PROMOTION OF SUSTAINABLE HOUSING IN THE UNITED KINGDOM AND LESSON DRAWING FOR SOCIAL HOUSING POLICY IN NICARAGUA
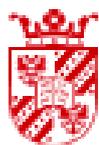

Master in Environmental and
Infrastructure Planning

Master Thesis
Thelma Vanegas
s2254344
Supervisor:
Dr. Justin Beaumont

Faculty of Spatial Sciences

university of groningen

2012

ACKNOWLEDGEMENTS

Firstly, I would like to express my deep gratitude to the Lord, for the fortitude he brings to me every time I need it while facing difficulty and adversity, but especially through this master programme and master thesis research in the Netherlands.

I also want to thank my family in Nicaragua. They are always giving me support and encouraging me despite the distance. I am particularly thankful to my mother, who is always backing me up with all her help and advices which I cherish.

Thanks to my supervisor Dr. Justin Beaumont, for his encouragement to question findings and search for alternatives answers on my own during the process of writing my thesis. I would also like to thank Dr. Silvia de Schiller, from University of Buenos Aires, for her critical comments and suggestions at the beginning of my research. Thanks to the interviewees that shared their opinions and documents with me.

My gratitude goes also to the lecturers and staff members of the Master Program in Environmental and Infrastructure Planning of University of Groningen, who added a great value to my education and brought a broad perspective of relevant issues that will be helpful in my professional future. Thanks also to Nuffic, for providing me the financial support for this master, through NFP Scholarship Program.

Finally, I want to give thanks to my friends in Nicaragua, my new friends and colleagues from the EIP master, and my new friends from all over the world that I met in Groningen. Their cultural diversity enriched my whole experience during this year and I really appreciate it.

'It has to start somewhere
It has to start sometime
What better place than here?
What better time than now?'
R.A.T.M.

ABSTRACT

Social housing, in some countries called affordable or low income housing, is in developing countries an important means to reduce inequalities in society and therefore is a recurrent target for governments'.

In **Nicaragua**, due to the housing shortage, policy, strategies and direct actions related to it are set as priority and aim at providing just a 'decent roof' for low income population. Following this vision the government had launched recently massive projects for new social housing, which represent a large share of new construction nationwide. Considerations related to the 'Triple Bottom Line' approach to **sustainable** development (economic, environment and social dimension), have not yet perceived enough attention in the housing field mostly because of time and budget constraints. The new residential constructions might put a strain on natural environment, by being responsible for a significant share of energy use, resource consumption, and waste generation and also for their contribution to maintaining a social segregation between the rich and the poor.

By contrast, steps towards sustainability, in housing and social housing, has been taken in some developed countries. Particularly, in the **United Kingdom** promotion of sustainable housing have existed for a while and is used nowadays. This is showed in recent government's frameworks and guidelines such as the Sustainability Communities Program and the Code for Sustainable Homes. Both are taken as **cases of study**, in order to abstract their positive and negative results up until now.

Differences on both countries are obvious but their common ground is their governments interest in reduce social housing shortage. Through document research, these two United Kingdom's policy products are analyzed and by using the ten steps prescribed by Rose for **lesson drawing**, a lesson is drawn for Nicaragua context.

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

1. INTRODUCTION

The objective of this research is to make a contribution for social development in Nicaragua, where there is no attention to sustainability in housing or even in building construction in general. This is pursued firstly, by gaining broader understanding on how policies, strategies or programs with the sustainability agenda for housing operates in the United Kingdom, whose initiatives mainly in sustainable construction are 'in a further stage of progress' compared to the rest of Europe (Nijenmanting and Senel, 2010) and lastly, by looking for lesson drawing opportunities for social housing in Nicaragua context.

This chapter explains the research design, which includes research background, problem statement, research objective and research questions, scope of the research and methodology, and chapter outline. The background contextualizes the problem and its relevance in an historic perspective. Problem statement presents the central issue of the thesis and argues its importance for conducting research. Research objective reveals what is to be achieved with this study, complemented by research questions that establish the point of departure for this investigation. The scope of the research and its methodology provide the extent and guidelines for conducting it. Lastly, the outline presents a writing structure of this study.

1.1   Background

Housing shortage for low income groups is a persistent problem around the world. The United Kingdom and Nicaragua are no exception. Nicaragua's population is close to 7 million inhabitants (Index mundi, 2011) and its housing deficit is approximately 800 000 households, which grows every year. The country's housing demand comes mainly from the poorest social sectors, located in traditional neighborhoods and slums, both in urban and rural areas. Sustained rural migration has increased this necessity in Managua, the capital city. The Central Government is in charge of addressing and solving this problem through the Institute of Urban and Rural Housing (INVUR), and even though it has achieved some results, those are still far away from the main goal. INVUR, as several NGOs and the social housing program of Managua's municipality, financed by the Inter American Development Bank (IDB), provides an average of 5,000 homes annually. Following this vision the government had launched recently massive projects for new social housing, involving not only the mentioned actors but also private developers, and now the building of social housing represents a large share of new construction nationwide. Those remarkable efforts in social housing provision are considered insufficient for improve the living conditions of this vulnerable population because their starting point is the same typology of social housing envisaged more than 30 years ago, which is evidently only a basic solution for the demand of a `decent' roof, limiting the development of its occupants. There is enough evidence that social houses in Nicaragua can be considered unsustainable because they do not ensure adequacy of the spaces to the needs and safety of its dwellers through time. (Vanegas, 2007)

Another relevant aspect is that considerations related to the 'Triple Bottom Line' approach to sustainable development (economic, environment and social dimension), have not yet received

enough attention in the housing field in Nicaragua, mostly because of time and budget constraints. The new residential constructions might put a strain on natural environment, by being responsible for a significant share of energy use, resource consumption, and waste generation and also for their contribution to maintaining a social segregation between the rich and the poor. Social housing, in some countries called affordable or low income housing, is in developing countries an important means to reduce inequalities in society and therefore is a recurrent target for governments'.

By contrast, according to United Nations Environmental Program (UNEP) the incorporation of a sustainability approach in housing and social housing has gained considerable attention in some developed countries. In the United Kingdom promotion of sustainable agenda for housing has existed for a while and is used a great deal these days.

In United Kingdom's case, the supply of housing has not matched the demand over the last 15 years. Ineffective policies to increase supply, such as unsustainable lending have worsened the situation by making prices go up and down (DCLG, 2010). As mentioned by Pickvance (2009) the term sustainable housing goes back to the 1990s, at that time in the UK it was simply 'an analytical or social construct useful in bringing together a heterogeneous set of policies that affected housing sustainability either directly (Building Regulations, planning policy) or indirectly (energy policy, fuel poverty policy). Bergman et al. (2007) explain how energy inefficient building stocks, growing energy, water and resource use, social exclusion and growing household numbers on limited land are complex, structural issues, deeply rooted in, and reinforced by, patterns of behavior, technologies, infrastructures and social institutions. They make housing and communities in the UK unsustainable, environmentally, socially and economically. Nevertheless efforts oriented to achieve sustainability have started, as it can be seen in examples such as the Bed ZED project, or Beddington Zero Energy Development, the UK's largest carbon neutral eco-community built in 2002 (Forbes, 2007). The sustainable agenda became an explicit policy object with 2006 government's announcement of its 'zero carbon for new homes by 2016' target and the publication in 2007 of the Code for Sustainable Homes. In July 2007, the Housing Green Paper and Building a Green Future: a policy statement, were published outlining the measures to be used to deliver this policy, so the explicit elements in sustainable housing policy have become stronger.

1.2   Problem statement

The social housing problem affects vulnerable population in every country. In Nicaragua's case that is almost the 80% of the total population (Habitat, 2008). Policy, programs and projects oriented toward the solution or at least the reduction of that deficit have been developed, with results mostly related to the provision of a decent roof. Nevertheless that has not guaranteed a better life quality of their occupants, because most of the large social housing projects have little consideration of quality/sustainability and the consequences are mainly uncomfortable dwellings, high costs of maintenance and low urban integration.

By contrast, as presented in the UKs Program Sustainable communities: Building for the future (2003), housing and the local environment are vitally important. There is an understanding that communities are more than just housing, therefore they have many requirements worth enough attention in order to avoid the risk of wasting resources of all kind, as past experiences in United Kingdom have shown (ODPM, 2003).

In developing countries time, budget and land-use constraints faced by social housing developers typically lead to buildings being assembled with little consideration for durability, sustainability or environmental health. This also results in sub-standard low-cost housing with a high rate of defects, high maintenance costs, and short life. Moreover, social housing units are being constructed in areas where the occupants have little access to basic services, infrastructure, and to social and economic opportunities of cities. (UNEP, 2011)

According to UNEP (2011) societies, mostly in developing countries, risk locking their building stock into 'inefficient and environmentally detrimental practices for decades unless efforts are made to mainstream sustainable buildings'. Therefore a sustainable agenda in social housing appears to makes more sense than ever.

Social housing in Nicaragua is considered a very complex problem, because it involves many actors and includes among other topics scarcity, funding limitations, building capacity, environmental issues and social progress. For the purposes of this research, the fact that Nicaragua's national government is making an effort for increase the housing production is seen as an opportunity to bring in the sustainable agenda for social housing policy and programs. This is explained by the understanding that the short sighted solution implemented so far, might even make worse the problematic, by increasing social inequalities and affecting in a negative way the natural environment.

It is also a persistent problem that has been tackled with the same narrowed view for many decades by different governments through Nicaragua's history, but the transition to a sustainable approach to the social housing provision is needed as soon as possible, because of environmental, economic and social vulnerability. And if countries that have stronger economies, as the United Kingdom, with a high level of awareness in environmental and social issues are making efforts for produce more sustainable housing, it would be reasonable to think that in developing countries, such as Nicaragua, with higher levels of vulnerability, due to its poor population and in peril biodiversity, that efforts should be more than necessary. Since the situation is quite different in developed countries, such as the United Kingdom, the problem of the research revolves in taking an analytical view at housing policy in United Kingdom's, and try to get lessons applicable for Nicaraguan context.

Due to these facts, the question arises: How can Nicaragua learn from sustainable housing initiatives in developed countries like United Kingdom?

1.3   Research objective and research questions

The aim of this research is to contribute to Nicaragua´s social development, by obtaining lessons from United Kingdom's sustainable housing agenda that might be useful for Nicaraguan institutions related to social housing policymaking.

Specific objectives:

- Gain broader understanding on how Sustainable Communities Program and Code for Sustainable Homes operate in the United Kingdom.
- Look for lesson drawing opportunities for social housing policymakers in Nicaragua's context.

The lack of a sustainable agenda for social housing policy and provision is causing serious damage to vulnerable households in Nicaragua. This problem is limiting their development by not providing adequate thermal comfort or basic facilities, and by increasing social inequalities due to urban sprawl. **Lessons can be obtained from United Kingdom's current sustainable agenda in housing, and those will help to set a framework in order to introduce the required sustainable agenda in Nicaragua's social housing policy and strategies.**

To achieve the objectives aforementioned, it is necessary to answer the following questions:

- What is the theoretical link between social housing and sustainability?
- What has been done related to the sustainability agenda for housing and particularly social housing in the United Kingdom?
- What are the results, both positives and negatives, of that agenda so far?
- How can Nicaragua learn from these experiences and how could UKs agenda be improved?
- How can the sustainability agenda be included in Nicaragua context or under what conditions could it be included?

1.4   Scope of the research and methodology

The scope of study relates to housing policy in United Kingdom and in Nicaragua. The focus of housing policy that will be analyzed is sustainability, which includes social, economic, and environmental aspects, in United Kingdom. Followed by the lesson drawing aspect, that might be useful in Nicaragua's context.

The study makes use of qualitative research method which is suitable for describing complex social problems in the field of housing policy. As point out by Creswell (1997), basically it helps to describe what is happening with a specific topic which needs further exploration. It is done by incorporating an active learner point of view, sometimes from a participant's perspective and a lot of detailed observation. The research will be based only in literature review, for analyzing both the theoretical framework and the core sustainable housing policies/strategies or plan in the United

Kingdom. Time frame is the main reason for basing this research in documents analysis. Specifically, two cases studies within the United Kingdom are the 'research strategy' (Yin, 2002). This country is considered exemplar because sustainability has been for a long time in its planning system (Defra, 2011) and also because documents related to it, do not represent a language barrier for the researcher.

