deed					
2	Cost of acquiring of your house					
3	Drinkable water supply in your house					
4	Provision of sewerage facilities					
5	Road network					
6	Number of bedrooms relative to your needs					
7	Condition of the structure of the house					
8	How well the house was maintained by the Ministry of Housing					
9	Accessibility of your housing entrance for people in a wheelchair					
10	Nearness of your house to health facilities					
11	Nearness of your house to a mosque					
12	The degree of choice you had about the house					
13	Overall, how would you rate your current house					
14	Overall, how would you rate the social housing policy in Oman					

33- Are there any services or facilities you need, but don't currently have in your house?

   a) No ( )

   b) I don't know ( )

   c) Yes   (   )   please specify………………………………………………………………………………………

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Section D: General Questions

34- If it was possible to change something about you house, what are the main changes you would make? (Please tick that all apply)

    a) Location in relation to mosque (　)

    b) Location in relation to the health facilities　(　)

    c) Cost (　)

    d) Structural condition (　)

    e) Number of bedrooms (　)

    f) Housing connection with drinkable water (　)

    g) Housing connection with sewerage system (　)

    h) Housing connection with paved roads (　)

    i) Having title deed of home ownership (　)

    j) Housing entrance is accessible for people with a mobility disability (　)

    k) Better maintenance (　)

    l) More involvement in the choice of housing (　)

    m) Others (　) please specify

    ....

    ....

    ....

    ....

    ....

35- On a scale from 1 to 5, where 1 means not at all important and 5 means extremely important, when you sought to obtain a house from the Ministry of Housing, how important to you were: **(Please tick that all apply)**

Aspects	1	2	3	4	5
	Not at all important	Unimportant	Neither Important or	Important	Extremely important

			Unimportant		
Having a title deed for the house					
The cost of the house					
The house's connection with drinkable water					
The house's connection with the sewerage system					
The house's connection with paved roads					
The number of bedrooms					
The good structural condition of the house					
The house was well maintained					
That the entrance was accessible for people with a mobility disability					
A location near health facilities					
A location near a mosque					
That you were offered a choice of units to live in					

36- Are there any other aspects that you thought were important but that were not mentioned in the previous question?

a) No ( )

b) Yes ( ) please specify

....

....

....

....

37- Do you think there are any weaknesses or problems with the current social housing policy in Oman?

a) Yes ( )

b) No ( ) skip to (Q 39)

c) Don't know ( ) skip to (Q 39)

38- What are these weaknesses?

....
....
....
....

39- From your point of view, what are the important good points about the social housing policy in Oman?

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....
....
....

Thank you and we appreciate your time.

Appendix 9: The Interview guide used in this study with policy makers

Part 1: Welcome

This interview will focus on social housing policy in Oman. You are being interviewed because of your knowledge about the Omani social housing policy.

Part 2: Interview guide

Policy Aims

1-What do you think is the main aim of the social housing policy in Oman?

Current Demand

2- How many households are currently waiting their turn to get access to social housing (waiting list)?

3-Do you think that there is a large enough budget allocation from the Omani Government to support the *current* social housing demand? Please explain.

Future Demand

4-Do you see a continuing need for the social housing programs in 5 to10 years into the future? Why do you say this?

5-Do you have any specific plans for the future social housing demand (for the upcoming 5 and 10 years)? And how?

6-Do you think that there is enough budget allocation from the Omani Government to support the likely *future* social housing demand for the next 5-10 years?

7-What are the issues that the policy should be taking into consideration in planning for the future?

8-What do you see as the relationships amongst the three Omani social housing programs?

- In terms of total budget allocation?
- In terms of the budget across the three programs?

Housing quality

9-What does the term 'adequate housing' mean in the social housing policy?

10-When do the beneficiaries obtain the title deed of the housing? And do you think that is a suitable length of time? Why do you say that?

11-Does the Residential Unit Program provide housing at no cost to the beneficiary? How much does housing under the other Programs cost the beneficiary? Who covers the costs if residents modify the housing units?

12-What are the procedures that the policy takes into consideration in planning for

☐ Location, especially in relation to health centres and mosques?

- ☐ Connecting with potable water?
- ☐ Connecting to a sewerage network system?
- ☐ Connecting with paved roads?
- ☐ Accessibility of disabled people?

13-In the construction process, how does the Ministry ensure the contractor's commitment to the technical specifications of the building? (Are houses built in compliance with building codes)?

14-For how long does the Ministry maintain the social housing? And do you think that is enough?

15-Do you think that the social housing policy adequately matches household size with the number of bedrooms provided? How is this done?

16-Do the beneficiaries of the housing participate in the process of providing or choosing the units in any way? If so, how do they do this?

Strengths, weaknesses, and recommendations

17-What do you feel are the main strengths of the social housing policy in Oman?

18-Do you think there are any weaknesses or problems with the current social housing policy?

19-In your opinion, are there ways that the policy can be improved to make it more effective?

20-Do you have any other comments you would like to make about the social housing policy in Oman?

Thank you and we appreciate your time.

Appendix 10: Reliability test of scale of measurement for the subjective housing adequacy

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Time of title	30.54	61.926	.310	.196	.774
House cost	29.78	63.128	.264	.110	.778
Drinkable water	29.85	56.577	.546	.398	.748
Sewerage facilities	29.78	56.159	.552	.473	.747
Road network	29.37	57.521	.503	.425	.753
Number of bedrooms	30.30	59.599	.397	.289	.765
Structural condition	30.25	59.783	.471	.344	.758
Ministry maintenance	30.62	58.729	.553	.399	.751
Wheelchair access	30.81	62.414	.353	.211	.769
Health facilities location	29.71	57.773	.440	.302	.761
Mosque location	28.90	62.969	.218	.135	.785
House choice	29.84	59.425	.415	.187	.763

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.778	.779	12

Appendix 11: Model Summary of the categorical regression analysis

Model Summary

Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.805	.648	.535	.352

Dependent variable: subjective housing adequacy

Predictors: location, living time, spend extra money, type of house, gender, age, household monthly income, marital status, current work status, current education status, title deeds, drinkable water, sewerage system network, road network, structural condition, ministry maintenance, wheelchair access, health facilities location, mosque location, house choice, living space.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	102.320	38	2.693	5.755	.000
Residual	55.680	119	.468		
Total	158.000	157			