Ritchie (2003) infer that qualitative research has the function of evaluate because is concerned with issues like 'how well does it work?, a mayor question to policy related investigation present in this research. Following such approach and for answering the research questions mentioned in previous section it is necessary to follow these steps: First, collect and review secondary data related to conceptual framework, institutional context in the United Kingdom and Nicaragua (in order to understand them), sustainable agenda in housing for United Kingdom, social housing in Nicaragua, and also the relevance of lesson drawing. Second, obtain opinions from persons in related fields. The interviewees are working in sustainability issues within the built environment and are linked to the Latin American reality. The interviews are semi-structured, starting with open ended questions in order to give the freedom to the interviewee to explain thoroughly their points of view and their experience. These are done through internet means, first accessing them through email and after proceeding using email or Skype[1]. These take place when the literature analysis is an advanced stage, with enough understanding of the topic, so a clear agenda for the discussion can be set. The semi structured interviews format is available in the annexes. And finally, the analysis of results, that is mostly subjective or susceptible to individual bias and cannot be generalized to every circumstance. This is principally an evaluation of UKs - Sustainable Communities Plan and the Code for Sustainable Homes that shape public policy in the housing field as a case study; most of the findings are based on the analysis of policy documents, public statements and government web sites. Also project evaluations by external consultants and analysis carried out by the executing agencies are studied. These draw conclusions about the results of sustainable agenda for housing in United Kingdom that might be reasonable lessons in Nicaragua context.

Document analysis generates in between products. Firstly, definitions and concepts that ranges from general to particular, making an emphasis in lesson drawing which is the final goal of the research. Second, two case studies that describe current situation of the problematic analyzed in United Kingdom. Such selection obeys a previous screening and review process of written materials found, and try to clarify why sustainability is sought for housing and social housing. This is followed by the insights of the problematic in Nicaragua's context, which is supported by previous participant observation from the researcher. Finally, the core of the investigation is a sustained discussion of results from the cases studies and correspondent implications for Nicaragua, includes opinions of experts in the subject.

---

[1] Skype is a proprietary voice-over-Internet Protocol service and software application.

Table 1. In between products of the research per topic. Source: Own elaboration.

Topic	Source	Method	Products
Sustainability	Articles-theses	Document analysis	Pick a clear definition of sustainability applicable to the research.
Social Housing	Articles and data set. Policy documents.	Document analysis	Definition in dif. context. Examples
Sustainable social housing	Books-Articles	Document analysis	Concepts/Definitions. Experiences and results (effectiveness and efficiency)
Lesson drawing	Articles	Document analysis	What is it, why can be useful, who might do it, when and how to use it?
Sustainable housing in the United Kingdom	Articles and data set. Policy documents-Codes	Document analysis	Why sustainable housing? What has been done related to the sustainability agenda in housing?
Social housing Nicaragua	Own experience in housing subject. Previous thesis Official documents. Articles and data set	Previous participant observation Document analysis	Insights about social housing development in Nicaraguan context Institutional data to set the context.
	Interviews	Semi structured interviews through electronic means, with open ended questions mostly regarding experience and specific opinions on sustainable housing	Experience and opinions regarding current social housing policy to find out if the sustainable agenda is required

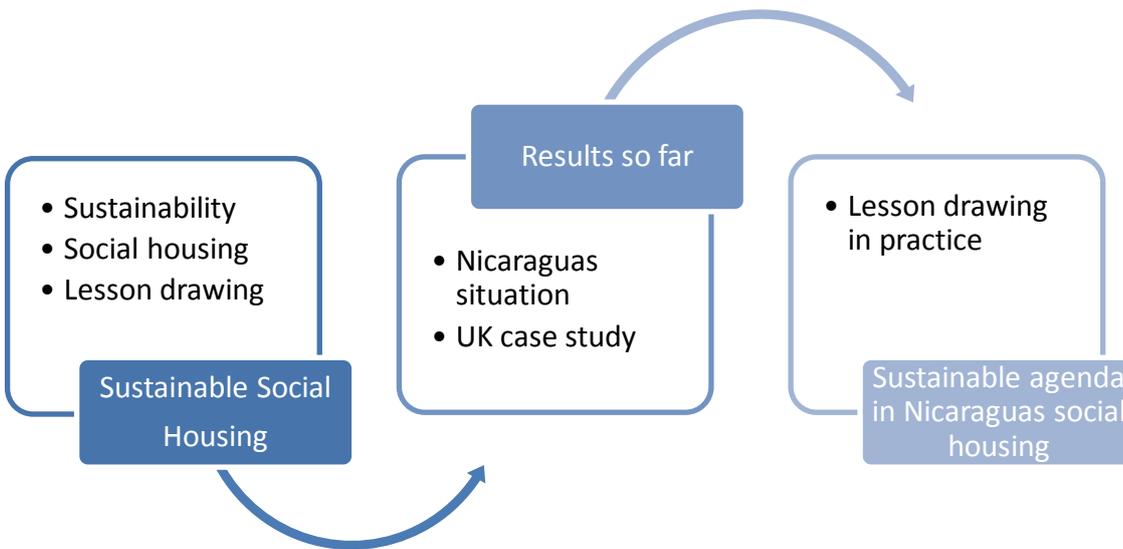The research process can be presented as the following conceptual framework:

As shown above, the starting point of the research is definitions of: sustainability in general, social housing in the United Kingdom and Nicaragua's context, lesson drawing and sustainable social housing. These lead to description and understanding of two precise policies regarding sustainable housing in the United Kingdom, with their respective results. It is important to note that even though those are labelled as sustainable housing as a general term and do not include social housing in their titles, this typology is also contained in their goals and objectives. Nicaragua´s social housing problems and current situation is also presented and analyzed since the sustainability agenda does not exist yet. Finally, produce the lessons from United Kingdom that can be useful in Nicaragua's context, based on results expressed so far on available assessment documents.

1.5   Chapter outline

This thesis is divided into six chapters. Following the first introductory chapter, the **chapter two** provides the theoretical framework with definitions of matters being studied such as sustainability, social housing, and sustainable housing. It elaborates a theoretical foundation of the research and explanations of how lesson drawing theory can suit the research problem. **Chapter three** describes sustainable housing policy in United Kingdom, starting with the problem definition that led to incorporate the sustainable agenda, followed by the institutional context and two relevant cases: Sustainable Communities Plan of 2003 and Code for sustainable homes and their results so far. **Chapter four** presents Nicaragua´s social housing situation, from its historic background, explaining its problems and dilemmas, understanding the institutional context with the policy and strategies used, and finally their results until now. The **chapter five** focuses on the analysis of United Kingdom's lesson drawing, determining the feasibility of implementing the

sustainable agenda in Nicaragua context, based on UKs approach and results. It also sets the possibilities and constraints that might arise when creating conditions for its implementation. As the end of the research, **chapter six** presents a final conclusion of the analysis presented in chapter five and followed by some recommendations.

2. SUSTAINABLE SOCIAL HOUSING AND LESSON DRAWING

This chapter provides the theoretical framework as a basis for this research. It elaborates on the interlinked concepts of sustainability, social housing and sustainable housing. It also explains lesson drawing theory related to policies and how it can suit the research problem. The housing sector is mayor energy and resource user, its repercussions in climate change and water supply shortages have been recently acknowledge and the call for sustainable practice has started. The lesson drawing pursuit has a simple rationale behind it: not to start from scratch all over again because in some countries the same problematic is being tackled nowadays.

2.1. Sustainability

There is significant disparity in the understanding of the term sustainability since it was first referred as sustainable development in 1987 with the Bruntland Report (Connelly, 2007; Gunder & Hillier, 2009). However, as Gunter & Hillier (2009) points out, it has three clear principles embedded within that are not in discussion: futurity or long term thinking; equity for current generations and quality of life preserving environmental quarrying capacity. It is now recognized that its trigger is climate change (Wilson and Piper, 2010) and a mayor challenge is achieving it in our competitive and globalized world.

   For Edward et al (2001) the emerging sustainability doctrine holds that the natural environment can be protected, the economy developed, and equity achieved all at the same time and that the extent to which we are successful in this simultaneous achievement is the extent to which we will achieve sustainability. Consequently sustainability can be understood as the effective balance of objectives related to these three dimensions or triple bottom line: environment, economy and society. See figure 2.

Figure 2. Triple bottom line approach. Source [online] available at< http://sustainability.maricopa.edu/what-is-the-triple-bottom-line/>

   In Markusen (1999) words it is also a 'fuzzy concept' since it possesses two or more alternative meanings and thus cannot be reliably identified or applied. It is noteworthy to remind that for

some it is an undefined ideal, as for Gunder & Hillier (2009), because it is unknown how to make it operational and we can go even further by adding that since the term comes from sustainable development, two words or concepts that are opposite themselves, there is no way that it can be possible achieved. Sustainability is good while unsustainable is bad; therefore sustainability is set nowadays as the ultimate goal in governments planning systems. Even though discussions on the sustainability issues are really deep and interesting, the purpose of this research is not argue or clarify the many definitions, but to select one that is suitable and workable in accordance with the main objective of this study and which would contribute to its practice in planning profession.

Edward et al (2001) also acknowledge that sustainability and planning are 'inextricable linked and mutually relevant'. This can be seen as a connection between urban dynamics and environmental degradation, in which industrialized cities make use of resources (for instance extraction and waste disposal) beyond ecological capacity putting at risk society itself.

The sustainability discourse has an ideal or utopian appearance represented in the triple bottom line approach, but does not mean zero growth (Meadows, 2004). However, its different components seen as separate aspects can look be more real, as mention by Alfons (2009):

Environmental sustainability, relate to the way the ecosystem is treated in order that its quality and potentiality are preserved while fulfilling the present need. It is highly linked to climate change. This aspect is about physical phenomena within which people are contained. Discussions within this topic include healthy environment, air condition, green open space, etc. The most challenging issue in the discussion of environmental sustainability is how to measure and what unit of measurement to use.

Economic sustainability is about the firmness of people's efforts to fulfill their financial needs. This is not only about how to obtain maximum profit but also about efficiency and continuation or guarantee financial support in the long run. Measuring economic aspects is relatively easier than measuring the other two aspects because monetary unit is one thing agreeable to economic actors, although involving complicated variables.

Social sustainability concerns implications of development to the social life of society affected by the development. This includes the way the society adapts with its environment and interacts with each other. Although not come as the first consideration, which is given to the environment, social sustainability is obviously important because the aim of development is for the society. For its assessing parameters such as equity, diversity, interconnectedness, quality of life, democracy and governance are needed.

A sustainable environment and economy are meant to be part of a sustainable society as well. Consequently, a full understanding of sustainability at all levels in planning practice is essential to its successful implementation.

2.2. Social housing

For Merriam Webster dictionary, housing as a general term, is equivalent to dwelling (a shelter or house) provided for people. However, a specific definition for social housing is context dependent, and this research is only concerned with United Kingdom's and Nicaragua's contexts. Thus in the United Kingdom, social housing refers to those with adequate standard provided for low-income or socially disadvantaged tenants - on a nonprofit basis or at least below commercial rates, which receives subsidies for more than 20% of the development budget. Applied to the England and Wales, this definition of social housing covers provision by local authority landlords and all Registered Social Landlords (RSLs) operating on a basis of accepted and regulated standards of good practice in relation to physical conditions, management, allocation, equal opportunities and accountability to tenants and other stakeholders. Most RSLs are housing associations, but there are also trusts, co-operatives and companies. The Housing Corporation maintains a public register of organizations with the special status of RSL (Maby, 2009).

Harriot et al. (1998) emphasize that the main characteristic of social housing is that it is provided by organizations that do not seek make a profit. Their main targets are those households which find it difficult to obtain a decent home (in terms of size and quality) in private markets.

A linked category to social housing is that of 'affordable housing'. While social housing comprises those dwellings owned by RSLs and Local Authorities as defined above, affordable housing is subsidized or low cost housing of any tenure. This is housing of an adequate standard which is cheaper than that which is generally available in the local housing market.

UK government Department Communities and Local Government's (2007) considers that affordable housing includes social rented and intermediate housing, provided to specified eligible households whose needs are not met by the market. Affordable housing should:
– Meet the needs of eligible households including availability at a cost low enough for them to afford, determined with regard to local incomes and local house prices.
– Include provision for the home to remain at an affordable price for future eligible households or, if these restrictions are lifted, for the subsidy to be recycled for alternative affordable housing provision.

Maby (2009) argues that the housing and homelessness charity Shelter, highlights the problem of homelessness in the UK, and sees social housing as key to solving the homelessness crisis, because it provides a vital form of affordable housing. She points out that there is not enough social housing in England to meet current housing need and waiting lists are at an 'all-time high'.

In Nicaragua context, social housing is defined by the law, 'Ley especial para el fomento de la construcción de vivienda y de acceso a la vivienda de interés social', as the one developed to guarantee the right to housing for low income, moderate and middle households. In order to provide security to households whose incomes are between one and seven minimum wages or considered inferior to the minimum wage, social housing is that construction with a minimum area of thirty-six square meters (36 mts²) and a maximum of sixty square meters (60 mts²) including basic services, whose construction value not exceeding twenty thousand dollars (U$ 20,000.00)[2] and is part of the family patrimony.

It is a response to the needs of the most vulnerable population, because facilitates their access to a housing solution. The social housing provision is intended to answer two critical issues: first, to offer housing solutions to low-income areas with low ability to pay monthly mortgages, and second to promote employment, especially in the sectors affected by their limited training, unemployment and lack of opportunities. (Vanegas, 2007)

In Nicaragua's case, the central government through the Nicaraguan Institute of Urban and Rural Housing (Instituto Nicaragüense de la Vivienda Urbana y Rural-INVUR), different NGOs and in recent years private companies are in charge of social housing provision. The participation of the latter is the result of the government's initiative to overcome the economic crisis that started with the construction sector in 2008.

---

[2] This cost is subject to annual revisions by the correspondent authority.

In both contexts, United Kingdom's and Nicaragua's, social housing is intended to reach those in more vulnerable conditions. Nicaragua's definition can be considered narrower, more prescriptive, and more limiting due to pre established size and construction cost, than the UKs.

2.3. Sustainable social housing

There are no straight or clear definitions of sustainable housing or sustainable social housing in literature so far; but there are references of the first. We could argue that the definition is the sum of three terms; however it is valid to add to this simple logic a starting point, again the Bruntdland report but with specific support by Agenda 21 (UN, 1993), precisely for chapter 7 - Promoting sustainable human settlement development. Its objective was ´to achieve adequate shelter for rapidly growing populations and for the currently deprived urban and rural poor through an enabling approach to shelter development and improvement that is environmentally sound´. That constitutes a direct reference to social equity in the search of development while preserving the environment.

While placing sustainable housing definition in a current discussion, it is noteworthy that the adjective sustainable, coming from the verb sustain, is use in many current discourses (mostly political) and instantly gain a positive value. Sustainable becomes good while unsustainable is bad. Now, by adding the sustainable part to housing and social housing we can obtain a more specific definition also context dependent. In United Kingdom for instance, 'Sustainable housing is defined as housing that has environmental and social benefits above those of an average new UK house' (Lovell, 2004). Most of the time sustainable housing projects come from private developers and are merchandise with a green and eco twist, that is the case of an autonomous house in Sothwell, a large sustainable development like BedZED in London; low impact settlements or green construction schemes.

Figure 4. BedZed: the Beddington Zero Energy Development. Designed by eco-architect Bill Dunster. Source [online] available at < http://www.hughpearman.com/articles5/bedzed.html>

In a not as developed context as the previous, in case of South Africa, sustainable housing is 'housing which meets the critical objectives of the national housing policy (adequacy, access and affordability) for all South African nationals and residents while being responsive to both socioeconomic and bio-physical principles of sustainable development'(Joburg, 2001). Again sustainable is good and better than others.

And if housing can be sustainable, social housing might be as well. In the social housing terrain, using the basic idea pursued by the Sustainable Social Housing Initiative -SUSHI- of UNEP (2011), a sustainable social housing would be that promoting the use of resource and energy efficient in building solutions, encompassing actions for social equity and economic durability but mainly destined to those with less economic resources. This definition might prevail because it designates the sustainability of social housing taking social housing as a general term that might not differ so much from one context to another.

It is often believed that sustainability concepts can only be applied to high-standard, expensive buildings (UNEP 2011), however due to our current living conditions sustainable agenda in social housing seems justified: First, the built environment has a profound impact on our natural environment. Second, interest in reducing carbon emissions has increased dramatically in just the past year as concern about climate protection has moved to the top of the public agenda. Third, beyond reducing residents' energy bills, sustainable housing also offers healthier living environments and more efficient, durable buildings with a lighter environmental impact and lower costs of operation. (Myerson, 2007)

As explained by Carter et al (2002) the significance of the construction sector to the success of sustainability was recognized at the 1992 Rio Summit with the formulation of Agenda 21. This had the aim of harmonizing action in terms of sustainable construction and the built environment on a

world-wide scale. Two of the main preconceptions which slow down investments in sustainability in social housing are that (1) social housing units have a low environmental impact, not justifying sustainable investments and (2) sustainable solutions are far too expensive to include in social housing, as they would increase the cost of the unit and make it unaffordable for both users and developers.

According to United Nations Environmental Program (UNEP), buildings are at the center of our economic and social lives, providing shelter, work places, and spaces for commerce and leisure. They also put a tremendous strain on our environment, being responsible for a significant share of global energy use (approximately 40% of global energy use), resource consumption (more than 30% of materials use and 20% of water use) and waste generation (30% of solid waste, 20% of wastewater). The building sector is also the source of more than 30% of global greenhouse gas (GHG) emissions, being therefore a crucial sector to address to combat climate change. In its 2007 report, the Intergovernmental Panel on Climate Change (IPCC) highlighted the building sector as having the greatest potential to reduce GHG emissions, at the lowest cost. With proven and commercially-available technologies, the energy consumption in both new and existing buildings, as well as the related GHG emissions, can be reduced by 30-50% without significantly increasing the investment costs of new construction or renovation projects.

Sustainability in social housing is not only related to climate change mitigation, but defined here in a holistic manner. In addition to improving human well-being, comfort and health, sustainable housing units can generate new economic opportunities for residents and users through urban integration and planning. Finally, as state by Armstrong (2000) housing is sustainable if everyone has the opportunity of access to a home that is decent, if it promotes well being, understood as a healthy and prosperous development accompanied by social cohesion, or the chance of bonding with society.

2.4. Lesson drawing

If some developed countries are moving towards sustainable solutions for housing and social housing as well, it might be reasonable to think it is time for developing countries to step in that scenario also. Based on the dissatisfaction with the results of current social housing projects in Nicaragua, in the social and environmental aspect (Vanegas, 2007), lesson drawing can be a useful resource to apply in policy making as a form of research process and decision-making.

Rose (1991) alleges that lesson drawing is about whether programs can be transferred from one place to another, and those lessons can be sought by searching across time and space motivated by current dissatisfaction. The role of organized interests such as business associations, trade unions and promotional groups should be considered, particularly the manner in which they have a capacity to perceive policy failure and redefine their interests. Such groups have significant capacities to 'puzzle' in their own right and recognition of this capacity is all the more important in

policy settings where such groups may be incorporated into policy formulation and/or implementation

Stone (2000) mention that with the lesson-drawing literature the emphasis is to understand 'the conditions under which policies or practices operate in exporter jurisdictions and whether and how the conditions which might make them work in a similar way can be created in importer jurisdictions'. In the lesson-drawing perspective, 'the prime object is to engage in policy transfer – to use cross-national experience as a source of policy advice'. She also acknowledges that theoretically, lesson-drawing can occur across three orders of change. 'First order' change involves 'satisfying' and minor adjustments in the precise settings of policy instruments. Second order learning is characterized by re-tooling, limited experimentation and introduction of new policy techniques. This involves more obviously political and strategic factors. Changes at these two levels are characteristic of normal politics. 'Third order' change involves a radical shift in 'the hierarchy of goals and set of instruments employed to guide policy'.

In previous research, Vanegas (2007), demonstrated how the same social housing typology that is currently being build in Nicaragua, is costing homeowners their comfort and increasing their energy bills. In extreme cases due to climate characteristics and construction materials, some homes are even more uncomfortable to remain in compare to the outside. The situation is extreme in Managua, the capital city, where urbanization is higher than in the rest of the country due to continued rural migration. This situation reveals the need for a change towards a sustainable housing solution.

With the cases analyzed in the context of Managua, it´s evident how critical it is to incorporate sustainability parameters not only for social housing but in the buildings in general. As the target population for this type of housing is very vulnerable socially it should be prioritize by achieving a sustainable habitat. Suitable environmental conditions of space will result in more satisfied families whose quality of life will improve dramatically, and so will benefit not only the neediest citizens but the general population, which carries a valuable contribution to the health, productivity and welfare with less environmental impact. Given the challenges and limitations of space (land), energy and water worldwide is even more important to begin to plan, design and build, in Managua, more rational and accordingly with available resources.

For developing countries, such as Nicaragua, the demand for learning is strong, because policy makers want to improve national conditions and look abroad for intellectual as well as material aid (Rose, 2002). However desirability does not guarantee practicability and it becomes a matter of politic interests rather than a technical issue. Only time can tell if a new idea or concept it's worth implement it or not. Sustainable housing and specifically sustainable social housing are such recent concepts being implemented in developed countries that it requires a methodic study to obtain a lesson from it and implement it in a developing country. Lessons are tools meant to guide actions and lesson drawing is a very practical method. Consequently for its applicability, Rose (2002) simplifies in a check list the necessary steps to follow:
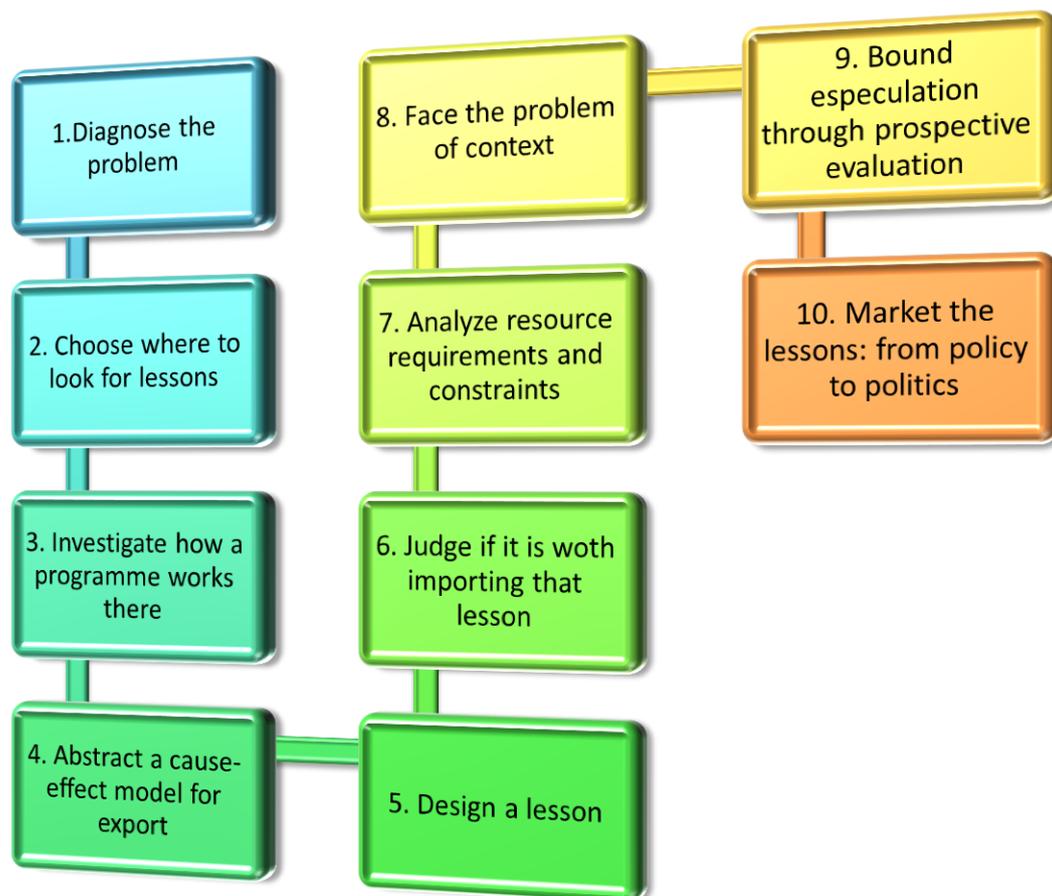
Figure 5. Ten steps for lesson drawing. Source: Own elaboration based on Rose (2002)

The starting point is to know the problem at home. A second step involves relevant points in order to select the country to learn from, such as ideological compatibility, similarities in resources, psychological not geographical proximity, availability of evidence and interdependence. Third step encourages firsthand research for a complete understanding not only in papers but in reality. In the fourth step, the model that will help to recognize cause effects relationship should identify rules for action set out in laws and regulations, administrative requirements to deliver a program, personnel requirement, money, and program recipients. Fifth step is related to selection of what exactly could or should be applied from that foreign experience, depends is it is an adaptation, hybrid or synthesis model or just inspired by learning abroad. With the sixth and seventh steps the analysis of desirability and applicability must be accomplished, by judging if the program would operate as well as home as abroad and also by analyzing the resources, personnel and financial. The following step refers to the understanding of national context and its dynamics because it influences the way a program can operate and its effectiveness. The ninth steps recommend prospective rather than retrospective evaluation of the program, to give warning of what to avoid by calculating its future effects. The last step is intended to increase the attractiveness of the lessons in politics by using positive symbols that sell the main idea.

2.5. Concluding remarks

Sustainability + social housing = Sustainable social housing

Developed country ≠ developing country

Sustainable housing policies in a developed country → lessons for a developing country

In an ideal situation, sustainable social housing would fulfill the three aspects of sustainability. However it is acknowledge that even the most ambitious projects that pursue such sustainability quest can have failures in more than one of those principles. For instance there can be projects energy efficient that are less harmful for the environment by reducing CO_2 emission, but they are not affordable for many or are placed in sites where there is no chance that social cohesion can happen. Therefore it is not out of order to think in levels of sustainability as a comparison indicator rather than a whole. In that way a social housing project is not completely 'sustainable' but more sustainable compare to others. Sustainable can mean a better future for all, mainly those in need in both, developed and developing countries.

Given the obvious differences between United Kingdom and Nicaragua, ranging from cultural to economics, policy transfer is not sought. Even though it is not a complex definition, in practice is a conflictive resource. In this case, the choice is to think of smaller firm steps that are closer to reality and use lesson drawing. It is essentially as proposed by Rose, a check list compose of different steps to achieve a goal. In both cases a mayor problem is shortage of decent and suitable social houses which constitutes the starting point for lesson drawing from the cases studies that follow.

3. SUSTAINABLE HOUSING IN THE UNITED KINGDOM

This chapter explains the problem of unsustainable housing in United Kingdom. It gives an overview on how the planning system works and how the sustainable agenda for housing arose. It also describes two important steps that UKs government is taking to achieve sustainable housing, one concerned with planning and the other with construction itself.

2.6. Problem definition

The pattern of growth in United Kingdom has been characterized by sprawl that tends to be highly energy inefficient, using a big amount of resources like land or infrastructure among others. As referred by Smith (2008) building, by the year 2000, was mainly in low density and had major impacts on public services; actually in many areas there were too few people to keep them going. This spread has fractured the spatial integrity's of people's lives, by making them travel much further to develop their main activities (work and leisure). In other words, this developing path has showed to be unsustainable because of the problems related to economy, environmental issues, social inequity and isolation.

A present problem with consequences in the future requires a shift in thinking and acting. Consequently the UKs government has acknowledged the need for a transition and has identified a set of drivers of change towards sustainability (Local government, 2006) that are linked to planning:

- Demographic: The population in England will be older and will live longer; be made up of more varied and smaller households; need more care and more skilled workers.
- Economic: The world economy will be more global, jobs more 'mobile' and Asian economies more significant. Knowledge and service sectors will expand their share of Gross Domestic Product / employment.
- Environment and resources: Climate change, emissions control, waste management and resource demand caused by economic growth will continue to present challenges and opportunities.
- Societal: Traditional values and structures are dissolving into fluid groups based on interests and ideas as people search for more individualized and better quality of lifestyle.
- Science and technology: New technologies will continue to enable innovation in all aspects of work, life and care.
- Governance: Political passion will increase and traditional engagement decrease, as new forms of involvement, expression and protest, based on narrower interests, and diverging circumstances emerge.

The sustainability discourse for UK suggests that housing is not seeing as a separate issue. Harriet and Matthews (1998) stated that originally housing provision was a private business, but since the 19th century is also a government concerns. It started with the government intervention

in rent controls and evolved to the provision through subsidies to tackle the social housing demand. Since 1979 there are two main social housing providers: local authorities and housing associations. They must follow regulations including in the planning system and in the construction sector, which shows that housing is a fundamental part of sustainable development.

2.7.   Institutional Context

According to Enabling Projects Limited (2011), planning is a crucial part of delivering the UK government's policies on sustainable development and sustainable communities, as one of the most important delivery agents that will allow to make a positive difference to the problems of climate change and global warming. In order to understand how the sustainable agenda works in the United Kingdom, it is convenient to take a look at its institutional context which operates in three different levels within the planning system (RTPI, 2006) national, regional and local:

First at National Level: Parliament is responsible for making laws and setting out the legal framework for the spatial planning system in England. The basic national legislation governing the planning system comes from the Town and Country Planning Act 1990, amended several times, particularly by the recent Planning and Compulsory Purchase Act 2004. Relevant legislation includes the Planning (Listed Buildings and Conservation Areas) Act 1990, the Planning (Hazardous Substances) Act 1990, Environment Act 1995 and the Highways Act 1980.

It is the responsibility of the Courts to interpret legislation and make judgements on a whole range of planning matters. Both central and local government must act within the powers conferred upon them by the above legislation.

The national Government oversees the planning system, although planning powers have been devolved to the Governments of Wales, Scotland and Northern Ireland. The Department for Communities and Local Government (DCLG) is the government department responsible for running the planning system. It was established in May 2006 and is the successor of the Office of the Deputy Prime Minister, established in 2001. This Department sets policy on supporting local government; communities and neighbourhoods; regeneration; housing; planning, building and the environment; and fire. The Department, according to its web page, 'is ending the era of top-down government by giving new powers to councils, communities, neighbours and individuals' (DCLG, 2012).

It has three main roles which are: setting overall planning policy through White (Command) Papers, Circulars, Planning Policy Statements (PPS), Mineral Planning Statements (MPSs) and Regional Spatial Strategies (RSS); in exceptional circumstances, confirming the adoption of Local Development Plans prepared by local authorities; and finally making decisions on planning appeals and major planning applications.

Various other central government departments also have a role in planning matters, including: Transport (DfT), Culture, Media and Sport (DCMS), Environment, Food and Rural Affairs (DEFRA).

There are a range of executive agencies, relevant to planning, which support the Government's work including: the Environment Agency, Natural England, English Heritage, Sport England, the Regional Development Agencies and the Urban Development Corporations. Each region of England also has a Government Office, representing many government departments, including the Department for Communities and Local Government.

Regional Level: Regional Planning Bodies (mainly Regional Assemblies) are the organisations responsible for preparing, monitoring and reviewing Regional Spatial Strategies (RSS), which guide the broad direction of development in a region. Sub-regions (part of regions) involve County Councils.

Local Level (County/District/Borough/City): In the larger urban areas of England, and a few rural areas, local government consists of 'Metropolitan' or 'Unitary' Councils and there is only one authority for all council matters. In the less urbanised parts of England (known as 'Shire' areas), local government is divided into two tiers: County Councils and District Councils also known as the local planning authority (LPA). The Metropolitan, Unitary and Shire District Councils are responsible for preparing planning policy documents (plans) for their area.

County Councils are responsible for minerals and waste planning (including Minerals and Waste Local Development Frameworks) and their own development, for example education and highways, although they can get involved with and comment on planning matters at both regional and local levels. Most rural areas also have Parish or Town Councils that merely comment on planning matters without any powers to prepare formal development plans or decide planning applications.

The involvement of many institutions in this planning system suggests a bureaucratic and complex process, with a combination of a top down and bottom up governance approach. However the role of the Department for Communities and Local Government for setting policies stands out. It is also relevant the link of environmental laws with planning since 1995, it appears to be the first connection with environmental sustainability.

2.8. Policy, programmes and recent plans

Pickvance (2009) argues that the existence of a sustainable housing policy derives primarily from UKs successive international commitments of successive UK governments to cut the emission of greenhouse gases, since Rio[3].

He also explains that 'houses' produce 24%[4] of all greenhouse gas emissions in the UK. Such environmental impact has four sources: the location of the dwelling, the construction process and

---

[3] United Nations Conference on Environment and Development (UNCED), Rio de Janeiro, 3-14 June 1992. Also known as the Earth Summit.
[4] Some authors, like Forbes (2007), talk about a 27%.

raw materials, the dwelling's technical features, and those activities of the household(s) occupying it that take place in the dwelling.

Housing affects many other aspects of the environment: water supply and drainage; the cost of utilities and other infrastructure, such as roads; the pollution and noise impact of development; the loss of green spaces and increased risks of flooding; the ecological imbalances caused by more and more development; the unmanageable traffic congestion fuelled by the outward building of more homes. All of the above might explain as well the importance to deliver sustainable buildings but moreover sustainable homes.

Current sustainable housing policy measures have been group by Pickvance (2009) into four main types: domestic energy-saving measures, sustainability rating schemes, Building Regulations, and planning policy. These policies involve different mixes of the three forms of policy: exhortation, regulation, and economic measures. For the purpose of this study, an example of exhortation policy in planning - Sustainable communities program - and one of regulation for construction – Code for sustainable homes - are analyzed through assessment document, due to their current applicability.

2.9. Sustainable communities plan and Code for sustainable homes

In 2003, the former Office of the Deputy Prime Minister, now DCLG, launched a specific programme of action for delivering sustainable communities in both urban and rural areas, named Sustainable Communities: Building for the future.

The plan originates from government's commitment to sustainable development. It defines sustainable communities as more than just housing, as places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all. It also tackles social and environmental issues as part of the sustainability agenda, by asserting that for communities to be sustainable, they must offer

- decent homes at prices people can afford
- good public transport
- schools
- hospitals
- shops
- a clean and safe environment.

According to Department of Communities and Local Government (2003), this sustainability in communities focuses on eight components:

- *Governance*- Well run communities with effective and inclusive participation, representation and leadership.
- *Transport and Connectivity*- Well connected communities with good transport services and communications linking people to jobs, health and other services.
- *Services* - Public, private and community and voluntary services that are accessible to all.
- *Environmental*- Providing places for people to live in an environmentally friendly way.
- *Equity*- Fair for everyone in our diverse world and for both today's and tomorrow's communities.
- *Economy* - A thriving and vibrant local economy.
- *Housing and the Built Environment* - High quality buildings.
- *Social and Culture*- Active, inclusive and safe with a strong local culture and other shared community activities.

This programme has made housing a central element in its overall growth and development strategy. Housing shortages and costs are significant factors in the recruitment and retention of key public sector workers, with resultant major impacts on health, education, transport and social services. Housing and neighbourhood decline are considered major factors in large parts UKs urban landscape around and the problems of low demand in some areas dominate much government thinking.

Thus this programme aims to address the challenge of delivering 'sustainable communities' through a range of measures and allocating economic resources to meet high housing demand and cope with the environmental and social impact of low demand. It makes reference to other implications like protecting ecosystems and biodiversity, for reducing sprawl and congestion, for creating safer, healthier, greener environments, for housing growth and decline. In respect of housing and the built environment its main goals and actions:

1. Decent homes, decent places
   Make social housing decent. Those dwelling below the standards should be improved due to their importance for vulnerable households. Those need to be in a reasonable state of repair, provide reasonable thermal comfort, modern facilities and services.
2. Low demand and abandonment
   Replace obsolete housing with modern and sustainable accommodation in places where the demand for bigger housing is low. Try to reuse brown field land.
3. A step change in housing supply
   New housing needs to be more sustainable in its use of resources. That is why new constructions need to comply with new standards like Eco homes pass standard. And eventually raise standard to good.
4. Land, countryside and rural communities

It refers to tackling housing shortage will protect countryside and enhance its quality rather that create urban sprawl. Stop wasteful use of land.

5. Sustainable growth

Ensure the international competition of the country by bringing together the best of design and planning.

This programme can be seen as a general step towards sustainability that encompasses the housing issue as the most relevant agent of change. As emphasize by Edwards (2000) individual dwelling is important but the main benefit lies in tackling volume housing and existing urban areas. And the sustainable communities programme basically states that by tackling housing problems, not only dwelling but also communities will become more sustainable in the long term.

A more precise, prescriptive and very technical action towards sustainable housing is the code for sustainable homes: A step change in sustainable home building practice. This is an environmental assessment method for rating and certifying the performance of new homes based on BRE Global's EcoHomes scheme[5]. In December 2006 DCLG, established as a goal that new houses should minimize the use of energy and reduce the harmful carbon dioxide emissions. Therefore, this code is intended to be a standard in the design and construction of new houses, and it is directly link to building regulations, which are the minimum standards required by law. This code builds upon Eco homes standard basically to obtain energy and water efficiency. In addition, it reinforces the idea that to keep competitively in construction sector, it is necessary to reduce environmental impacts, lower running costs and features that enhance health and well-being.

While the code is voluntary, providing a rating against the code is mandated by legislation. However since 2008, level three of the code is mandatory in new social housing if a government's grant is sought. This means that certain features must be complied. Adopting this, suppose an increment in the building cost, but authorities state that it can be compensated with the long term benefits for the environment, home builders, social housing providers and consumers by reducing green house emissions, better adaptation to climate change, lower running cost, improved comfort and satisfaction and improved well being.

It works with a rating system, indicated by stars from one (entry level) to six (highest level reflecting an exemplar achievement in terms of sustainability). These are the results of assessing in nine design categories: energy CO2, water, materials, surface water runoff, waste, pollution, health and well being, management and ecology. It is important to mention that the code is a technical guide with many specific features.

---

[5] Launched in 2000, EcoHomes soon became mandatory for social housing in 2003 of which a 'Good' rating was shortly replaced in 2005 by a 'Very Good' rating. Over 200,000 homes have been certified since its launch. In April 2007 the Government's scheme, the Code for Sustainable Homes replaced EcoHomes for the assessment of 'new' housing in England, Wales and Northern Ireland.

Table 2. Summary of environmental categories and issues. Source: Code for sustainable homes 2010.

Categories	Issue
Energy and CO2 Emissions	Dwelling emission rate (M)
	Fabric energy efficiency (M)
	Energy display devices
	Drying space
	Energy labelled white goods
	External lighting
	Low and zero carbon technologies
	Cycle storage
	Home office
Water	Indoor water use (M)
	External water use
Materials	Environmental impact of materials (M)
	Responsible sourcing of materials – basic building elements
	Responsible sourcing of materials – finishing elements
Surface Water Run-off	Management of surface water run-off from developments (M)
	Flood risk
Waste	Storage of non-recyclable waste and recyclable household waste (M)
	Construction site waste management
	Composting
Pollution	Global warming potential (GWP) of insulants
	NOX emissions
Health and Well-being	Daylighting
	Sound insulation
	Private space
	Lifetime Homes (M)
Management	Home user guide
	Considerate Constructors Scheme
	Construction site impacts
	Security
Ecology	Ecological value of site
	Ecological enhancement
	Protection of ecological features
	Change in ecological value of site
	Building footprint

An example of compliance with this regulation is the Kingspan Lighthouse. It is a project conceived, designed and built to achieve the highest level of the Code for Sustainable Homes by Potton, a timber frame manufacturer. It consist of a highly insulated house with the lowest levels of unwanted air-leakage required the minimum amount of energy possible. Any energy that would be required could be provided by renewable energy solutions like the solar (thermal and photovoltaic). It was built in January 2007 and it was the first home to achieve Code Level 6 at

both design stage and post-completion (Potton, 2012). It was meant for temporary exhibition, so it was deconstructed during 2011.

Figure 7. Kingspan Lighthouse by Potton. Source [online] available at <http://www.potton.co.uk>

Figure 6. Oxley Woods. Housing development. Source [online] available at <http://www.contemporist.com />

Another example is Oxley Woods, a housing development of 145 homes in the village of Milton Keynes, north of London. In 2005, the developers George Wimpey teamed up with the architects from Rogers Stirk Harbour, to enter a competition created by the government to build homes for under £60,000(around € 76,300). Their submission beat 221 others to win the competition. To achieve the necessary cost savings, the walls, ceilings, and floors of the homes are prefabricated in a factory, and then delivered to the site as a 'flat pack' ready to be assembled. Homes there have achieved level 3 of the Code (Oxley woods, 2012).

One interesting case is The Hamptons at Worcester Park in Surrey, in London, which is known as a sustainable development with impeccable green credentials (car pools and solar panel heating) and an example for social housing integration, being a mixed neighborhood with middle class income families and social housing projects. It has also won many awards, including the Evening Standard Best Development Award 2011 and What House Best Landscape Design Award 2011. However, even if it works and it looks like a perfect site to live, work and develop, social injustice is present. Higher income families do not want to live near lower income households, because of vandalism, and now they have even banned children from communal areas at certain hours to avoid more complaints (Dailymail, 2012).

2.10. Concluding remarks

There are efforts generated by United Kingdom government toward sustainability. Acknowledging the problematic of developing and construction patterns followed in previous years, it has set new initiatives towards a better future, a sustainable one.

The involvement of many institutions, with the guidance and hegemony of Department of Communities and Local Government, leads to think of a top down planning system. However it is also present the participation and involvement of councils, with certain independence. So it is fair to say it is mostly a combined system.

In general both, the sustainable communities program and the code for sustainable homes, deal with the sustainability agenda in housing, the first from a planning point of view and the latter in construction and affects specifically new social housing provision. As the sustainability concept involves three aspects, it seems to be accurate to say that the sustainable communities program treats the social and economic aspects, while the code touches the environmental through technical regulations.

Builders and developers are trying to comply with new regulations as the two examples mentioned above reflect. The target is to use effective measures to obtain a better performance of the building in those categories. The two issues with increasing mandatory minimum standards are dwelling emission rate and indoor water use. Using the code suppose an effort not only for builders but also for government, since the latter is in charge of assessing the new dwellings. A complete different story develops in Nicaragua side with less regulations and still little concern for sustainability, at least in planning and construction.

4. SOCIAL HOUSING POLICY IN NICARAGUA

This chapter aims to take a look to social housing situation in Nicaragua and the problems that exist around it. It gives an overview on how the institutional context works and what actions have been taken in order to deal with this issue. It also describes the National Housing Plan, as the main implemented government strategy for Social Housing.

4.1   Problem definition

Housing is really important for social development, due to its link with quality of life and health. (Erguden, 2001). Needless to say, in Nicaragua's context, being the second poorest country in the western hemisphere, its relevance goes beyond the satisfaction of basic needs of vulnerable population, specifically low income households. Housing is a constitutional right, and it is supposed to be a priority for national and local governments.

The social housing problem is one of the many issues Nicaragua has to deal with. This struggle is seen as worst in Managua, where rural migration of those in poverty conditions and the natural population grow increase the housing shortage every year and increment urban sprawl. It is also relevant to understand that housing must have enough quality to resist natural events as flooding or earthquakes, which are common in the country due to its geographical position. Another important factor is the high unemployment rate nationwide, which reduce household opportunities to acquire a decent home.

The private sector is already satisfying housing demand for other social levels. Limited capacity from the governmental institutions to finance social housing has led to a slow attention to demand. This is a problem that many governments have been trying to tackle by providing social housing in association with NGOs and international organizations, but have been not able to solve.

Every housing development, being social or any kind must follow planning regulation from local governments. However, only main cities within the country are able to provide a follow up to the compliance with such regulations. This is mainly because of economic resource limitations.

Since the latest construction crisis in 2008, the government joined forces with private developers for tackling both the social housing shortage and the construction decay (Secretaría de comunicación, 2010), which has resulted in a social housing construction boom (La Prensa, 2012). Those efforts are following the same policy of supply a decent roof at low cost without taking into account sustainability principles in design, construction or in planning. Nowadays, most of the current social housing stock lacks basic comfort conditions which evolve in a major dilemma for homeowners, who need to spend more in energy bills trying to improve their comfort. The relevance of this issue lies in the fact that even if people can afford to own a house, most of them do not have the resources for keeping them in good conditions or improve their comfort.

4.2   Institutional Context

The institutional context related to housing is consider weak, due to dispersion of resources and limited capacity for actions, something that comes from previous decades (Habitat, 2008). The first governmental entity to deal with housing was BAVINIC (Banco de la Vivienda Nicaraguense), and it was replaced in 1998 by National Institute of Urban and Rural housing (Instituto de la Vivienda Urbana y Rural -INVUR). This started to work nationwide since 2003, and its main function as a regency entity is to develop housing policies in accordance to national development plan. Next to INVUR, there is the Social housing Fund (Fondo Social de Vivienda - FOSOVI) in charge of administrates subsidies and credit funds for social housing (INVUR, 2012).

In terms of funding and provision various NGOs have an important role. But it also includes international organizations, whose intervention is not only economic but also regulatory, as the case of Inter American Development Bank. The private sector has also a role in building social houses in association with the government sources, actually banks and developers are now really involved due to new guarantees that the government is giving to credits (Habitat, 2008)

Other important actors in social housing provision are local governments, which have responsibilities in planning issues; due to competences that municipality Act provides (La Gaceta, 1988) also known as Ley de Municipios or Ley 40. Some of them are: Control of urban development and land use, environmental protection, and public infrastructure maintenance. As for Managua city, the local government issues sectorial plans for urban development as general regulations. About constructions, it is Ministry of Transport and Infrastructure the one in charge of developing norms and rules for buildings that are valid nationwide.

In terms of Civil Society advocacy, since 2002, there is a 'Housing Network' composed of thirteen (13) social entities specialized in the area social housing and human settlements, whose line of work is management and production of social housing for poor population, so as to help reduce production costs of housing and, consequently, make it more affordable. (Habitat, 2008)

As Erguden (2001) acknowledge, in developing countries, such as Nicaragua, social housing follows a top down approach. This is particularly the case where there is political pressure to demonstrate quick results through, for example, massive construction of public or subsidized social housing.

4.3   Policies, strategies and recent plans

Plans and policies regarding human settlements and housing in Nicaragua has been limited in amount and scope (Habitat, 2008).

During the 80s, a number of laws influenced changes in urban management and housing. One of the most important was Law of Illegal Settlement, which facilitated starting a broad process of regularization of land tenure and some improvements physical conditions of traditional neighborhoods that accounted for nearly 50% of the urban development.

Another interesting one was the Expropriation Act. This facilitated the urban land acquisition of urban waste lands of the State, for the mass execution of the program enabling land and basic services to low-income population, also known as Progressives settlements. The allocation of land and housing to the population did not last longer due to a government change. In the transition period with a new government of right tendency, in the early 90s this Act prescribed and with two Laws (know as 85 and 86) banned the expropriation of land allocated by the State. This means that property rights became messy and another point to solve before housing provision.

In following years, most policies were the response to special context dependent situations, such as Habitat II in Istanbul, in 1996, which led to National Action Plan for Housing and Human Settlements 1996-2000; which included development of environmental management in local governments and expansion of regulations for environmental preservation in housing and human settlements by reducing physical vulnerability of those at risk. It was also a milestone in planning for making use of a first participatory approach to elaborate it. Some other plans followed it, National population policy (1998), Sectorial plan for social protection (2003), National development plan (2003) and specifically National housing plan (Plan nacional de vivienda - PNV) in 2005. It is worth noting that in the general, none of these plans use the term sustainable, and there has been no direction toward sustainability, but there have been efforts toward environment protection within the social housing policy.

4.4   National Housing Plan 2005-2025 (Plan Nacional de Vivienda)

Nicaragua's National Housing Plan has a vision for twenty years, in which housing provision is intended as a combination of free market, government subsidies, land use and programs directed to housing improvement. It is considered a big challenge mostly due to economic reasons, and housing is the main pillar of national policies against poverty (INVUR, 2005)

This plan elaborated by INVUR in 2005, seeks to satisfy two critical demands: first, to provide housing solutions to low-income households with the possibility of low monthly payments and second, promote employment. The explanation for this is Nicaragua's high percentage of formal unemployment.

The plan also presents some specific objectives for dealing with housing provision (INVUR, 2005):

- Institutional consolidation by declaring the plan as a national interest issue, giving INVUR the role of projects promoters in urban land.
- Promote the participation of various actors in housing funding for whom subsidies and guarantees will be available. Including private parties and NGOs, in coordination with local governments in an organized manner.
- Guarantee housing funding. Bigger alliances with private parties including financial institutions providing more guarantees for risk takers.
- Increase urban land in association with local governments.

For achieving these objectives it proposes a list of actions divided in two; for short term (immediate actions) and medium/long term, which are mostly legal oriented actions.

Inmediate actions:

• Creation of a national housing board

• Establishment of a program to promote basic services between the municipalities for the implementation of subsidies for basic module housing.

• Establishment of the savings fund for workers' housing

• Strategic regularization program of land tenure

• Home mortgage financing program with access to subsidies for $ 15,000 homes.

• Establishment of mutual funds

• Promotion of a program for mortgage and insurance guarantees

• Promotion of credit bureaus

• Program to encourage and boost the construction industry

Medium and Long term

• Legal formulation and establishment of urban development areas and priority areas for concerted development

• Legal formulation and establishment of special improvement taxes

• Promotion of securitization or securitization of mortgages

• Promotion of a program to establish national or American financial standards such as dollarization or indexation of mortgage refinancing.

After its publication and due to current global economic situation more legislation has arrived to back it up. Like in 2009, a special law came into Special Law for the Promotion of Housing Construction and Access to Social Housing. This involves special alliances between government and private developer for the provision of new social housing, with enough guarantees and tax exemptions to make it market attractive.

An example of this kind of development is San Andres, a residential area, with houses fitting in the social housing category with the construction area restrictions as well, but inside a close gate community. This reduces the urban integration to the city, and increases car dependence, becoming again unsustainable.

Figure 9. San Andres, social housing development by a private developer in Managua. Source [online] available at < http://www.lacayofiallos.com

4.5   Concluding remarks

Nicaragua scene in social housing provision is totally different compared to United Kingdom. It struggles for satisfying housing demands while also dealing with an urban crisis, and to respond to that, government is leading massive social housing construction projects but without regarding sustainability parameters.

Even though local governments have important responsibilities for planning issues, when developing a new project for social housing the leading authority remains INVUR. That is why it is considered a top down and centralized system, with the most prevailing rules from national government. Not so open to new schemes of housing provision before but now with alliances with private parties.

Social housing policies are not so many, and have been produced by external pressures. There have not been many efforts to application follow up. Not so precise. Legislation is not strict enough

The most important plan elaborated, National Housing Plan, does not include the sustainability agenda. It focuses on the promotion of new housing construction. It also adds in the planning arena the issue of more urban land according to new development requirements. It is also worth noting that it does not refers to housing design in any respect, what makes applicable the same social housing design from definition by law (See chapter 2).

5. ANALYSIS OF SUSTAINABLE HOUSING AGENDA IN UNITED KINGDOM'S CONTEXT AND SOCIAL HOUSING SITUATION IN NICARAGUA

Even with their major differences, the countries studied in this research present the main similarity that their governments are placing housing in the centre stage of development strategies, due to the need of tackling the housing shortage as soon as possible. In both cases, the plans for doing so are relatively new which means that their assessment or evaluation is more indicative than representative (lack of a continuous monitoring and research). This chapter makes a critical analysis of the main results of programs and plans described in previous chapters, based on reviews, assessment and evaluation documents, and answer the three final research questions presented in first chapter.

5.1 What are the results, both positives and negatives, of that agenda so far?

Bergman et al (2007), express that sustainability in housing and communities in the UK is a long-term, cross sectorial issue, involving social, environmental and economical aspects. Which means its assessment or evaluation is not an easy task and it is better to see such processes as transitions. According to them, both the Sustainable Communities Program and Code for Sustainable homes are recent changes that amount to a landscape change putting pressure on the institutions. While these will inevitably cause some change in house-building and planning practices, it is necessary to research under what conditions this pressure might result in a transition, and if so whether this result in more sustainable housing and communities.

In the case of Sustainable Communities Program, its broad and general nature has not been assessed because it requires the intervention of many local governments in the UK alongside with population affected. In fact, some authors like Pinnegar (2006) and Turcu (2007) acknowledge that assessing/ measuring 'sustainability' in programs and plans is not an easy task because of its complexity, definitional obstacles and different approaches. Second, there is no established framework that specifically looks at community sustainability and therefore many authors use 'ad-hoc' sustainable communities' checklists without clear theoretical and methodological foundations. Therefore, there are indicators to carry on such a task. In this case, most of them have been already set by Office of the deputy Prime Minister (ODPM, 2004) to be used for its concrete actions, but no concrete assessment has been found. The indicators are as follow>

- Social and cultural
- Governance
- Environmental
- Housing and the built environment
- Transport and connectivity
- Economy
- Services

Table 2. Checklist for sustainable communities. (Source. Power, 2004)

Checklist for sustainable communities
1. Does the community (residents, service providers and other local stakeholders) have a key role in analysing the challenges and deciding priorities within the available and potential resources?
2. Do homes have the highest SAP rating, including refurbished homes and reuse of existing buildings – is the cost of achieving this for existing homes built in to the plan, with a payback time of a typical loan of 10-30 years?
3. Are the materials and components used in construction as locally sourced as possible, health friendly (e.g. low toxins), low in embodied energy, and easily and locally maintainable? Are new communities going to have the lowest energy use overall, the lowest environmental impact overall and overall beneficial social effects?
4. Is there sufficient useable green space within walking distance (15 minutes from any home with a push chair) with trees (to absorb carbon and provide shade and shelter) and supervision and maintenance? Does the green space provide wildlife habitats and contribute to urban drainage?
5. Are the streets pedestrian and cycle friendly to encourage local contact, informal surveillance and local shopping? Do street fronts include shops and small businesses near bus stops and intersections?
6. Does the settlement have frequent, reliable, cheap public transport requiring a density of at least 50 homes per hectare to support bus routes, local shops and schools? Is car parking and car access organised: a) to allow and encourage essential economic and social activity? b) to deter unnecessary journeys? c) to generate income for local services (particularly public transport)? d) to rebalance urban communities in favour of families, young children, elderly – social contact and street life generally? Parking fees/permits, the limiting of road space, enforcement of speed limits, and the establishment of Home Zones are some techniques.
7. Is the design and layout of communities creating a viable mix of people and uses, integrating old with new, providing community facilities, parks and play areas, benches, planting, encouraging involvement, commitment, ownership and investment –attracting people of different ethnic and social backgrounds?
8. Do communities have meeting points? • benches, pocket parks, play areas, cafes Are there community facilities? • centres for meetings, for hire, for parties and weddings • churches with social activities and provision attached Are there ways for residents to make an input into their communities? Do all sections of the community have a chance to influence and make decisions that affect their future? What about local schools, training facilities, lifelong learning?
9. Are there front-line jobs – with training and recognition – to care for, protect, repair the neighbourhood? This strategy helps people needing work, creates informal supervision and maintains conditions. The park keeper, caretaker, warden, and school assistant are examples.
10. Is there proper security, street supervision, repair and maintenance and environmental care? For instance, is there a neighbourhood management team responsible for organising this basic environmental and social service and co-ordinating public inputs to maximise community quality of life?

On the other hand, Innes & Booher (2000) consider that the sole use of indicators to evaluate how a policy is affecting a certain community is a misunderstanding of what those can do. In that sense, evaluation involves measurement and analysis of all the factors that may contribute to a policy's success or failure, along with careful design of research to isolate the policy variable from the other factors. Indicators should provide feedback to the leadership so they can say whether a policy is moving in the right direction, at the right pace, or identify problem areas where staff needs to develop some new approaches. These are not definitive performance assessments of a policy or program, but part of a set of information that the experienced policy-maker or planner uses to make sense of many interlinked activities and ongoing events. Indicators themselves do not show the causes of problems, only reveal their existence.

A relevant aspect is a contradictory discourse in parts of the program, while referring to redevelopment of brown field areas and trying to preserve green fields, authorities still allow developments that will bring more market value to a specific zone even if it is a greenfield. As presented in chapter three an example of sustainable development, The Hamptons, was sold as an exclusive residential area with its green features as the most notorious characteristic. But then again, London won a new suburb (not a gated community though) that limits social cohesion and surrounds new homeowners in a sort of real state bubble away from not wealthy households. And even if the mixed land use exist, there are also social housing projects in the area, the reality is that those in economic disadvantage do not enjoy the communal areas as they are entitled to.

Regarding the code for sustainable homes, Forbes (2007) considers it to be more of an environmental code and suggest that it requires tightening to contribute to an overall sustainable code. He points out that the code is said to be the sustainable assessment of new homes in the UK. However, in the code the only area of sustainability that is assessed is the environment. Leaving the other two pillars of sustainability (social and economic) ignored. In order that new housing the UK is comprehensively sustainable, both the social and economic aspects must be considered. This may include effects on transport energy consumption because this would reflect the relative locations of houses, shops and workplaces as well as household income levels. Nevertheless, there is evidence of increasing investment in Sustainable Housing in the U.K. with more and more construction companies informed and willing to comply with new regulations. The barriers which face low carbon housing vary and include the following; design practices such as the quantity of inaccurate assumptions, the perception that the building industry has a reluctance to build to a higher standard than the minimum required and to people investing in home renewable technologies due to a lack of awareness.

The construction cost is another important factor, which in the case of a house complying with the level 6 of the CSH is about 40% more than a regular one (CLG, 2010). This code seems one tough building regulation that can be seen as a challenge for some developers and builders or as a limitation, because some will think it is too expensive to meet them. Also it will be difficult to achieve the insulation targets proposed by the code using old construction methods, so it can be considered as a push for change.

The plan sets out clearly how housing problems can be tackled over the next generation. But it raises significant challenges for sustainable development, requiring major new investment, new skills, higher energy efficiency standards and considerable innovation if it is to avoid a repetition of past mistakes and cumulative negative impacts all over the country. A much wider shift in planning, regeneration, economic incentives, social and environmental care must strengthen the Plan. (Power, 2004)

As refer by Power (2004) there is also the need to address failure in the operation of the market, and share long-term outcomes in terms of creating vibrant communities. 'Sustainability', 'liveability', 'quality of life', and 'stronger communities' are at the same time both easy and difficult terms to articulate. On the one hand, such terms identify outcomes which residents and

communities may identify with and consider important, but on the other, may find them rather amorphous and difficult to relate these long term-outcomes to immediate, local issues that may be front-of-mind. Cleaning up streets, putting investment into public space and removing graffiti help provide good routes into 'liveability', but the pathways to 'building strong and sustainable communities' are complex for the policymakers and practitioners involved, let alone for general public debate and consultation with communities.

In Nicaragua's case the National housing plan is evaluated every year by INVUR in quantitative terms. This is due to the plans nature. The latest results published in 2010 indicated, the increase in amount of new social houses sold, mortgage credit by financial institutions (banks) and rise in the number of subsidies of the interest rate for new homeowners. The evaluation also shows that houses are developed mostly in urban areas. (INVUR, 2010) These results expressed advances, however since no qualitative assessment or evaluation has been done, figures and numbers are just indication of an improvement in government's capacity for delivering new social housing. As point out by Innes & Booher(2000) people, not numbers, do the speaking.

5.2 How can Nicaragua learn from these experiences and how could UKs agenda be improved?

As mentioned by Rose, lesson drawing is mostly sought when certain situation is in need of a shift to generate different results. Needless to say, its aim is to avoid pitfalls for future implementation. As previously mentioned Nicaragua s unsustainable pattern of social housing provision will bring more problems to new owners and to local governments in the long run. The United Kingdom has already directed actions toward sustainable housing but with specific results in environmental sustainability.

Following the steps prescribed by Rose (See chapter 2), the first three can be considered taken. However, the third step, investigation of how the program and plan work in the United Kingdom would it be more accurate if the research would have taken place in the implementation site and for a longer period. Nevertheless, this is considered a valid starting point.

The fourth step is to abstract a cause effect model for export. In this case, a clear cause effect model is set in a technical way, in the code for sustainable homes. The code is mandatory for all new housing construction, including social housing. Even though only the environmental part is taken into account and it will increase the initial construction price, in the long run it will translate into energy and water savings. The lesson does not concern the technological regulation because those should be context based.

The fifth step, relates to lesson design. This would involve laws, personnel and administrative requirements. In general is how to make the lesson effective in a different context. First, a government's interest and laws to enable subsidies for those environmental friendly or sustainable houses. This will require the involvement of INVUR as the main authority to establish the sustainable agenda, followed by local governments and the rest of organizations related to housing provision.

For the sixth step, when judging if the lesson is worth importing, political concerns are relevant. It is not on the hands of the technical part to decide whether or not a lesson should be imported. Technical advice is necessary but final decisions come from the relevant authorities. In Nicaragua's case the responsible will be INVUR, but with the support of government and other political parties.

5.3 How can the sustainability agenda be included in Nicaragua context or under what conditions could it be included?

This is the seventh step of drawing lesson, also known as limitations of implementation or feasibility of implementing the sustainable agenda in Nicaraguan context. The historical problems in the social housing sector and the annual increase in demand, is linked to factors related to the context of social and political institutions of the country (Habitat, 2008). On the one hand, the economic situation with high unemployment rate, which is not allowing to the most vulnerable social groups to have sufficient resources and limit their ability to cope with a credit and / or savings for this housing investment.

Limitation of social, legal and technical order, like the lack of access to land and ownership issues (legality), lack of basic services and poor quality of housing construction (Habitat, 2008).

In the institutional aspect, it is a good sign that government has issued laws and made alliances relating to the interest in boosting the construction sector with the construction of new social houses. In fact, the results have been seen lately, government subsidies to interest rates, and that the Nicaraguan Institute of Social Security (INSS) has made available funds for banks to housing finance with better interest rates, were the main factors for construction sector recovery (Central America data, 2011). This was a top down measure, but it turned out effective for government's purposes.

According to De Schiller (2012) the most important thing for including the sustainable agenda in a developing country is to have governmental policies that favor long-term investments, in order to obtain homes that 'last' long and operate efficiently without relying on large energy consumption rates. Sustainability does not imply high costs, but the opposite, since it is / should be economical for long-term durability. The conventional practice which estimates the initial cost is usually very short term. Produce sustainable social housing is sustainable for society. Not to be confused with some systems green building certification, in some cases, conceal business interests, operating sophisticated mechanisms, acquisition of expensive materials and elements imported from industrialized countries, and so on. But that is not sustainable long term for all.

Considering the economic limitations of the country she also suggests active social participation in the production of housing, training and education, energy efficiency and incorporate renewable and clean energy, rational use of water, use of micro-climate vegetation as environmental measure, healthy materials or low impact for health and the environment, employment of local labor with simple construction techniques known to the people or groups involved. In general, use solutions less dependent on technology and more on design. This can be considered as facing the problem of context.

Lopez de Asiain (2012) emphasizes the need for the wise use of limited resources in countries like Nicaragua. For including a sustainable agenda, the determining factor is political interest. She also reflects on the importance of indicator for assessing and measure the environmental sustainability of constructions, and firmly believes that codes like the one in UK, should not only be used for housing but for all construction typologies. The social sustainability is mostly related to the planning sector rather than the construction which means it is even more complex to set out codes or rules for including that part or even evaluating it.

5.4 Concluding remarks

Among the results of UKs cases, a positive one is the intention of achieve some change in planning and housing provision. In the other hand, a negative result, no assessment of those achievements can be so clear at least not in the Sustainable Communities Program. Obtaining results and assess them is not easy task. Even though the indicators exist, they have not been applied. It is also possible that such lack of implementation is due to the resource requirements such as logistic or economic. And there is a chance if used those will only show numbers, and still not enough to determine how sustainable a community is. In case of housing and the Code for sustainable homes, assessment is easier because it is very technical and with a proper check list, a construction can be classified as zero carbon, easier than to classify a community as sustainable.

The way in which Nicaragua can learn from UK experience is lesson drawing. Even if many lessons can be obtained from cases presented, it is more accurate to cover small steps, rather than use everything that might sound or look effective in another context. This justifies the choice of a unique lesson from the data analysis. Unfortunately, it is more a technical lesson and relates to environmental sustainability. It is more than clear that other two, social and economic sustainability, are really hard to achieve.

Inclusion of a sustainable agenda can be a gradual process. Overall the idea of constructing and planning ahead with a sustainable agenda in mind that would involve higher initial costs is justified if the long term thinking prevails. It is also important to remember, that economic limitations in Nicaragua leads to cuts in technological investments, however that does not mean that good design need to be sacrificed. Most of the times, budget limitations make authorities believe that short term plans are the best way out of complex problems.

6. CONCLUSIONS AND RECOMMENDATIONS

Previous chapters presented insights on sustainable social housing plans and planning guidelines for United Kingdom, and also on social housing situation in Nicaragua. The fifth chapter dealt with the analysis of empirical data presented based on relations with theoretical framework and research questions. Thus, this final chapter will conclude with a brief summary of answers of those questions, providing also recommendations for theory and practice.

6.1   Summary of the thesis

Social housing shortage is a recurrent and complex problem in United Kingdom and Nicaragua. Both are taking actions to tackle the issue, but only the first is concern with the sustainability agenda.

The aim of this research was to gain broader understanding on how Sustainable Communities Program and Code for Sustainable Homes operate in the United Kingdom and look for lesson drawing opportunities for social housing policymakers in Nicaragua's context.

Along the development of the study, the established research questions were answered

- What is the theoretical link between social housing and sustainability?

As De Schiller (2012) states the relationship between sustainability and social housing, or just 'home' is as essential as practical as it involves better life for all, involving the three basic areas of sustainability: social, economic and environmental. Those interact and complement each criterion in green building, in every action and every enforcement mechanism, so the overall housing and social housing in particular, should be:

- The most economical in the use of available resources: materials, water, energy …

- The most socially just: distribution and equity

- The least impact on the environment, because it depends on the impact / in people.

- What has been done related to the sustainability agenda for housing and particularly social housing in the United Kingdom?

Among the initiatives the Sustainable Communities Program and the Code for Sustainable homes, the latter with mandatory status since 2008, for new housing construction including social housing. Both reflect the government interest in placing housing in the centre stage for improving life quality and achieving sustainability. The SCP includes more planning aspects and the CSH those related to construction regulations. But still both claim sustainability, but the first still remains disguised as a market oriented strategy and the latter search for environmental sustainability.

- What are the results, both positives and negatives, of that agenda so far?

There are limitations on their assessments, mostly in the case of the SCP. The most interesting part to evaluate should have been the social sustainability of the actions presented in that Program, but that is a complex task as the program itself. This indicates how a broad programme can also be difficult to implement. For the CSH due to its technical nature environmental assessment has been done showing the applicability of the regulations for energy and water savings, indicating an increase in construction costs.

- How can Nicaragua learn from these experiences?

Positive results encourage lesson drawing from one context to another. For Nicaragua case it is clear that political interest is the main factor for including sustainable agenda in social housing policy. As the clearest lesson from UKs the code for sustainable homes stands out. Mainly due to its technical assessment even though its applicability is context based.

- How could UKs sustainable agenda be improved?

Basically the code is fair and intensifies technical research in the building sector; however its obligatory and strict character should be revised. Economic underlying issues might slow down the construction sector, and hurt social housing provision. Another relevant issue, mostly in planning arena, would be the social cohesion enforcement, more research on how to get liveability before development are built, instead of gathering together, just by regulations, different social groups that leads to dissatisfaction.

- How can the sustainability agenda be included in Nicaragua context or under what conditions could it be included?

As the sustainable agenda can be seen as a lesson from United Kingdom's, a proper mechanism would be lesson drawing steps proposed by Rose. This simple method can be replicated more than once and might be beneficial in the long run

6.2 Implications for theory

When climate change challenges in our present time where acknowledged, the term sustainable arose. But steps toward that ideal are not taking so seriously in practice so far. Yes, there are programs and codes, which sound convincing as written proposals about change and a sustainable future, but it is fair to say that in practice is another story. It is messy to deal with sustainability. It appears to be an overrated term, sustainable could mean utopia also. Achieving a balance it is not possible, unless a system change, a real one was about to happen, and it is not the case.

Sometimes the term sustainable appears as a marketing strategy. It sounds more attractive to add the adjective to housing, social housing or communities, because now it is an institutionalized term, that no politician or government can avoid in discourses. Sustainable has within the idea of good or better, and everybody would like that, at least in theory.

Theorists can argue about the meaning and contradictions that the term involves, but in practice, for real people, those in need of really ´sustainable´ social housing might not care if the term is accurate or not, or even if they are in a zero carbon home, as long as they have a decent roof above their heads. So climate change is an issue, but zero carbon homes or level six of the strict code for sustainable homes is too much to bear. It might even be counterproductive by limiting the provision of social housing. But still lessons from it are valuable.

Now lesson drawing can be considered the opposite of sustainability, it is more practical and easier to deal with, so to speak. Now the code for sustainable home is valuable because it has challenge designers and builders that want to comply with it, and some of them have succeed, which mean it is possible to meet some technical requirements and achieve some sort of ´environmental sustainability´. For Nicaragua context, the lesson is, more than apply technology to reduce emissions and have a strict code that force to do that. It is to try to challenge those building professionals with sustainability parameters to come up with new alternatives that can protect the environment by making a rational use of resources while improving quality of life for those more vulnerable households. And of course, prioritize social cohesion with help of planning guidelines.

6.3   Implications for policy

Understanding United Kingdom's example, can lead to changes in social housing policy in Nicaragua. Regarding Nicaragua's context, this research has offered insight for planners, designers and policy makers on what is being done in a different context for sustainable housing. A possible applicability requires further research and an objective evaluation of the institutional constraints that might be finding in the way. A relevant issue is the sustainability indicators that should be further developed if some actions toward sustainability are intended.

Policy makers need to formulate national sustainable social housing policy that facilitates the linkage between society, institutions and finance institutions. Acknowledge the current social housing situation in Nicaragua and envisage a future of decent housing that includes sustainability is a difficult but not impossible to achieve goal.

First, government should develop a technical view supported on community capacity in partnership with NGOs, developers, and financial institutions for designing and implementing program or projects for delivering sustainable social housing. Local governments should be encouraged by national government to prioritize such projects and include sustainability indicator in planning. In addition, government also needs to formulate special rules or mechanisms as incentives or subsidies taking into account not only the national but the local context.

6.4   Limitations of the study and suggestions for further research

The weakness of this research lies on the document based methodology, with no direct contact with the implementation sites of Sustainable Communities Program and Code for Sustainable homes. In order to enrich further research more time and direct contact with policy makers and residents of referred sustainable communities and homes would be a plus.

Nevertheless, some interviews were carried out to obtain opinions and suggestions to include the sustainable agenda in Nicaragua's context. Even though the representative of a local social housing NGOs show availability for interview, she was not available at last minute.

In relation to research methodology, the secondary data was the only way to understand how program and plans worked in United Kingdom's context. This means there was no much chance to be subjective about it.

The scope limitation in this research implicates the need to do further research related to sustainable housing programs and plans and their assessments. This study talks about national level, and regional characteristics which are different from one area to another were not taken into account in either of both countries. Since the focus is to obtain lessons from two important actions focused on housing sustainability, further research could be focused on evaluating particular results mostly of the Sustainable Communities Program due to its social relevance for sustainability.

Suggestions for further research include the community review of the SCP, and owner's satisfaction for those houses that comply with the CSH. Also the analysis of pilot projects in which the code and the program are used would be of research interest. For Nicaragua's case further interest on social housing owner's satisfaction would be useful to back up reforms in social housing policy.

REFERENCES

Books

Armstrong, H. 2000. Sustainability and housing: the government view. In: Edwards, B. and Turrent D. ed. 2000. *Sustainable housing – Principles and Practice*. New York: Routledge, pp. 1-6

Creswell, J. 1997. *Qualitative inquire and research design. Choosing among five traditions*. London: Sage Publications

Gunder, M.,Hillier, J. 2009. *Planning in ten words or less. A lacanian entanglement with spatial planning.* Surrey: Ashgate publishing limited.

Harriott, S. and Matthews, L. (with Grainger,P.) 1998. *Social Housing: An introduction*. Harlow, Essex: Longman

Meadows, D.. 2004. *A synopsis: The limits of grow-The thirty year update.* Hartford, Vermont, United States: Chelsea Green Publishing Company.

Ritchie , J., Lewis, J.2003. *Qualitative research practice: A guide for social sciences studies and researchers*. London: Sage publications

Rose, R. 2002. *Ten steps in learning lessons from abroad*. Florence:European University Institute.

Yin, R. 2002. *Case study research. Design and methods*. London: Sage publications.

Wilson, E., and Piper, J., 2010. *Spatial planning and climate change.* London: Routledge.

Journals

Connelly, S. (2007): Mapping Sustainable Development as a Contested Concept, Local Environment: *The International Journal of Justice and Sustainability*, 12:3, 259-278

Edward J. ,Jepson, Jr. 2001. Sustainability and Planning: Diverse Concepts and Close Associations. *Journal of Planning Literature* 15: 499

Innes, J. & Booher, D., 2000. Indicators for Sustainable communities: A Strategy Building on Complexity Theory and Distributed Intelligence, *Planning Theory & Practice*, 1:2, 173-186.

Lovell, H. (2004): Framing sustainable housing as a solution to climate change, *Journal of Environmental Policy & Planning*, 6:1, 35-55

Markusen, A (1999) Fuzzy Concepts, Scanty Evidence, Policy Distance: The Case for Rigour and Policy Relevance in Critical Regional Studies. *Regional Studies,* Vol. 33:9, 869-884.

Pickvance, Chris (2009): The construction of UK sustainable housing policy and the role of pressure groups, Local Environment: *The International Journal of Justice and Sustainability*, 14:4, 329-345

Pinnegar, S., 2006. *Are complex programs the best response to complex policy issues?*. Kensington. City Futures Research Centre Issues Paper. University of New South Wales.

Rose, R. What is lesson drawing?. *Journal of public policy.* Vol. 11, No. 1, Lesson-Drawing across Nations (Jan. - Mar., 1991), pp. 3-30

Electronic publications

Centralamerica data. 2012. *Nicaragua: vivienda social impulsa sector de la construcción.* [online] Available at:<http://www.centralamericadata.com/es/article/business_commerce/Nicaragua_vivienda_social_impulsa_sector_de_la_construccion> [Accessed 28 June 2012]

Dailymail, 2008. Dailymail. *Apartheid UK: How a controversial law to integrate social housing in new developments is creating mini-ghettos.* [online] Available at:< http://www.dailymail.co.uk/news/article-1040709/Apartheid-UK-How-controversial-law-integrate-social-housing-new-developments-creating-mini-ghettos.html> [Accessed 20 August 2012]

Enabling Projects Limited, 2011. [online] Available at:< http://www.enablinguk.com/spatial-planning-and-sustainable-development.htm> [Accessed 14 May 2012]

Joburg, 2001. The sustainable housing strategy. City of johanesburg. [online] Available at:< http://www.joburg.org.za> [Accessed 18 August 2012]

United Nations Environment Program (UNEP), 2011. *Sustainable Social Housing Initiative*. [online] Available at: http://www.unep.org/SustainableSocialHousing/why_sushi/setting_priorities.asp> [Accesed 17 January 2012]

United Nations Economic and Social Development. 1993. Agenda 21 [online] Available at:< http://www.un.org/esa/dsd/agenda21/res_agenda21_07.shtml 17 08 2012 > [Accessed 14 August 2012]

Websites

Defra 2011. Department for environment Food and Rural Affairs. *Sustainable development in government* [online]Available at:<http://sd.defra.gov.uk/what/> [Accessed 14 May 2012]

DCLG, 2012. Department for Communities and Local governments. [online] Available at:<http://www.communities.gov.uk/corporate/> [Accessed 30 May 2012]

Index Mundi, 2011. Nicaragua población. [online] Available at: <http://www.indexmundi.com/es/nicaragua/poblacion.html> [Accessed 23 April 2012].

INVUR, 2012. Instituto Nicaragüense de la Vivienda Urbana y Rural. [online] Available at: < http://www.invur.gob.ni/> [Accessed 01 June 2012].

Potton, 2012. Potton timber frame manufacturer. [online] Available at: < http://www.potton.co.uk/> [Accessed 19 August 2012]

Oxley Woods, 2012.Oxley Woods. [online] Available at:< http://www.oxleywoods.com/> [Accessed 19 August 2012]

Wikipedia, 2012. Wikipedia. [online] Available at: < http://en.wikipedia.org/wiki/Skype> [Accessed 04 May 2012].

Merriam Webster dictionary,2012. Merriam Webster dictionary [online]. Available at< http://www.merriam-webster.com/> [Accesed 09 May 2012]

Law and regulations

Bergman, N., Whitmarsh, L., Köhler,J., Haxeltine, A. Schilperoord, M.,2007. Assessing transitions to sustainable housing and communities in the UK. In: *International Conference on Whole Life Urban Sustainability and its Assessment*. Glasgow, 2007.

Department Communities and Local Governments,2003. *Sustainable Communities: Building for the future.* London:Crown

Department Communities and Local Governments,2007. *Strategic Housing Market Assessments Practice Guidance Version 2.* London:Crown

Department Communities and Local Government, 2010. Code for Sustainable Homes: A cost review. Wetherby. West Yorkshire.

Habitat, 2008. *Información clave sobre La Situación Actual de la Vivienda Social en Nicaragua.*

INVUR. 2005. Plan Nacional de Vivienda de la Republica de Nicaragua 2005-2020. Nicaragua

INVUR. 2010. Informe de avance del plan de vivienda año 2010. Managua, Nicaragua.

La Gaceta. Ley de Municipios, 1988. Nicaragua

La Gaceta. Ley especial para el fomento de la construcción de vivienda y de acceso a la vivienda de interés social, 2009. Nicaragua

Local government, 2006. *All Our Futures: The challenges for local governance in 2015*. London: Local Government

Office of the Deputy Prime Minister - ODPM, 2004. *The egan review. The skills for sustainable communities.* London

Power, A. 2004. Sustainable communities and sustainable development: a review of the sustainable communities plan.

Royal Town Planning Institute (RTPI), 2006. *Introduction: Spatial Planning in England*. [online] Available at:<http://www.rtpi.org.uk/download/7315/Sheet_1_Spatial_Planning_in_England.pdf> [Accessed 14 May 2012]

Smith, M. 2008. 'Sustainable communities and neighbourhoods. Theory, policy and practice', [online] *the encyclopedia of informal education*. Available at:<www.infed.org/communities/sustainable_communities.htm> [Accessed 13 May 2012]

Turcu, C. 2007. W15 – Housing and urban sustainability. Sustainable regeneration, sustainable communities or both? Assessing the impact of housing renewal on community sustainability – a theoretical model. International conference 25/28 june Rotterdam 2007. Sustainable Urban Areas

Thesis

Forbes, R. 2007. 'Code for Sustainable Homes: An Evaluation of Low Carbon Dwellings'. Master thesis, University of Strathclyde. Department of Mechanical Engineering. Energy Systems Research Unit.

Nijenmanting, F.C. and Senel, M.S, 2010. 'Design of an affordable and sustainable house concept for the Netherlands'. Master thesis, Technische Universiteit Eindhoven.

Roysart, A. 2009. 'An analysis of social conditions of compact cities in the Netherlands', Master thesis. University of Groningen and Institut Teknologi Bandung.

Stone, D. 2000. 'Learning Lessons, Policy Transfer and the International Diffusion of Policy Ideas' Centre for the Study of Globalisation and Regionalisation

Vanegas, T., 2007, 'Relevancia de criterios bioclimáticos para la vivienda social urbana en clima calido húmedo', Master thesis, Universidad Internacional de Andalucía.

Alfons, R., 2009, 'An analysis of social conditions of compact cities in the Netherlands', Master thesis, University of Groningen.

Others

Erguden, S. (2001). Low-cost housing: Policies and constraints in developing countries. *International Conference on Spatial Information for Sustainable Development* (pág. 11). Nairobi, Kenya: United Nations Centre for Human Settlements (Habitat).

Secretaria de comunicación, 2010. *Conferencia de presentación gobierno de Nicaragua.*
Lanzamiento del programa Vivienda Social Solidaria.
Maby, C., 2009. *Financial and Support Instruments for Fuel Poverty in Social Housing (FinSH) Review of Current Knowledge of Target Group Behaviour – UK*. Gloucester: SevernWye/Energy agency.
Myerson, D. *Environmentally sustainable affordable housing. The 2007 ULI/Charles H. Shaw Forum on Urban Community Issues. October 4–5, 2007*
Carter, K. and Fortune, C. COBRA 2002. Proceedings of the RICS Foundation construction and building research conference Nottingham Trent University.
Rose, R. How to Draw Lessons: A Guide for Policy Analysis

La prensa, 2012. La prensa. Cruz, E. La casa de sus sueños. [online] Available at:< http://www.laprensa.com.ni/2012/06/17/ambito/105326-casa-suenos> [Accessed 17 June 2012]

APPENDIX

- Prof. Dr. Arch Silvia de Schiller.
  Bioenvironmental research specialist in design and urban sustainability is Professor of Architecture, University of Buenos Aires and Co-Director of Research Centre Habitat and Energy Urban and Regional Planning, Buenos Aires. Specialization in Planning and Housing, Rotterdam, and Ph.D. in Urban Design at the University of Oxford Brookes, UK
- Prof. Dr. Maria Lopez de Asiain Alberich
  Environment and Sustainability Specialist, is professor of School of Architecture in Seville, Spain. Researcher in Architecture and Environment Seminar (SAMA SC)

Appendix 2. Interview questions / guideline

1. In your opinion, what is the relationship (theoretical or practical) between sustainability and social housing?

2. Aware of policies, plans, projects or strategies of sustainable housing in other countries? What is your experience on this?

3. Why would it be feasible to include the term or rather the sustainable agenda in the area of social housing?

4. Housing policy in Nicaragua is aimed at reducing the housing deficit without a sustainability agenda at the time. What factors would be crucial to include this agenda and to generate sustainable social housing?

5. What key elements would include this agenda?

6. Some consider include the sustainability agenda is very expensive so it is less justifiable for social housing which is directed to persons under purchasing power. What is your opinion?

7. Suggestions in order to introduce this agenda of sustainability.

Number of new social houses built in 2012 by private developers in Managua, Nicaragua.

Gobierno de Reconciliación
y Unidad Nacional
El Pueblo, Presidente!

2010:
AÑO DE LA
SOLIDARIDAD
Viva Nicaragua Libre!

1.   VENTAS DE CASAS DE INTERÉS SOCIAL NUEVAS.

1,889 Casas nuevas de interés social se han vendido de enero a agosto del 2010 por empresas Urbanizadoras. *Ver Gráfico y Cuadro No 1.*

Gráfico No. 1
Saldos de Ventas de Casas Acumuladas por Mes

Mes	Casas
Ago	1,889
Jul	1,644
Jun	1,382
May	858
Abr	710
Mar	575
Feb	257
Ene	116
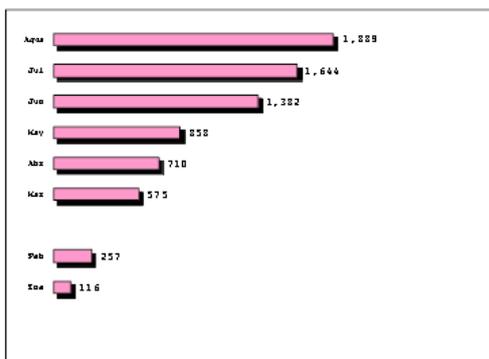
Cuadro No. 1
Ventas de Casas por Urbanizadoras
Año 2010

Urbanización	Casas Vendidas
Ciudad El Doral	419
Valle Santa Rosa	274
Vistas del Momotombo	273
Las Delicias	193
San Andrés	129
Valles Sandino	109
Villa Sol	101
Altos La Sabana	90
Prados de San Jerónimo	65
Urb. Guardabarranco	55
Sta María de las Victorias	50
Urb. Mayales	39
Praderas del Doral	27
Mirador San Judas	23
Cedro Galán	18
Praderas del Mombacho	6
Altos de Motastepe	16
TOTAL	1,889

PODER
CIUDADANO
Nicaragua Gana con Vos!

Nicaragua en el Alba
CRISTIANA, SOCIALISTA, SOLIDARIA!
INSTITUTO DE LA VIVIENDA URBANA Y RURAL (INVUR)
Km. 4 ½ carretera sur - 22666-112 al 114
info@invur.gob.ni - www.invur.gob.ni